APPLETONS'

ANNUAL CYCLOPÆDIA

AND

REGISTER OF IMPORTANT EVENTS

OF THE YEAR

1883.

EMBRACING POLITICAL, CIVIL, MILITARY, AND SOCIAL AFFAIRS; PUBLIC DOCUMENTS; BIOGRAPHY, STATISTICS, COMMERCE, FINANCE, LITERATURE, SCIENCE, AGRICULTURE, AND MECHANICAL INDUSTRY.

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PREFACE.

In the present volume of the Annual Cyclopædia, the eighth of the New Series, some improvements have been introduced which it is hoped will add to its attractiveness and usefulness. The subjects treated have been subdivided with unusual care, and the use of full-face type for the heads and sub-heads brings them out more distinctly, and renders it easier for the reader to turn at once to the exact piece of information which he seeks. Increased attention has been given to illustration. The accounts of the wars in Egypt and Tonquin are each accompanied by a full-page map; another full-page map exhibits the annual rainfall in every part of the United States, and a colored map shows the new time-system recently adopted; there is a large view of the Cantilever Bridge at Niagara, one of the German National Monument on the Niederwald, and one of the new Capitol at Albany; the improvements in the use of gas and electricity are fully illustrated; and some strange and important discoveries in the aberration of sound as used for fog-signals are represented by curious diagrams. Portraits of the new Archbishop of Canterbury, Speaker Carlisle, Peter Cooper, Gustave Doré, General Gordon, Hicks Pasha, Mario the singer, General Sheridan, Alexander H. Stephens, Wagner the composer, and other celebrities, appear in their proper places.

The report of the proceedings of Congress has been made unusually full, as a means of ready reference to several subjects of national interest which will be discussed in the Presidential canvass of 1884.

A brief summary of the events of the year, in chronological order, is a new feature, serving to refresh the reader's memory as to numerous occurrences which could not be treated at length in a work like this. The paper on the "Composition and Nutritive Value of Foods," and that on the "United States Fish Commission," with instructions for the propagation and preservation of fish, will be found especially instructive and practical.

Mr. Alphonso A. Hopkins, Prohibition candidate for Governor of New York in 1882, gives a full history of prohibition, from the earliest times to the present day—a subject that is rapidly making for itself a place in political and legislative affairs; while the editor of the Salvation Army's publications gives an authoritative account of that strange movement in the religious world. The recent advances in chemistry, surgery, and other sciences are noted, and the present condition of each of the great denominations of Christians is set forth.

The articles "Failures in Business," "Financial Review of 1883," and "United States Finances," show clearly what has taken place in the monetary world. These and the numerous other articles, most of which, being subjects treated every year, need not be specially enumerated, constitute substantially the world's chronicle for 1883. Those who have just lived that year amid the crowding occurrences of our hurrying age, will realize, as they glance over the record, how letters in their simplest and humblest capacity, if they can not bring back the past, at least may double memory, and thereby lengthen life.

An index to the eight volumes (including the present) of the New Series will be found at the close of the book. An effort has been made to give it sufficient fullness to render all the information easily accessible, and yet not to overload it with needless entries that obscure the very things the reader is looking for.

In its proper place will be found a portrait and brief sketch of the late William J. Tenney, who edited this work from its beginning, in 1861, up to and including the volume for 1882.

NEW YORK, *April 11, 1884.*

THE

ANNUAL CYCLOPÆDIA.

A

AFGHANISTAN. Abdurrahman Khan, since he was set up by the British as Amir of Afghanistan, has struggled vigorously to consolidate the Afghan state and maintain his rule over the loose league of turbulent clans which form the Afghan nation. After the withdrawal of the British army from Afghanistan, there was no hope of preserving a close control over Abdurrahman, for as a puppet of England he would immediately become impossible. As the British nominee, he was left in an exceedingly difficult position. The policy of the Imperial Government was, to attempt no dictation and make no exhibition of British power in Afghanistan, nor even inquire too closely into the loyalty and friendship of the Amir, yet to supply him liberally with money and war materials, at the expense of the Indian revenue, so as to enable him to buy or compel the submission of his vassals. "A strong, peaceful, and friendly Afghanistan" was the aim of this policy, the friendship to be won by large gifts and the renunciation of British claims to domination, which would encourage the Afghans to apply their united strength to resist Russian encroachments. Abdurrahman gained possession of the fortress of Herat, which is the bulwark of Afghanistan on the west, by a prompt military movement. His energy, or that of his lieutenants, broke up the seemingly formidable power of his cousin and rival, Ayub. Yet the undivided authority of the Amir was not established in Herat, nor can the Heratis be counted upon in future complications to remain true either to their allegiance to the Amir, or to their political union with Southern Afghanistan. Gen. Abdul Kudus Khan, who took possession of Herat in the autumn of 1881, after the defeat of Ayub, established himself there as unlimited ruler, and by the mildness of his government won the affections of the Herati people. Abdurrahman quickly re-established the sovereignty of the Amir in Turkistan, or Northern Afghanistan, as soon as he crossed the Oxus. This great province, embracing the rich region on the northern slope of the Hindoo Koosh, was given into the hands of the Amir's cousin, Isa Khan, as a reward for his fidelity to the cause of Abdurrahman while he was still living as an exile in Samarcand. Isa Khan objected to the appointment of his former subordinate, Kudus Khan, to the governorship of Herat, which post he desired for his brother, Mohsin. Abdurrahman would have been glad to please his cousins and displace the dangerous officer who had implanted himself too firmly in Herat, but he dared not put his authority to the test. This caused an alienation between the Amir and his viceroy in Turkistan. Both the northern divisions of the country are thus ruled by governors who are able and ready to defy the commands of the Amir. The advancing influence of Russia finds there a field which the misdirected efforts and sacrifices of the British have helped to prepare for it.

In the southern parts of the country Abdurrahman has been but little more successful in consolidating his power. In Cabool he rules in state with the aid of British gold, and Candahar he holds with a tolerably firm hand. But the maintenance of civil order in garrisoned towns is a different thing from keeping in subjection and restraint the Afghan people, which is composed of warlike clans who have not yet passed out of the tribal organization of society, and who will accept none of the burdens and pay none of the duties of civil government, except to unite in repelling a foreign enemy. In 1883 the Shinwarris, a tribe inhabiting the eastern side of the Sufed Koh range, rebelled against the authority of the Amir. Abdurrahman sent a force to reduce them to subjection, but the military operations accomplished nothing except to spread disaffection, and the rebellious agitation extended to the neighboring clans, the Afridis and Momunds. The Government of British India came to the aid of the Amir with arms and ammunition. Some of these were intercepted

at the Khyber pass. The spirit of discontent began to pervade the great Ghilzai nation, upon whose loyalty the power of the Amir mainly rests. These warning signs impelled Abdurrahman not to strain his authority, and he accordingly withdrew the military and yielded to the demands of the Shinwarris.

The British, seeing the power of the Amir broken in the north and threatened in the south, and knowing that the treasure which they had given him three years before, with which he had established his position, was exhausted, thought they could strengthen his hands to maintain his power and at the same time secure his wavering and uncertain attachment by coming to him in the hour of his need with the promise of a stated annual allowance sufficient to support his power and state. Pecuniary gifts and subsidies have been a feature of British policy in Afghanistan from the beginning. Dost Mohammed received, by the treaty of 1856, twelve lacs of rupees per annum during the war with Persia, besides large occasional presents of money and arms. Shere Ali was the recipient of lavish gifts of money and munitions of war, and a treaty to bestow on him a subsidy of twelve lacs a year was in negotiation when his secret understanding with Russia was discovered, and was declared. Sir Louis Cavagnari, whose murder created a fresh rupture, was the bearer of an offer to Yakub Khan of half that amount per annum. When the British set Abdurrahman on the throne, they supplied him with treasure to the amount of over thirty lacs of rupees, or nearly a million and a half of dollars. The offer now made to Abdurrahman by the Indian Government, and accepted by him, was twelve lacs of rupees per annum. The payment of this large subsidy is conditional on his conforming his external policy to the wishes and interests of the British Empire.

ALABAMA. State Government.—The following were the State officers during the year: Governor, Edward A. O'Neal, Democrat; Secretary of State, Ellis Phelan; Treasurer, Frederick H. Smith; Auditor, Jesse M. Carmichael; Attorney-General, Henry C. Tompkins; Superintendent of Public Instruction, Henry C. Armstrong. Judiciary, Supreme Court—Chief-Justice, Robert C. Brickell; Associate Justices, George W. Stone and H. M. Somerville.

Legislative Session.—The Legislature, which was in session at the beginning of the year, adjourned near the close of February. Perhaps the most important act of the session was one "to provide for the assessment and collection of taxes for the use of this State and the counties thereof, and to define the duties of officers engaged about the said assessment and collection of taxes."

It provides a complete system, and contains stringent provisions requiring individuals and corporations to make return by specific items of their property, and special provisions relating to railroad, telegraph, and telephone companies.

Another systematic act fixes the rate of poll and other taxes, the amount and kind of license fees, and defines the classes of taxable property. By an act "to establish a Department of Agriculture for the State of Alabama," a department of agriculture is created and established "which shall be under the management and control of the Commissioner of Agriculture, who shall be a practical and experienced agriculturist. Said commissioner shall be appointed by the Governor, and shall hold his office for the term of two years, and until his successor is appointed and qualified."

An act "to assist the University of Alabama, and the State Agricultural and Mechanical College, in furnishing additional room for students and facilities for instruction," appropriates the sum of $90,000. It was further enacted that "landlords of storehouses, dwelling-houses, and other buildings shall have a lien for rent, upon such goods, furniture, and effects as may belong to the tenant, and that this lien shall be a superior lien to all other liens on said goods, except for taxes."

An act "to prevent monopolies in the transportation of freight, and to secure free and fair competition in the same," provides that "it shall be unlawful for two or more railroad companies or persons operating railroads in this State to enter into any agreement among themselves, directly or indirectly, for the division among themselves of the freight-carrying business at any station, town, or city in this State, or into any pool arrangement among themselves of the nature and character aforesaid, the object, purpose, and effect of which in either event shall be to prevent free and fair competition among said railroad companies or persons operating said railroads, for said freight-carrying business, and to establish extortionate rates in favor of said companies or persons in doing said business, and which shall have the effect of being in undue restraint of the trade and business at any such station, town, or city of this State"; that "it is the true intent and meaning of this act that any such agreement rates or pool agreement made by any convention or association of freight agents, or commissioner of freight rates or rate-making committee outside of this State, but to be performed in whole or in part in this State, shall as to such part of the same as is to be performed within this State, come within the provisions of this act."

Other acts were entitled as follows:

To regulate the hiring and treatment of State and county convicts.

To regulate the business of co-operative and mutual aid and relief associations, societies, and corporations.

To amend an act to revive and complete the Geological and Agricultural Survey of the State of Alabama.

To provide for the introduction of the study of the laws of health in the public schools of this State.

To authorize railroad companies organized under the general incorporation laws to extend their lines and build branch roads.

To vacate and annul the charter and dissolve the

corporation of the city of Selma, and to provide for the application of the assets thereof to the payment of the debts thereof.

To prevent cruelty to animals.

To empower the Railroad Commission of Alabama to recommend joint local rates on freight to railroad companies and persons operating railroads in this State.

To provide for the comfort and accommodation of passengers at each of the passenger depots along the line of every railroad operated by every railroad company in this State.

To provide that a determination of any matter by the Railroad Commission within its jurisdiction shall be *prima facie* evidence that such determination was right and proper, etc.

To confer police powers upon the conductors of passenger-trains in this State.

To make appropriations for the payment of the railroad commissioners and their clerk, and for other expenses of the Railroad Commission.

To incorporate the inhabitants and territory formerly embraced within the corporate limits of the municipal corporation, since dissolved, styled the city of Selma, and to establish a local government therefor.

To authorize private corporations to hold stockholders' and directors' meetings outside of this State in certain cases.

The amount of appropriations for the fiscal year was $1,120,435.

Statistics.—The total taxable property in Alabama in the year 1881, on which the tax for the fiscal year ending September 30, 1882, was collected, is $152,880,069.24. Of this amount the railroads of the State furnished $17,574,583. The total railroad mileage in Alabama is, main track, 1,788 miles; side-track, 131 miles—1,919 in all. The total valuation of track is $15,801,829.78; of rolling-stock, $1,762,753.89. The average value of the main track is $8,643 per mile. Of the several railroads in the State, the Nashville and Decatur has the highest valuation, it being $14,000 per mile. Of the whole taxable property, the railroads furnish over 11 per cent. Variations in land values, shown by the Auditor's report, are as numerous as the counties in the State. In Baldwin, the value is 65 cents per acre. Even in so rich a county as Barbour, the valuation is only $3.50 per acre; in Cherokee, $4.50; in Escambia, less than 50 cents; in Etowah, $6.50; in Limestone, $5.11; in Lowndes, $5.06; in Madison, $6; in Marshall, over $4; in Washington, less than 50 cents.

The whole tax raised on property that reached the Treasury in the fiscal year ending September 30, 1882, was $651,156.83. Of this amount the five counties in the State paying over $20,000 apiece contributed $254,351.56, or 39 per cent. The amounts paid by each of these counties were as follow:

Mobile	$93,917 23
Montgomery	71,059 34
Dallas	36,535 23
Jefferson	27,255 35
Madison	25,584 41

The county coming next to these, but paying less than $20,000, is Barbour, with $19,185.30. The amount of licenses paid by these five counties is $25,998.90, or 36 per cent of the whole amount of license-tax. The amount of tax retained in these five counties for the school fund, which of course never reached the State treasury, was $43,435.25, or over 19 per cent. of the whole school fund.

Adding to the tax of the counties mentioned that of Barbour, Bullock, Jackson, Lowndes, Talladega, and Tuscaloosa, all of which pay over $15,000, we have the eleven counties in the State which pay over $15,000 in direct taxes, paying considerably more than half the entire property-tax of $651,156.83. The black belt is still by far the richest portion of the State, especially if we include those black counties which are not in the black belt proper.

The entire tax paid by Montgomery county, for general purposes, for the school fund, from licenses and from general taxes, aggregated $93,383.75. The whole amount paid by Mobile county was $109,620.64. The next highest was Dallas, with $40,983. Of the $651,156.83 paid into the treasury from the tax on property, Montgomery and Mobile paid $164,976.57, or about one fourth.

Congressional Election.—On the 2d of January, Gen. Joseph Wheeler was elected, by a majority of 3,846, to fill the vacancy in the 8th district, caused by the death of Mr. Lowe.

Miscellaneous.—In February, Walter L. Bragg was chosen President of the Railroad Commission. James Crook and Charles P. Ball were chosen members. In January, State Treasurer Isaac H. Vincent absconded, leaving a deficit of about $212,000.

ALGERIA. See FRANCE.

AMSTERDAM EXPOSITION. See WORLD'S FAIR AT AMSTERDAM.

ANGLICAN CHURCHES. An exhibit of the work of the Church of England, and the various societies co-operating with it, is given in "The Official Year-Book of the Church of England," the first volume of which was published in 1883, under the sanction of the Archbishops and Bishops of the English, Irish, and Scottish Churches, and of the lower house of the Convocation of Canterbury. The present number of dioceses in the Church of England, including the two archdioceses, is thirty-two. With them are connected 17,970 clergymen, of whom 11,186 are registered as "incumbents resident," 1,509 as "incumbents non-resident," 387 as "curates in sole charge," and 4,888 as "assistant curates." In communion with the Church of England are the Church of Ireland, having twelve dioceses; the Episcopal Church of Scotland, having seven dioceses; sixty colonial dioceses in America, Asia, Africa, Australasia, New Zealand, and other colonial settlements, and the Protestant Episcopal Church in the United States. (See the article on PROTESTANT EPISCOPAL CHURCH.) The official records of the several dioceses of the Church of England show the number of ordinations to the order of deacons, during the ten years ending in 1881, to have been 6,560. The number of confirmations during the same period was 1,471,718. Five general societies,

two of them dating from the last century, aid theological students requiring pecuniary help; besides which a few diocesan societies exist for the same purpose, and special funds are set apart in some of the theological schools. Special theological training is given at ten theological schools, besides the universities. The Society for Promoting the Employment of Additional Curates returns an income of £42,686, and supports, in whole or in part, 620 clergymen; the Church Pastoral Aid Society, existing with the similar purpose of increasing the number of clergymen and lay agents, returns an income of £55,659, and maintains, wholly or in part, 540 clergymen and 168 lay agents. Besides these societies and similar diocesan organizations, societies exist within the Church, whose object it is to support agencies supplementary to clerical work; and numerous special mission agencies are maintained in all the large centers of population, and among particular classes of workingmen, wherever they are congregated; in the army and navy; among British seamen abroad, at seventy foreign ports; among the fishermen of the Mersey and the Thames; among navvies, or laborers on works of public improvement; among hop-pickers; among homeless and friendless women and girls and abandoned women; among emigrants collected at ports of embarkation preparatory to sailing; and among the miscellaneous populations of the lower classes in the larger towns and cities.

According to the report presented by Lord Hampton in the House of Lords in 1874, 1,727 churches and 27 cathedrals had been built, and 7,117 churches restored, from 1840 to that time, at a total cost of £25,548,703. According to a later return, the sum of £4,326,469 was spent in thirteen dioceses upon church building and restoration between 1872 and 1881. Among the larger funds in aid of this purpose are that of the Incorporated Church Building Society, which has expended for it £785,859 since 1818, and which granted £13,690 in 1881, and the Bishop of London's Fund, applicable to the diocese of London alone, of which £588,412 were spent during the eighteen years ending with 1881. The Ecclesiastical Commissioners were the means of securing through their own grants and the benefactions that were called out to meet them, between 1840 and 1880, a total increase in the incomes of benefices of £765,500, representing a capital sum of about £23,000,000; and during 1881 they made 347 grants, amounting to £26,270, to maintain assistant clergy in twenty dioceses. The Free and Open Church Association seeks to multiply free sittings in churches; to spread the doctrine that the offertory is an obligation "for which there is a direct scriptural warrant"; and to have the churches opened daily for private prayer. It is also prepared to receive and hold trust gifts for building, endowing, and repairing free-seated churches, and to accept in trust, exercise, and dispose of the patronage of benefices.

The Church of England Temperance Society, formed in 1862, has organizations in twenty-nine dioceses, twenty-six of which return 2,443 branch societies. Steps have been taken in later years for making the cathedrals more accessible to the people, and introducing into them services adapted to popular wants, and for encouraging the employment of lay-readers and assigning them a recognized place in the service of the church. Much attention has also been given to the sending out of earnest men and persuasive speakers to interest the masses in religious concerns, or in the work of what are called "Parochial Missions." The Church Parochial Mission Society, organized in 1873, supports eight preachers, and reported, in 1881, that more than 500 missions had been held by its agents. Similar enterprises are sustained by a number of diocesan organizations. Nine deaconesses' institutions have been formed in different dioceses, as homes for women who will devote themselves to religious work and the care of the sick. They returned, in 1881, 190 nurses domiciled within them. The National Society for Promoting the Education of the Poor in the Principles of the Established Church has spent, since its formation, in 1811, more than £1,100,000 in furtherance of its object, involving, according to the statement of its secretary, an expenditure of at least twelve times as much from other sources, for the same end. In 1881 it returned 11,589 efficient church schools under government inspection, which afforded accommodation for 2,351,235 children, or more than half the school accommodation of the country. Thirty colleges have been established for the training of teachers, in which two thirds of the entire number of trained teachers in the country have received their professional education. Provision is made for the religious inspection of the schools under the direction of the bishops in the several dioceses, and for the regular examination of students in religious knowledge. A society of fellows of a college has been formed for the promotion of middle-class schools; and eight such schools provide for the education of more than two thousand boys and girls. The interests of Sunday-schools are cared for by the Church of England Sunday-School Institute, which publishes returns from 8,405 of the 14,466 parishes in England and Wales, of 16,498 Sunday-schools with 113,412 teachers and 1,289,273 enrolled scholars. The tendencies of modern thought which are described under the general term of "secularism" are opposed by the Christian Evidence Society, in which the Church co-operates with other denominations, and which works by means of conferences and meetings, sermons, lectures, open-air lectures, instruction of classes, publication and other agencies; and by the Christian Evidence Committee of the Society for the Promotion of Christian Knowledge.

Missionary Societies. — The principal foreign missionary societies of the Church are the "Society for the Propagation of the Gospel in Foreign Parts," which was organized in 1701 and has missions in all the British colonies among colonists and natives; the "Church Missionary Society for India and the East," organized in 1799, and having missions, chiefly to the heathen, in West, East, and Central Africa, Palestine, Persia, India, Ceylon, Mauritius, China, Japan, New Zealand, Northwest America, and the North Pacific coast and islands; the Zenana Missionary Society, affiliated with the Church Missionary Society, and laboring among women exclusively; the South American Missionary Society, founded in 1844, and having missions in the southern part of South America and among Indians of the Patagonian race; the Universities Mission to Central Africa, founded in 1859, especially to take care of Africans freed by the British Government from slavery, and having its center of operations at Zanzibar and in the neighboring regions of Africa; the Oxford Mission to Calcutta, organized in 1880; the Cambridge Mission to North India, formed in 1876; the Indian Church Aid Association, formed in 1880; the mission in the Diocese of Maritzburg, South Africa; the Melanesian Mission, begun in 1848; the Colonial and Continental Church Society, for providing clergymen, teachers, etc., for the colonies of Great Britain, and to minister to British residents in other parts of the world; and the Anglo-Continental Society, instituted in 1853, "to serve as an organ of the Church of England in dealing with Christians outside of England." Six special colleges or mission-houses exist for the training of missionaries, and twenty "Missionary Studentship Associations" have been formed in different dioceses.

The Colonial Bishopric's Fund was founded in 1841, to promote the growth of the Church in the colonies and distant dependencies of the British Crown, by securing the endowment of bishoprics in them. From its foundation to 1882 it had been the means of raising £635,311 toward the endowment of forty-one sees.

The London Society for Promoting Christianity among the Jews was founded in 1809, and has been distinctively a Church of England institution since 1815. It seeks to extend its labors among the people of the Hebrew race wherever they may be found, and has mission stations in England, Austria, France, Germany, Holland, Italy, Persia, Poland, Turkey, the Principalities, Asia Minor, Syria, and North America, with a special station, comprising schools, an inquirer's home, a house of industry, and a hospital at Jerusalem. It promotes the circulation of the Hebrew Bible, of a translation of the liturgy of the Church of England, and of controversial works, and maintains schools in London, Warsaw, Bucharest, and Jerusalem. It reports that 360 Israelites had been baptized at Warsaw before the mission was broken up, and 767 adults and 784 children had been baptized in London up to 1881. Its missionaries estimate that there are now 2,000 Christian Israelites in London, and probably a thousand more in other parts of England, and that there are nearly 5,000 Jewish Christians in Prussia.

The ordinary increase of the Society for the Propagation of the Gospel in Foreign Parts for 1882 was £109,041. Including £33,571 additional of gifts for special purposes, the gross receipts were £142,612. The general fund had increased £7,805 in two years. Five hundred and twenty-seven ordained ministers were employed by the society, of whom 161 were laboring in Asia, 129 in Africa, 20 in Australia and the Pacific, 216 in America and the West Indies, and one in Europe. There were also in the various missions about 1,400 catechists and lay teachers, mostly natives, and about 300 students in colleges. An important change had been made in the constitution and administration of the society. A supplemental charter granted by the Crown had removed the various anomalies which in the course of 181 years had surrounded the ancient charter; and the incorporated members scattered over the whole country now possessed by representation that power in the conduct of the society's affairs which a very large proportion of them had not previously enjoyed.

The ordinary income of the Church Missionary Society for 1882 was £200,402; including in addition the special gifts, the gross receipts amounted to £225,231. The total expenditures were £215,483. Missionary work was carried on at 206 stations, under the agency of 227 European ordained missionaries, 244 native clergy, 44 European lay missionaries, 3,106 native lay agents. Of 182,000 native Christian adherents reported, 37,391 were communicants. New work had been taken up, or extended, at the Afghan frontier, at Kok-Ning-Fu in the Fuhkien province of China, among the Esquimaux, at Bagdad, and at Cairo, Egypt, to the Mohammedans. A gift of £72,000 had been received from Mr. W. C. Jones for a "William Charles Jones China and Japan Native Church and Mission Fund."

Convocation of Canterbury.—Both houses of the Convocation of Canterbury met for business, for the first time in the year, April 10th. A minute was unanimously adopted in the upper house, with the expectation that the lower house would concur in it, taking notice of the death of the late archbishop. A "statement" was then made by the committee, to whom had been referred the question of the attitude the Church should assume with reference to the movements of the Salvation Army. The archbishop represented in behalf of the committee that it had not been found possible to make any definite statement or recommendation on the subject, as the committee considered that the movements of the organization were still in a transitory condition, and he suggested that the committee should be consti-

tuted as one of inquiry rather than as a committee to make any report or recommendation. In the course of the discussion which followed, while some of the bishops thought that the Salvation Army was doing a good work in particular places, and others conceded that its promoters were actuated by good intentions and motives, the general expression of opinion was, that many of the methods employed by it were unhealthful and likely to lead to immorality. The committee was reconstituted, and instructed to consider whether the Church should take any steps having particular reference to the unsatisfactory spiritual state of large masses of the population, especially in the towns.

The subject of the "Affirmation Bill," which was pending in Parliament, was brought before the lower house upon a recommendation of a committee that the members of the upper house be requested to oppose the bill. A motion was offered in amendment that their lordships be requested to watch the progress of the bill through the Houses of Parliament, in order to prevent its being enacted with retrospective powers. Some of the members of the house expressed a preference of affirmations to oaths, on grounds of principle. Canon Gregory contended that the real question was, whether the house was anxious to support the introduction into Parliament of Mr. Bradlaugh, or whether they were anxious to prevent people of that description from polluting the legislature of the country. Prebendary Stephens considered that oath-taking was most injurious, in that it had a pernicious tendency to cause a belief in two kinds of truth—oath-truth and ordinary truth. The proposal of the committee was agreed to.

The convocation met again on July 3d. The following address to the upper house was adopted in the lower house:

The lower house of Convocation of the Province of Canterbury, in humble thankfulness to Almighty God for the rejection by the House of Lords on Thursday, June 28, 1883, of the bill for legalizing marriage with a deceased wife's sister, make this their dutiful representation and prayer to the upper house.

They represent that there is reason to apprehend an immediate renewal of the agitation upon this question.

That, inasmuch as holy matrimony is the foundation of human society; and inasmuch as there is a wide-spread ignorance of the principles of Christian marriage, the lower house, as in love and duty bound, turns to the Archbishop and Bishops in Convocation assembled; earnestly praying them to exhort all who have cure of souls in the province of Canterbury to set forth plainly, from time to time, in their addresses to their flocks the aforesaid principles; as embodied in the Table of Prohibited Degrees, in the 99th Canon, and in the form of Solemnization of Matrimony; and, in particular, to remind their people that the union of a man with his wife's sister has been forbidden by the Church of Christ from the beginning, as being contrary to the Word of God.

The lower house venture further to call special attention to the injury which would be done to the moral and spiritual welfare of the English people; also to the disruption of domestic and social relations necessarily involved in the success of the agitation above referred to; and, lastly, to the grave consequences which must ensue if the law of the Church and the law of the state be brought into open opposition.

The subject was referred in the upper house to a committee, whose report, which was adopted, besides minutely setting forth the considerations on which the action was based, embodied a resolution to the effect that "this house concurs with the lower house in their earnest desire for the maintenance in its integrity of the Table of Prohibited Degrees, set forth in the year of our Lord 1563, in order to be publicly set up in churches by the 99th canon." A resolution was adopted that the Church, "though always insisting on the use of wine in the holy communion, has never prescribed the strength or the weakness of the wine to be used, and consequently it is always possible to deal with even extreme cases without departure from the custom observed by the Church, and it is most convenient that the clergy should conform to ancient and unbroken usage, and to discountenance all attempts to deviate from it."

Enthronement of the Archbishop of Canterbury.—The Rev. Edward White Benson, D. D., Bishop of Truro, having been nominated by the Queen, was formally elected Archbishop of Canterbury at a special session of the Dean and Chapter of the See, Jan. 28th. The election was confirmed by the Bishop of London and a commission of bishops of the Southern Province, March 3d. The new archbishop was enthroned with imposing ceremonies at the Cathedral of Canterbury, March 29th. The proceedings were participated in or witnessed by a large assemblage of clergy and laity, and home, colonial, and foreign bishops, among whom the Duke of Edinburgh represented the royal family, and Bishop Littlejohn, of Long Island, the Protestant Episcopal Church in the United States.

The Ritualistic Controversy.—The late Archbishop Tait, of Canterbury, a short time before his death, in December, 1882, had devised and partly carried into effect a plan for indirectly removing from the courts the suit against the Rev. A. H. Mackonochie, of St. Alban's, who was still under prosecution for contumacy, hoping that one of the results of his action might be to help allay the ritualistic agitation. He induced Mr. Mackonochie to resign his benefice in the interest of the peace of the Church, while the Bishop of London offered him another benefice, that of St. Peter's, London Docks, at the same time transferring the incumbent of that benefice to Mr. Mackonochie's former parish of St. Alban's. The Church Association refused to acquiesce in this proceeding. It published a statement showing that illegal acts were still practiced at St. Alban's and St. Peter's, and addressed resolutions of protest against the fulfillment by the Bishop of London of the compromise which had been arranged. The Bishop of London replied to these resolutions:

If, by refusing to accept Mr. Mackonochie's resignation, I had defeated the late archbishop's dying desire and effort to promote the peace of the Church, I could never have forgiven myself; nor could I have expected the forgiveness of the great bulk either of the clergy or of the laity of England, whether within the Church or without it. I am not aware that the bishop has the power to require from a duly qualified clergyman, the sufficiency of whose learning he has no reason to doubt, any conditions of admission to a benefice, when presented by the rightful patron, other than the production of testimonials signed by three beneficed clergymen and the oaths and declarations prescribed by law.

If there are those who, knowing as I do the good and self-denying work done among the poor and ignorant by such men as Mr. Mackonochie and the late Mr. Lowder, are yet, on account of differences in discipline and doctrine (the seriousness of which I do not wish to extenuate), unable to appreciate or afraid to acknowledge it, I can not sympathize with them—I can only pity them.

A memorial was addressed to the bishop by the Canons of Durham, Peterborough, Carlisle, and Ripon, and others, in which exception was taken to the institution of Mr. Mackonochie, because by reason of it the recent legal decisions against ritual (ritual openly acknowledged to be preparatory to the restoration of the sacrifice of the mass) had apparently been rendered nugatory; because by it disloyalty to the formularies, articles, and homilies of the Church of England had received tacit encouragement from her highest officers; because his lordship's action in the matter would appear to the public to be inconsistent with law and order; and because the illegalities of ceremony which had been practiced at St. Alban's would seem to them to have received episcopal sanction and approval. Hence a most injurious effect would be produced upon the Church and nation, and a strong weapon placed in the hands of the enemies of the Church of England, for the furtherance of their designs to procure its disestablishment.

Mr. Mackonochie was formally installed in the benefice of St. Peter's, London Docks, on Jan. 21st, when he read himself into the vicarship and subscribed to the Thirty-nine Articles of the Church of England.

The suit against Mr. Mackonochie, which had been before the law courts in various phases for nearly fifteen years, was continued, notwithstanding the exchange of benefices which it was hoped would lead to a cessation of proceedings. The final judgment in the case, by Lord Penzance, was given July 21st. The question before his lordship was now whether Mr. Mackonochie should be deprived of all ecclesiastical promotions in the province of Canterbury. The defendant had been admonished by the Court of Arches repeatedly for his illegal ritualistic practices at St. Alban's, Holborn, and had treated the orders of the court with contempt. He had therefore been ordered to be committed. In the mean time an exchange of livings had been effected between Mr. Mackonochie and the Rev. Mr. Suckling, incumbent of St. Peter's, London Docks. The case was remitted to the Dean of Arches by the Judicial Committee of the Privy Council for a "definitive sentence" to be passed, it having been decided that a sentence of suspension would be inadequate, because it had once before been pronounced, and Mr. Mackonochie had discharged it, and that a sentence of deprivation was the only one applicable. In the present case, however, the issue was more complicated than usual, the ordinary form of sentence being inapplicable in consequence of the defendant having ceased to hold the living of St. Alban's, Holborn, in which the offense had been committed. The court had to consider whether a decree of deprivation had become impracticable by the course the defendant had adopted of resigning the benefice with respect to which the suit had been instituted. After a careful examination of authorities, Lord Penzance came to the conclusion that it had not. A deprivation of the defendant was then decreed from all his ecclesiastical promotions in the province of Canterbury, among which is included the living of St. Peter's, London Docks. An appeal may still lie to the Privy Council.

The parish of St. John's, Miles Platting, having become vacant by the deprivation of the Rev. S. F. Green for contumacy in ritualism, the patron of the benefice presented the Rev. Mr. Cowgill, Mr. Green's former vicar, for the incumbency. The Bishop of Manchester refused to institute Mr. Cowgill unless he would obligate himself to conform to the cathedral standard of services, and this Mr. Cowgill, in turn, refused to do. The patron notified the bishop that if he persisted in his refusal to institute Mr. Cowgill, he (the patron) would be driven to one of two alternatives: either to seek in a court of law to protect his right of patronage, which he had exercised to the best of his judgment, or to ask Mr. Green to receive back his resignation, the bishop having refused to accept it, and to take his old place at the rectory. The bishop replied that he saw nothing in the patron's letter to modify or change the resolution he had come to not to institute Mr. Cowgill, and added: "I deeply regret that it should be so; but there is a peace which may be too dearly purchased, and in my opinion it would be so in this instance if it were purchased by the surrender of all law and authority in the administration of the discipline of the Church of England." Addresses expressing sympathy with him, and satisfaction at his course, were sent to the bishop from different sources, to one of which he replied:

With you, in the course which I have felt it my duty to pursue, I "desire no party triumph." But the principle of obedience to law, when authoritatively declared, seems to me to need to be vindicated; and again I agree with you in thinking that to institute to a benefice a clergyman who would continue the same illegal ceremonial acts for which the former incumbent had been deprived, would be a stultification of the law which the common sense of the country would not tolerate. If I am wrong in my conception of my duty, the law, which is appealed to, will set me right,

and to its decision, when duly pronounced, I am prepared to bow. Meanwhile, I am anxious, as far as may be, without raising partisan passion or animosity, calmly to await that decision.

To another address he replied:

My course of action has not been dictated by any desire to strain the principles of episcopal authority, but simply to secure obedience to the law, as the only guarantee of the stability of our beloved church, and, indeed, of the rights and liberties of churchmen.

In May, the Archbishop of York issued a monition to the Rev. G. C. Ommanney, Vicar of St. Matthew's, Sheffield, directing him to discontinue eight specified ritualistic practices. The archbishop's requirements were as follow:

1. To use pure wine, and not wine mixed with water, in the holy communion. 2. To use ordinary wheaten bread in all celebrations of the holy communion, and not bread pressed so as to resemble wafer bread. 3. So to proceed in the acts of the holy communion that the congregation may see his acts. 4. To refrain from prostrating or bowing low over the elements at the time of celebration. 5. To refrain from making the sign of the cross over the elements at the time of celebration. 6. To discontinue the ceremonial of elevation of the paten and the cup. 7. To permit no person not licensed by the archbishop to officiate in any manner at the holy communion, whether such person be called server or by any other title; and 8. That the washing and cleaning of the vessels used in the holy communion shall not take place in the service, but in some place apart.

The observance of these rules was demanded in virtue of the vicar's promise of canonical obedience. Mr. Ommanney, in a published letter, declared that he did not intend to abandon the eastward position, the mixing of water and wine at the communion, and the washing of the chalice; but that, in order to promote peace in his parish, he was willing to give up making the sign of the cross and other practices that did not interfere with his conscientious convictions.

The Archbishop of York, in a letter to the church-wardens of the parish on the subject of the monition, pointed out that no person had a right to interfere and put a stop by force to ceremonies in churches.

Reorganization of Ecclesiastical Courts.—A royal commission was appointed in May, 1881, to inquire into the constitution and working of the ecclesiastical courts under existing statutes. The principal object of its work was to frame a plan for such a reconstitution of the courts having cognizance of ecclesiastical matters as would remove the objections entertained by a large party in the Church to having questions of doctrine and ritual decided by lay judges. An analysis of the report of the commission was published in August. The essential features of the scheme proposed in it are the establishment of an exclusively ecclesiastical jurisdiction in the courts of first instance and the postponement of the intervention of lay authority to the court of final resort. Under its provisions, the Diocesan Court and the Provincial Court, which were practically destroyed by the Public Worship Regulation Act, will be restored to their original vitality. While by the Public Worship Regulation Act the co-operation in prosecution of three aggrieved parishioners was required as initiatory to the beginning of proceedings against a clergyman charged with offending in doctrine or ritual, the act proposed by the commission makes the right to begin an action open to any one, and unrestricted. It is then left discretionary with the bishop whether he shall allow the complaint to be prosecuted or shall stop it at once. If it is allowed to proceed, the bishop may, with the consent of the parties, deliver a final judgment; if this consent is not given, the case is carried before the Diocesan Court. This court will consist of the bishop, with the chancellor of the diocese, or some other person learned in the law, as legal assessor, and a theological assessor to be chosen for the occasion by the bishop, with the advice of the dean and chapter. From this court an appeal may be taken to the Provincial Court, where it may be heard, at the discretion of the archbishop, by the official principal of the province, or by the archbishop himself, with the official principal as assessor, in which case the archbishop is empowered to appoint any number of theological assessors, not exceeding five, to sit with the court. The theological assessor must be either a bishop within the province, or a professor, past or present, of one of the English universities. From the Provincial Court an appeal will lie to the Crown, which is to exercise its prerogative through an entirely new court, composed of "a permanent body of lay judges, learned in the law," of whom not less than five shall be summoned for each case, by the lord chancellor, in rotation. In doctrinal cases, this court may, only on demand of one or more of its members, consult experts, namely, the archbishop or bishops of the province, or of both provinces. The court shall not be bound to give the reasons for its decisions; but, if it does state its reasons, each judge shall deliver his own judgment separately; and only the bare words of the decree shall be legally binding. On this feature of the proposition, the report furnishes the explanation: "Considering how widely different a matter the legal interpretation of documents must often be from the definition of doctrine, we hold it to be essential that only the actual decree, as dealing with the particular case, should be of binding authority in the judgments hitherto or hereafter to be delivered, and that the reasoning in support of those judgments and the *obiter dicta* should always be allowed to be reconsidered and disputed." Should a clergyman refuse to obey the sentence of a church court, he is to be punished, not by imprisonment, but by a temporary suspension. A second disobedience shall be followed by another suspension, and disobedience for the third time by suspension until the court is satisfied. Disobedience to a sentence of suspension may be visited, after three months' notice, with deprivation; and any cler-

gyman who, during suspension or deprivation, attempts to conduct divine service in a church forbidden to him, may be charged with disturbance of public worship. The practical effect of the act, if it is adopted by Parliament, will be to repeal the Public Worship Regulation Act, and restore the old courts to their pristine vigor. By its provisions, the Dean of Arches is to be elected, and to be required to qualify in the ancient way. All spiritual sentences are to be pronounced by the bishop in person in the Diocesan Court, and by the archbishop in the Provincial Court. And the two primates are to be empowered, if they think fit, to appoint the same person as official principal for both provinces.

Some of the features of the scheme of the commission have been criticised in the discussions to which it has been subjected. Eight of the 23 members of the commission itself expressed objections to the power of vetoing the continuance of proceedings given by it to the bishop. Among these are the Lord Chief-Justice and the Archbishop of York. The archbishop remarked, in expressing his dissent, that under the operation of this rule the courts might be entirely closed to laymen. The Lord Chief-Justice, while he admitted that the power of prosecution might be liable to abuse, if no trammels were put upon it, thought it better to run the risk of abuse than to override the rights of the laity, and expressed himself perfectly confident that "competent judges, with absolute power of costs, would very soon restrain, and indeed altogether put an end to merely frivolous litigation." Similar objections were made by the Church Association, which devoted the entire session of its autumnal conference in October to the discussion of the report. Besides this point, a number of speakers at the Church Congress, and the chairman of the Church Association, offered objections to the feature of the constitution of the final court of laymen. The Executive Committee of the Liberation Society has published a statement of objections to the proposed measure. It deprecates the investment with judicial authority of bishops and judges appointed by the archbishops, so long as the Church continues to be a national establishment, and protests against the recommendation that the members of the courts shall declare themselves to be "members of the Church of England as by law established," as involving a civil disqualification on ecclesiastical grounds, as placing members of the Church of England on a different footing from Nonconformists in regard to the administration of justice, and as being inconsistent with the position of that Church as a national institution.

The Liberation Society.—The triennial conference of the Liberation Society was held May 1st. Mr. H. P. Richard, M. P., presided. The report represented that the friends of religious equality, who had waited during the abnormal pressure on Parliament, now claimed that the question of disestablishment should be dealt with by the Legislature. The educational work of the society during the past three years had been carried on on a large scale. As many as 3,074,000 publications had been issued, and 1,247 meetings had been held. During the course of the meetings Mr. John Bright made a speech censuring the Established Church for inefficiency. He discussed the questions, Is the state the better for its union with the Church? or is the Church the better for its union with the state? The theory of many supporters of the union was that the Church tends to make the state more Christian—that is, more just and gentle, more merciful and peaceful. That theory the speaker declared to be "unsound and baseless." The bishops of the Established Church in the House of Lords had never exercised their influence in behalf of Christian and generous legislation. In respect to the criminal code, when it was most barbarous, the bishops and the clergy never raised a voice against the cruelty of the laws. The Church had provided no check, and uttered no denunciation of the country's incessant wars. "I complain, then," he added, "of the Established Church in this broad manner, that it does nothing to guide the state in the way of righteousness; that it is, in certain respects, the bond-slave of the state; that, in all the great matters which must affect our country, the bishops and the clergy are dumb, and their activity is shown only when any comparatively small measure is discussed which they think treads a little upon their position and their supremacy." He predicted a better future for the Church as a church, and as an object of popular affection, after it shall have been disestablished.

The Church Congress.—The Church Congress met at Reading, Oct. 2d. The Bishop of Oxford, being the bishop of the diocese in which the congress was held, presided, and delivered the opening address. He spoke of the subjects which would engross the attention of the meeting as being such as men of academic culture, serious thinkers, and ardent seekers after knowledge might properly discuss. The statement of them implied no foregone conclusion, and assumed no contradiction to exist between the great generalizations of science and the Christian faith. Believers in the one source of truth and life, the members of the congress could not conceive of any physical discovery which should destroy that faith; but they did not, therefore, separate themselves from the votaries of science, or ask them to be untrue to themselves; but rather believed that the seeming contradictions would disappear. The president also spoke of the subjects relating to social morality that were upon the programme of the congress, particularly on the one concerning the proposition to repeal the prohibition of marriage with a deceased wife's sister. He knew, he said, the bishops were threatened with expulsion from the House of Lords because they refused

to support a measure of which its friends could not give an intelligible account. He was not tenacious of temporal honors, and he hoped they would not forfeit their place by cowardice, political corruption, slavish adherence to a party, or subserviency to a court. He, however, "should feel no sense of shame if the bishops gave the vote which was fatal to themselves in defense of the purity of English homes, and the teaching of the word of God." Papers on "Recent Advances in Natural Science in Relation to the Christian Faith" were read by Prof. Flower, the Bishop of Carlisle, and the Rev. Aubrey Moore. The general expression of the discussion was to the effect that the newly developed theory of evolution, irrespective of its scientific value, which was regarded favorably, had nothing in it contrary either to the idea of an intelligent Creator or to the Bible. The Bishop of Carlisle affirmed that recent advances in natural science do not lead logically, and therefore ought not to lead at all, to either unbelief or atheism. The Rev. Aubrey Moore asked whether it is too much to believe that the time will come when we shall see in evolution, modified perhaps by wider knowledge—conditioned certainly by truths drawn from another sphere—a fuller revelation in nature than now seems possible for man of the wonderful works of God? On the subject, "Recent Advances in Biblical Criticism in their Relation to the Christian Faith," papers were read by the Rev. T. K. Cheyne on "Old Testament Criticism," by Prof. Sanday on "New Testament Criticism," and by Colonel Sir C. W. Wilson and Canon Rawlinson on "Historical Discovery."

Special interest was taken in the discussions on "the Marriage Laws," in view of the pending applications for relaxing the restrictions upon marriages of affinity. The speakers all opposed the relaxation sought.

The subject of "Ecclesiastical Courts" was discussed during two sessions, with especial reference to the report of the commission on the reorganization of those courts. Among the speakers were Dr. Hayman, Canon Trevor, Mr. Sydney Gedge, Lord Edward Churchill, the Rev. Dr. Porter, Prof. Burrows, of Oxford, the Bishop of Winchester, Mr. W. G. F. Phillimore, the Rev. Dr. Hay, of the Protestant Episcopal Church in the United States, and Mr. Beresford-Hope, M. P. Two points elicited differences of opinion. They were the proposed constitution of the Court of Final Appeal of Laymen, and the provision in the plan projected by the commission for allowing the bishop a veto on the initiation of proceedings in the courts. Other subjects discussed in the congress were the prevention of pauperism, "personal religion," education in the universities and in the public schools, and "the relations of the Church at home to the Church in the colonies and in missionary dioceses."

Woman's Work.—A session was given to the subject of woman's work in connection with the Church. A suggestion by one of the speakers that women engaging in organizations for dealing with sorrow and misery should take vows of celibacy, was met by a proposition by the Bishop of Lincoln that the ceremony should be postponed till the women are sixty years old. The subject of the promotion of personal purity, and the prevention of the degradation of women and children, was considered in a private session.

Episcopal Synod of Canada.—The Anglican Church of British North America is divided into two provincial synods, one of which is composed of the Dioceses of Canada and the Maritime Provinces, with the Bishop of Fredericton as metropolitan; and the other, constituted in 1873, includes the Dioceses of the Northwest Territories, with the Bishop of Rupert's Land as metropolitan.

The Provincial Synod of Canada met in triennial session in Montreal, September 12th. The Dioceses of Nova Scotia, Quebec, Toronto, Fredericton, Ontario, Montreal, Huron, and Niagara, were represented by their bishops and by delegates. The Rev. Charles Hamilton, of Quebec, was elected prolocutor of the synod. The Central Board of Domestic Missions presented its first triennial report. It showed that the eight dioceses had during the past three years contributed $84,896 to the work of domestic missions, and $23,878 to the mission fund. The principal objects of missionary work were in Algoma and the Northwest. The Central Board of Foreign Missions reported that its receipts for the past three years had been $6,748. The report of the board closed with a recommendation that it be amalgamated with the Board of Domestic Missions; and a proposition was introduced for the organization of a Domestic and Foreign Missionary Society of the Church of England in Canada. A memorial from the Diocese of Niagara requested the enactment of a canon for the promotion of greater uniformity in the rubric worship of the Church. The committee to which the subject was referred reported that it was at present impossible to frame in the dogmatic form of a canon what should be considered legal or illegal in the private ministrations of ritual, but that clergymen should be advised to submit to the ruling of their bishops in all matters connected with worship as to the legality of which doubts are entertained, or controversy shall have arisen. The Diocese of Montreal sent in a memorial, setting forth its claims to be the metropolitan see, averring that it had never ceased to protest against the action of the Provincial Synod in appointing another than the Bishop of Montreal as metropolitan, as illegal, and asking for a reconsideration of the question. No change was made in the present rule, which vests the selection of the metropolitan in the House of Bishops. A committee appointed to consider the subject of the employment of women in the work of the Church reported,

recommending the recognition of deaconesses and sisterhoods. Objection being made to the feature of sisterhoods, the synod, "adopting the principle of the desirability of making arrangements for the better employment of Christian women in the work of the Church," but without binding itself to the provisions of the report, referred it back to the committee to prepare a canon on the subject to be presented at the next session. Satisfaction was expressed at the success of the recent Church Congress, with the declaration that the organization and conduct of such bodies ought to be free from any synodical action.

The first Church Congress of the Episcopal Church in Canada was held at Hamilton in June. The Bishop of Niagara presided, and the meeting was attended by a number of clergymen from the United States. Among the subjects considered were those of clerical education, the attitude clergymen should occupy toward popular literature and recreation, "Lay Co-operation," "the Revised Version of the New Testament," "Modern Doubts and Difficulties," "Woman's Work in the Church," and "Church Music."

Anglican Churches in South Africa and Australia.—The question whether the Diocese of Natal, South Africa, shall be continued has been raised by the death of Bishop John William Colenso. Bishop Colenso was, in 1863, declared by the Bishop of Cape Town to be deposed from his office for certain heretical doctrines which he was found to have published. The validity of the act of deposition was not established, and the Colonial Assembly of Natal, in 1872, passed an act vesting in Bishop Colenso the property belonging to the See of Natal. In the meantime, the Diocese of Maritzburg had been founded in 1869, with jurisdiction extending over the colony of Natal, and conflicting with the jurisdiction claimed for the Bishop of Natal. If the bishopric of Natal were allowed to lapse, the conflict of jurisdictions would be quietly terminated. The authority of the Bishop of Maritzburg is recognized by the other South African dioceses, while that of the Bishop of Natal is acknowledged only by those immediately connected with the diocese. The Diocese of Natal includes seven clergymen, all but two of whom were ordained by Bishop Colenso after he was excommunicated, with fifteen churches, three of which are closed and two are connected with native work, while two are in the hands of the Diocese of Maritzburg. The latter diocese has thirty-four clergymen, seven of whom are missionaries to the heathen, while three others have native work, superintended by themselves, going on in their parishes; and thirty-two churches, seven of which are devoted to native work.

The bishopric of Sydney, which includes the metropolitanate and the Episcopal primacy of Australia, having become vacant, the Archbishops of Canterbury and York and the Bishops of Durham, Rochester, and Liverpool have, on request, recommended the Rev. Canon Alfred Barry, D. D., Principal of King's College, London, as a suitable candidate for the office.

Anglican Church in Norway.—The foundation-stone of an English Episcopal church has been laid in Christiania, Norway. The ceremonies were superintended by Sir Horace Rumbold, the British minister resident at the court of Norway and Sweden, and were witnessed by the Norwegian Minister of State and other members of the royal government, and the ecclesiastical, military, and civil authorities.

ANTISEPTICS. See SURGERY.

ARGENTINE REPUBLIC. Area.—Since the settlement of the boundary question with Chili, in October, 1881, the Argentine territory embraces an area of 1,168,682 square miles. Before that settlement, the republic was credited with but 841,000* square miles (including the undisputed portion of the Gran Chaco), Patagonia having then been treated as a separate region.

Population.—In no other country in the western hemisphere, save the United States, has the population grown so rapidly as in the Argentine Republic. From 620,730 in 1836, it had reached 1,526,738 (an increase of 146 per cent.) in 1869; and in an official publication issued in September, 1882, it was estimated at 2,942,000, as follows:

PROVINCES, ETC.	Population.	Capitals.
LITTORAL OR RIVERINE PROVINCES.		
Buenos Ayres	907,000	BuenosAyres.†
Corrientes	204,000	Corrientes.
Entre-Rios	188,000	Concepcion del Uruguay.
Santa Fé	187,000	Santa Fé.
ANDINE PROVINCES.		
Catamarca	102,000	Catamarca.
La Rioja	87,000	La Rioja.
Mendoza	99,000	Mendoza.
San Juan	91,000	San Juan.
CENTRAL PROVINCES.		
Córdoba	320,000	Córdoba.
San Luis	76,000	San Luis.
Santiago del Estero	158,000	Santiago del Estero.
Tucuman	178,000	Tucuman.
NORTHERN PROVINCES.		
Jujuy	66,000	Jujuy.
Salta	167,000	Salta.
TERRITORIES	112,000	
Total	2,942,000	

Of the total number of inhabitants, as given in that table, the classification by nationalities was as follows: 2,578,255 Argentine citizens; 123,641 Italians; 55,432 French; 59,022 Spaniards; 8,616 Germans; 17,950 English; and 99,084 of various other nationalities.

* Details concerning territorial divisions, population, etc., may be found in the "Annual Cyclopædia" for 1872, 1877, and 1878.

† The new capital of this province, La Plata, was founded Nov. 19, 1882, on the banks of the river of the same name, and thirty miles southeast of Buenos Ayres, the latter city having been constituted the Federal capital by the law of Sept. 21, 1880.

The estimated population of the city of Buenos Ayres was, in September, 1882, 295,000; and those of other important cities as follows: Córdoba, 39,651; Rosario, 32,204; Tucuman, 24,237.

Immigration.—By the terms of the "homestead law," enacted Oct. 6, 1876, inducements were offered with a view to attract Europeans to the shores of the republic.*

In pursuance of a new decree of May 16, 1883, passage-money was advanced to 135 immigrants in that year. A new and prosperous colony in the fertile region surrounding Bahía Blanca, in southern Buenos Ayres, bids fair to make of that seaport at no distant day "one of the great centers of Argentine commerce." The already rapid growth of the settlement will be materially enhanced on the completion of the railway between Buenos Ayres city and Bahía Blanca, the northern half of which line is now in operation to Olavarria. Of the older colonies may be mentioned those of Santa Fé, sixty-eight in all, with an aggregate population of 55,143 (in 1883); and Entre-Rios, numbering seventeen, with 9,905 inhabitants. The Santa Fé colonists, besides other products, harvested upward of 1,000,000 bushels of wheat in 1882.

The following table exhibits the nationality and number of the immigrants who landed at Buenos Ayres in 1879, 1880, 1881, and 1882:

NATIONALITIES.	1879.	1880.	1881.	1882.
Italians	22,774	18,416	20,506	29,537
Spaniards	3,422	3,112	3,474	3,520
French	2,149	2,175	3,612	3,832
English	783	583	1,149	826
Swiss	717	581	635	943
Germans	490	445	591	1,128
Austrians	1,760	879	495	672
Portuguese	28	34	78	103
Belgians	78	57	140	183
Danes	47	54	11	11
Dutch	7	..	10	5
Russians	15	8	34	26
Greeks and Turks	17	11	28	14
Americans	51	21	72	226
Various	364	292	648	410
Total	32,702	26,643	31,468	41,041

The number of arrivals for 1883 was 63,325.

Government, Public Officers, etc.—The President of the Republic is Lieut.-Gen. Don Julio A. Roca (inaugurated Oct. 12, 1880), and the Vice-President, Don Francisco Madero.

The Cabinet was composed of the following Ministers: Interior, Don Bernardo de Irigoyen; Foreign Affairs, Don Francisco Ortiz; Finance, Don Victorino de la Plaza; Justice, Public Worship, and Public Instruction, Dr. Eduardo Wilde; War and the Navy, Gen. Don Benjamin Victorica.

The governors of the several provinces, etc., were:

Buenos Ayres	Dr. D. Rocha.
Catamarca	Don J. Acuña.
Córdoba	Don G. Gavier.
Corrientes	Don A. Soto.
Entre-Rios	Col. J. Antelo.
Jujuy	Don E. Tello.
La Rioja	Don B. Jaramillo.
Mendoza	Don J. M. Segura.
Salta	Don M. S. Ortiz.
San Juan	Don A. Gil.
San Luis	Don Z. Concha.
Santa Fé	Don M. Zavalia.
Santiago del Estero	Don L. G. Pinto.
Tucuman	Don B. Paz.
Gran Chaco Territory	Col. F. Bosch.
Patagonia	Col. L. Winter.
Misiones	Col. R. Roca.

The Argentine Envoy Extraordinary and Minister Plenipotentiary to the United States is Dr. Don Luis L. Dominguez (accredited in 1882); and the Argentine Consul-General (at New York) for the American Union, is Don Cárlos Carranza.

The United States Minister Resident in the Argentine Republic is Gen. Thomas O. Osborn; and the United States Consul at Buenos Ayres is Mr. E. L. Baker.

Army.—The Argentine army in June, 1883, comprised, exclusive of the National Guard, 6,787 men, as follows: 3,500 foot, 2,474 horse, and 815 artillery. There were 4 lieutenant-generals, 14 generals of division, 50 colonels, 127 lieutenant-colonels, 142 majors, and 742 officers of other grades. The National Guard was 315,850 strong. The military academy had, in 1882, 14 teachers and 123 students; and the military school (for non-commissioned officers) 6 teachers and 68 pupils.

Navy.—The navy, in June, 1883, was composed of 39 vessels, namely: 3 steam-ironclads, 6 gunboats, 7 torpedoes, 2 steam-transports, 3 cruisers, 6 other steam-vessels, and 12 sail-of-the-line, with an aggregate tonnage of 12,630, and an armament of 55 guns, and manned with 1 rear-admiral, 2 chiefs of squadron, 3 colonels, 9 lieutenant-colonels, 9 majors, 20 captains, 32 lieutenants, 45 second-lieutenants, 63 students, 23 midshipmen, 20 paymasters, 48 engineers, 23 physicians, 2 almoners, 20 pilots, 1,505 seamen, 1,737 marines (including officers), and a torpedo division 137 strong. In the foregoing enumeration is not included the flotilla of the Rio Negro, comprising 3 steamers and 3 steam-launches.

The naval school had, in 1882, 17 teachers and 69 students; and another school, for seamen, had 9 teachers and 43 pupils.

The navy, like the army, is recruited by voluntary enlistment for a fixed period.

Education.—The cause of popular education continues to be zealously fostered by the Argentine Government, than which none has displayed more untiring energy in its efforts to insure the benefits of rudimentary instruction to the youth of all classes of society. In the budget for 1883 the cost of this department to the state was estimated at $2,190,430.88.

There were in the republic, in 1882, 2,023 educational establishments of all grades, with an aggregate of 4,097 teachers, and a total of 136,928 pupils. Primary instruction was given, in 1881, at 1,985 schools, national, provincial, municipal, and private, by 3,544 teachers to 128,919 children. But as, from a bare statement

* An abstract of this "homestead law," or "colonization bill," was given in our volume for 1877, p. 29.

of the number of primary schools, no precise idea of the status of rudimentary education can be derived, the following comparative statistics are transcribed from the report of the Minister of Public Instruction for 1882: Assuming the population of the republic to be 2,500,000, and the proportion of the children between the ages of six and fifteen to be 20 per cent., we should have:

Children fit to attend school		500,000
Actual number attending public primary schools	99,963	
Estimated number attending private primary schools	100,000	
Estimated number home-taught	10,000	
Total number possessing or acquiring primary education	209,963	
Total number illiterate	290,037	
Total		500,000

Yet these figures attest a notable improvement when compared with those for 1872, in which year but 81,183 children, out of a total of 468,987, attended school.

Finance.— Contrary to the almost general rule in Spanish America—witness Mexico, Costa Rica, Honduras, and principally Peru—the Argentine Republic, while rapidly extending her already considerable railway and telegraph systems, and otherwise facilitating transportation to and from the seaboard, not only accomplishes this without sacrifice to the national credit, but seldom fails to render such material improvements subservient to the financial prosperity of the country. Thanks to this system, and to punctuality in the service of the national debt and in the payment of interest thereon, Argentine bonds, first quoted at a premium in December, 1881, have rarely descended below par since that year.

The budget estimates for 1883 were: revenue, $29,576,000; expenditure, $31,224,749, whereby there would be a deficit of $1,648,749.

The subjoined tables, which are transcribed from official returns published this year, exhibit the branches of the national revenue and expenditure, and the amounts of each, as estimated in the budget for 1884:

REVENUE.

Import duties	$20,600,000	
Additional duties	670,333	
		$21,270,333
Export duties	$3,080,000	
Additional duties	518,000	
		3,598,000
Warehouse fees		500,000
Stamped paper		1,500,000
Licenses		650,000
Direct taxes		1,170,000
Post-Office		560,000
Telegraphs		200,000
Lighthouses, etc.		60,000
Sanitary Department		20,000
Forests		10,000
Water-works		270,000
Railways		2,567,000
National Bank shares		600,000
Wharfage		100,000
Penitentiary		10,000
Mint		300,000
Sundries		410,000
Total		$33,770,333

EXPENDITURE.

Ministry of the Interior		$6,950,714 03
" Foreign Affairs		371,700 00
" Finance		13,733,936 27
" Justice, Public Worship, and Public Instruction		4,291,671 40
" War and the Navy:		
War-Office	$6,150,924 72	
Navy Department	2,549,537 88	
		8,700,462 60
Total		$34,058,484 35
Estimated deficit for 1884		$288,151

The actual showing of the Finance Department for 1882 was unusually favorable; for, as Gen. Roca observes in his message to Congress in May, of a revenue of $26,763,985.27, but $25,354,996.76 were required for the ordinary expenditure of the administration. "The surplus, $1,408,988.51, together with $3,712,962.54, the proceeds of the treasury notes issued under the law of Nov. 3, 1881, the $2,312,704.16 balance in the treasury at the end of that year, and other funds resulting from successful credit operations, was applied to reduce the balance overdue on our debt, thus placing the treasury in a position to discharge within a few days all our old accounts." The consolidated national debt, according to the President's statement, amounted on Dec. 31, 1881, to $82,048,004.50, and to $94,565,787.90 at the end of 1882, in which latter year the principal of the debt was reduced by $3,625,257.13, and increased by new emissions to the amount of $14,283,788.50. Gen. Roca affirms that the reduction just alluded to was a real diminution of the country's indebtedness, while the fourteen million increase represented only the transformation of existing debts or the defrayal of productive outlays on works the yield of which would be more than sufficient for the amortization of the bonds emitted. "At the end of the present year" (1883), adds the President, "the 6 per cent. consolidated debt, with a small portion at 8 and 9 per cent., will have been reduced to $75,418,201.31. The amount paid annually on the national debt (principal and interest) is $8,979,061.51. Should the conversion * which I proposed to Congress last year be sanctioned, we should only require to dispose of 5 per cent. bonds to the amount of $88,727,295.66, at the price of 85 per cent. (the rate taken as a basis by the committee on ways and means), for the extinction of those debts. And if the emission were made without a sinking fund for a term of twenty or twenty-five years, the annual service would only call for $4,436,364.78. The advantages accruing from either of these plans are apparent, and would enable us to carry on numberless works of public utility without burdening future generations with such debts as have been handed down to us and were contracted to defray the expenses of wars abroad and internecine strife." The President referred to the urgent need of a national bank law similar to that existing in the United States. Up to March 31, 1883, there were delivered

* See the "Annual Cyclopædia" for 1881, p. 25.

from the mint 5,755,257 coins (gold, silver, and copper), representing an aggregate of $4,-154,519.16, and most of which was to replace the fractional paper currency, the withdrawal of which from circulation was decreed on Nov. 5, 1881.

The following tables exhibit the sources, destinations, and values respectively of the Argentine imports and exports for the year 1882:

FROM	IMPORTS.	Values.
Belgium		$2,775,735
Bolivia		128,688
Brazil		2,084,293
Chili		15,185
France		11,798,701
Germany		4,610,925
Great Britain		18,924,128
Holland		973,011
Italy		2,825,301
Paraguay		1,104,347
Portugal		35,555
Spain		2,812,409
United States		4,980,417
Uruguay		2,799,592
West Indies		120,367
Other countries		3,389,712
Total (for 1882)		$59,270,366
Against (for 1881)		54,029,649
Increase in 1882		$5,240,717

TO	EXPORTS.	Values.
Belgium		$13,901,460
Bolivia		318,605
Brazil		2,092,219
Chili		1,463,078
France		15,869,992
Germany		4,643,995
Great Britain		7,379,532
Holland		65,660
Italy		1,620,981
Paraguay		70,841
Portugal		28,780
South Africa		152,768
Spain		1,260,562
United States		2,861,209
Uruguay		1,982,639
West Indies		1,411,861
Other countries		3,312,223
Total (for 1882)		$58,446,905
Against (for 1881)		56,069,104
Increase (in 1882)		$2,371,801

The exports and imports for the first ten months of 1883 were of the respective values of $35,532,486 and $50,176,456, against $34,-325,245 and $41,217,972 respectively for the corresponding period of 1882.

The trade *in transitu* for 1882 was as follows:

COUNTRIES.	Inward.	Outward.
Bolivia	$12,353,585	$1,802,180
Brazil	55,655	1,237,059
Chili	105	9,457
Paraguay	53,133	588,660
Uruguay	1,585,690	370,158
Other countries (of Europe)	2,977,749	13,050,403
Totals	$17,057,917	$17,057,917

Bolivia, now landlocked, finds a convenient channel for her foreign commerce through Argentine territory, unburdened by any such tax as Peru used and Chili continues to exact, and with the great additional advantage of ready access to the Atlantic seaboard. In November, 1883, Bolivian explorers announced the navigability of the Pilcomayo river throughout, which circumstance, with the completion of the Northern Central Railway, will establish easy communication between the two countries. The export branch of this trade consists chiefly of bismuth, tin, silver, silver-ore, etc., while the imports are European manufactures.

Thus, the foreign commerce of the republic for 1882 was of the aggregate value of $117,-711,271, constituting an increase of $7,612,518 as compared with 1881. On comparing the value of the imports and exports for each of these two years, it will be seen that the balance of trade for 1882 ($829,461) was against, while that for 1881 ($1,039,455) was in favor of the republic. It has been officially objected, however, that the unfavorable showing for 1882 is rather apparent than real, since of the value of the imports $4,518,638 were for "articles of a productive character, such as railway materials, machinery for industrial purposes, and a large quantity of tools and agricultural implements." Among the more extensive consumers of Argentine products, as shown by the foregoing table of exports, France stands first, Belgium second, Great Britain third, Germany fourth, and the United States fifth. In the table of imports, those same countries range in the following order as shippers to the republic: Great Britain first, France second, the United States third, Germany fourth, and Belgium fifth. The imports from Germany, the United States, and Great Britain are steadily increasing, while those from Belgium and France fluctuate from year to year; and the exports to Germany and France, and particularly to the former, have increased, while those to the other three countries have fluctuated during the seven years 1876–'82.

Of the aggregate trade—imports and exports—of the republic with all countries for the septennial period 1876–'82, the subjoined table exhibits the proportions represented by each of the five countries just referred to:

Chief among the competitors of the United States, as a supplier of the Argentine Republic, is Great Britain.

The American articles shipped most extensively to the republic are: lumber ($2,019,216 in 1882, against $157,090 from Great Britain); agricultural instruments ($528,046, the total from all countries having been $727,807); kerosene ($363,139); books and other printed matter ($98,326); machinery ($126,588); manufact-

COUNTRIES.	1876.	1877.	1878.	1879.	1880.	1881.	1882.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Belgium	19·0	17·4	15·2	18·3	16·2	15·5	14·1
France	20·5	20·4	23·0	22·4	23·4	23·7	23·5
Germany	3·9	3·9	4·0	3·9	4·7	6·6	7·9
Great Britain	19·5	18·0	19·1	17·0	17·1	17·5	22·3
United States	5·2	5·7	6·8	8·2	8·0	7·3	6·6

ured tobacco ($120,339); clocks and watches ($30,347, against $24,006 from France, and $14,-926 from Great Britain). Of American musical instruments of all kinds, but $5,989 worth were sent to the republic in 1882. American machinery is fast gaining favor, no fewer than sixty-two locomotives having been ordered of a single Philadelphia firm in 1882, while the total number imported from the United States in the year previous was but seven; and extensive orders for rolling-stock, particularly drawing-room cars, were also given in 1883. Indeed, there is a growing appreciation of things American in the Argentine Republic.

The imports of specie in 1882 were $2,683,-327, and the exports, $2,225,082; against $4,-157,648 and $2,991,305 respectively in 1881.

Chief among the Argentine export staples is wool; the quantity shipped in 1882 was 111,-009,796 kilogrammes, of the value of $29,033,-000, against 89,259,122 in 1876. Next in importance after wool are hides, of which but 1,945,427, of the value of $8,286,000, were exported in 1882, against 2,325,866 in 1876; then follow sheep-skins (22,353,021, of the value of $4,095,000 in 1882, against 27,597,973 for 1876); jerked beef, 26,996,613 kilogrammes, $3,756,000; tallow, $2,699,000; maize, 107,-327,155 kilogrammes, $2,141,000; live cattle, 94,649, $1,478,000; linseed, 23,351,794 kilogrammes, $1,650,000; bones, ores, etc.

Agriculture, etc.—Until within a few years an importer, the Argentine Republic is now an exporter of wheat in constantly increasing quantities: 1,705,292 kilogrammes in 1882. Sugar-culture is rapidly developing in Tucuman, Salta, Jujuy, Santiago, Corrientes, and in parts of the Gran Chaco and Misiones. The total sugar-crop for 1882 was estimated at 11,615,000 kilogrammes. Tucuman now grows 17,500 acres of cane, giving work to thirty-four mills. The vine is extensively cultivated; Catamarca, in 1881, produced 1,200,000 gallons of wine, valued at $108,000; and, in 1882, San Juan produced 5,286,186 gallons, valued at $1,107,275. But the main sources of the country's wealth are cattle-rearing and sheep-farming. There were in the republic, at the beginning of 1883, 93,000,000 head of sheep, while Australia's flocks numbered but 72,000,000, and those of the United States, 41,000,000; of horned cattle there were 16,000,000 in the republic; and of horses, about 5,000,000. The statistics of these industries, for the single province of Buenos Ayres, were given in the census returns of Oct. 9, 1881, as follow: Sheep, 57,838,078; horned cattle, 4,754,810; horses, 2,396,469; hogs, 155,134; goats, 7,612.

Shipping Movements.—The shipping movements at the various ports of the republic were as below, in 1882:

FOREIGN TRADE.

Entered:				
Steamers,	3,040,	with an aggregate of	1,104,927	tons.
Sailing-vessels,	3,081,	" "	423,127	"
Cleared:				
Steamers,	2,742,	" "	1,060,214	"
Sailing-vessels,	2,023,	" "	367,925	"

The distribution of the foreign carrying-trade by flags was as follows: British, 31 per cent.; French, 16; Argentine, 13; Italian, 9; Uruguayan, 9; German, 6; Brazilian, 4; Norwegian, 4; Spanish, 3; American, 2; Belgian, 1; others, 2.

COASTING AND FLUVIAL TRADE.

Entered:				
Steamers,	6,002,	with an aggregate of	1,351,468	tons.
Sailing-vessels,	15,725,	" "	478,465	"
Cleared:				
Steamers,	6,012,	" "	1,293,533	"
Sailing-vessels,	16,195,	" "	500,338	"

The distribution of this trade by flags was: Argentine, 57 per cent.; British, 24; French, 9; Uraguayan, 3; Paraguayan, 2; others, 5.

"We have no merchant navy," writes a native statistician, "unless that name be given to a few hundred barges, lighters, and schooners, which, with Italian and Austrian crews, ply on our rivers and carry the Argentine flag just as they might carry the Turkish."

Railways.—The railways in operation, and in process of building, at the end of 1883, were as follow:

LINES.	In operation.	Building.
	Kilometres	Kilometres
Central Argentine (Rosario to Córdoba)	396	...
Northern Central (Córdoba to Tucuman)	546	...
Northern Central (Tucuman to Jujuy)	...	340
Northern Central (branch from Frias to Santiago)	...	162
Northern Central (branch from Recreo to Chumbicha)*	...	300
Andine (Villa Maria to La Paz)	470	...
Andine (La Paz to San Juan *via* Mendoza)	...	255
Western (Buenos Ayres to Bragado, and branches to Pergamino and Lobos)	515	...
Western (extensions)	...	356
Southern (Buenos Ayres to Altamirano, and branches to Olavarria and Tandil)	679	...
Southern (Olavarria to Bahia Blanca)	...	386
Northern (Buenos Ayres to El Tigre)	35	...
Ensenada (Buenos Ayres to Ensenada)	58	...
Campana (Buenos Ayres to Campana)	81	...
Eastern (Concordia to Ceibo)	160	...
Puerto Ruiz and Gualeguay	10	...
Rosario to Candelaria	...	60
Transandine † (Mercedes in Buenos Ayres to Mercedes in San Luis)	...	578
Santa Fé-Colonial	...	100
Totals	2,950	2,567

Tramways.—At the end of 1882 there were in the capital five tramway or horse-car lines, which, covering an aggregate of 95 miles, and with 1,001 employés, carried an average of 51,-740 passengers daily. There were also lines in some of the smaller towns of the province of Buenos Ayres; Córdoba city had two lines, and Rosario one.

Telegraphy.—The total length of the Argentine telegraph lines at the end of 1882 was 18,-543 kilometres, of which 10,772 belonged to the Government; there were 202 offices, and the number of dispatches transmitted throughout the year was 509,928, of which 71,838

* From Chumbicha the line is to be extended southwest to La Rioja, and northeast to Catamarca.

† This line will open direct communication between Buenos Ayres and Santiago, the capital of Chili, and so between the Atlantic and Pacific Oceans.

were official. By Dec. 31, 1883, 1,727 additional miles of Government line were completed.

Telephone.—In December, 1882, there were two telephone companies in Buenos Ayres, with 1,500 subscribers.

Post-Office.—In 1881 the number of letters that passed through the post-office was 9,723,740, of which 2,380,065 were official; and that of packages of printed matter, 6,132,374, of which 1,191,046 were to or from foreign countries.

Improvements.—The much-needed work of improving the condition of the ports, which is "still almost the same as at the arrival of the first Spanish settlers," says President Roca, was continued actively during the past year. The canalization of the Riachuelo, at Buenos Ayres, was sufficiently far advanced in January, 1883, to admit vessels of 1,120 tons register, and the intention is to prepare the harbor for craft of all sizes.

ARIZONA. Territorial Government.—The following were the Territorial officers during the year: Governor, Frederick A. Tritle; Secretary, H. M. Van Arnam; Chief-Justice of Supreme Court, Charles G. W. French; Associate Justices, Wilson W. Hoover and Daniel H. Pinney.

General Condition.—During the past two years the advancement of the Territory, both with regard to wealth in the development of profitable industries and increase of population, has been remarkable. The Territory can now claim 75,000 people and over $20,000,000 of taxable property; and while the progress of its civilization and the development of its resources have been opposed by most serious difficulties, it is now safe to say that those dangerous and disturbing elements are well under control. During the past two years exceptional development has been made in all industries, mining, grazing, and agricultural; extensive railroad enterprises have been successfully completed; and the affairs of the Territory generally are exceedingly prosperous.

The great natural facilities of the country for stock-raising and wool-growing are beginning to be understood, and large droves of cattle and sheep are being driven in from the neighboring States and Territories.

The valleys along the principal water-courses yield magnificent crops of grain, fruits, and vegetables, and even the *mesa* or table-lands adjacent will grow almost everything with a sufficient water-supply. The valleys of the Gila and Salt river are being rapidly settled.

Beyond the making of flour and lumber the manufacturing interests of the Territory are in their infancy. Some of the native plants furnish excellent material for the manufacture of paper, coarse cloths, mats, ropes, and other articles. No attempt has been made to utilize this raw material, although it is known that the aborigines have succeeded, in their crude way, in making ropes of fair quality.

Mining.—Since the building of the Southern Pacific Railroad, mining has made rapid progress, and now Arizona stands second on the list of silver-producing States and Territories.

Eight years ago the bullion yield of the Territory was but a little over $100,000, while now it stands third on the list in its yield of the precious metals.

According to the best information at hand, the production of Arizona in gold and silver for the four years ending Dec. 31, 1882, was as follows:

1879	$1,942,408	1881	$8,198,766
1880	4,472,471	1882	9,298,267

A large quantity of rich ore and base bullion which finds its way out of the country is not included in the above. It is safe to estimate the value of such ores and bullion at 10 per cent. of the figures given.

From careful estimates it is believed that Arizona's yield of gold and silver for 1883 will exceed $12,000,000.

As near as can be ascertained, the copper yield of the Territory for the past three years has been as follows:

	Pounds.		Pounds.
1880	2,000,000	1882	15,000,000
1881	5,000,000		

The estimated yield for 1883 has been placed at from 20,000,000 to 25,000,000 pounds.

The combined value of the silver and copper product for 1883 will be between fifteen and sixteen million dollars.

Agriculture and Grazing.—Irrigation is necessary to the raising of a crop in Arizona. It is estimated that there are at the present time between 60,000 and 70,000 acres under cultivation in the Territory, and that the quantity of grain (wheat, barley, and corn) produced during the year was nearly 60,000,000 pounds. In the valleys of the Gila and Salt rivers alone there are 400,000 acres which can be brought under cultivation, of which only about one tenth is now utilized. Two crops a year can be grown. After the wheat or barley is harvested, corn is planted. There are at present about 30,000 acres under cultivation along the Salt river, yielding, in 1883, 14,000,000 pounds of wheat, and 18,000,000 pounds of barley. Of fruit-trees there are nearly 40,000, and over 300,000 vines in bearing. Alfalfa is sown extensively, and yields three cuttings during the season, averaging two tons to the acre at a cutting. The number of cattle in the Territory is about 280,000, an increase of more than 300 per cent. during the past two years. It is estimated that the area of grazing-land in the Territory will reach 60,000 square miles. The country north of the thirty-fourth parallel is well adapted to the raising of sheep. The number of sheep in the Territory is placed at 300,000, and the yearly clip at 2,400,000 pounds.

As near as can be ascertained, the number of horses, mules, and hogs in the several counties is as follows:

COUNTIES.	Horses.	Mules.	Hogs.
Yavapai	10,000	2,000	1,000
Maricopa	5,000	2,000	7,000
Cochise	4,000	3,000	500
Graham	3,000	1,000	500
Pinal	2,000	1,000	600
Gila	1,000	800	300
Yuma	800	300	200
Mohave	1,000	500	....
Pima	6,000	2,500	1,000
Apache (no data)	....	....	....
Total	32,800	12,600	11,100

The School System.—No Territory of the Union has a better school system than Arizona. All children of school age are compelled to attend the public schools, and the expenses are borne by a direct tax on the people. A superintendent is elected every two years. In each county the probate judge is *ex-officio* superintendent of the schools of his county. According to the latest census, the number of schools was 97.

The total revenue for school purposes in the Territory, for 1882, was $101,967.35.

There are many small communities that fail to receive any advantage from the school fund, owing to the necessity of only organizing schools with a large number of pupils. The number of children of school age is nearly 10,000.

Railroads.—Arizona is now in possession of two transcontinental railroads. The Southern Pacific enters the Territory at Yuma, and crosses nearly along the line of the thirty-second parallel. Its length through the Territory is 389 miles. From Benson, 40 miles east of Tucson, the Arizona and New Mexico Railroad branches from the Southern Pacific and runs southward to Guaymas, on the Gulf of California. The length of this road through Cochise and Pima counties is about 65 miles. The Atlantic and Pacific Railroad begins at Albuquerque, New Mexico, and strikes westward, following very nearly the line of the thirty-fifth parallel, to Colorado river. Its length through the Territory is about 350 miles. This road opens up the great coal-beds and the grand timber-belt of the Mogollon mountains. This great forest is nearly 200 miles in length by 60 in width, and contains some of the finest timber in the United States. There is also the Clifton and Lordsburg road, now nearly completed, running in this Territory a distance of about 60 miles, and furnishing an outlet to a very rich mineral and grazing region. Other roads have been projected, and some are under way. In connection with these roads there is over a thousand miles of telegraph lines.

The Indian Question.—One of the greatest drawbacks to the prosperity of Arizona has been found in the hostile Apaches. Up to 1874 they terrorized the entire Territory, kept out immigration and capital, and had life and property virtually at their mercy. In that year they were placed on a reservation, where those of them who are not absent in Mexico yet remain. It was supposed that an end had been put to Indian troubles, but the raids of the past two years have shaken the feeling of security.

There are in Arizona about 25,000 Indians occupying lands reserved to them by the General Government. A large part of them are self-supporting, although about 5,000 depend almost entirely upon the Government. The tribes occupying the Territory are the Hualapais, Yumas, Papagoes, Pimas, Maricopas, Mohaves, Navajos, Ava Supies, and Moquis; also various branches of the Apache family, who have been placed upon the San Carlos Reservation. With the exception, perhaps, of the Hualapais and Yumas, these Indian tribes occupy some of the finest spots in the Territory, covering a vast area. The Hualapais and Yumas occupy reservations that are almost entirely barren lands. The principal dissatisfaction upon the San Carlos Reservation came from the Chiricahuas, and in April, 1882, it resulted in an open rebellion. On the morning of April 19th Loco's band of Chiricahuas broke out, and, after killing the chief of police, entered the valley of the Gila, and it is estimated that sixty industrious citizens were killed. The military force of the Territory was so small and so scattered that the raid was continued almost without interruption until the Indians reached the boundary line between Arizona and Sonora. Gen. Wilcox, then in command of this department, moved his forces with great activity, and the General of the Army, as well as the Secretary of War, responded promptly by sending more troops into the field, and several engagements took place within a few miles of the Sonora line, in which a number of the Indians were killed.

The survivors, supposed to number about 500, took up their abode in the Sierra Madre mountains, in Sonora and Chihuahua, Mexico. They remained quiet until March, 1883, when a small number of them raided through Southeastern Arizona and Southwestern New Mexico, killed a number of citizens, and stole a large amount of property, returning to Mexico without receiving any punishment.

Gen. George Crook visited Sonora and Chihuahua and arranged with the authorities there to take a military force into Mexico for the purpose of capturing these Indians. He found them encamped in the Sierra Madre mountains, but upon his approach many of the fighting men fled. An engagement was had, and some Indians killed. Quite a large number of men, women, and children were captured. With these the general returned and placed them upon their reservation.

Lawlessness and the depredations of "cowboys" and "rustlers," who at one time held portions of the Territory in a condition of terrorism, have succumbed in a large degree to law and order.

ARKANSAS. State Government.—The State officers during the year were as follow: Governor, James H. Berry, Democrat; Secretary of State, Jacob Frolich; Auditor, A. W. Files;

Treasurer, W. G. Woodruff, Jr.; Attorney-General, C. B. Moore; Superintendent of Public Instruction, W. E. Thompson; State Land Commissioner, W. P. Campbell. Judiciary, Supreme Court: E. H. English, Chief-Justice; W. W. Smith and John R. Eakin, Associate Justices. Chancellor, D. W. Carroll.

Legislative Session.—The Legislature met on the 8th of January, and adjourned on the 28th of March. The State was redistricted for congressional purposes as follows:

1st district, the counties of Randolph, Clay, Green, Lawrence, Sharp, Independence, Jackson, Craighead, Mississippi, Poinsett, Cross, Crittenden, St. Francis, Lee, Phillips, Desha, and Chicot.

2d district, the counties of Dorsey, Lincoln, Grant, Jefferson, Arkansas, Monroe, Prairie, Lonoke, Woodruff, White, Faulkner, Conway, Pope, Van Buren, Stone, and Cleburne.

3d district, the counties of Polk, Howard, Sevier, Little River, Pike, Hempstead, Miller, Lafayette, Columbia, Nevada, Clark, Hot Spring, Dallas, Ouachita, Calhoun, Union Bradley, Drew, and Ashley.

4th district, the counties of Crawford, Franklin, Johnson, Sebastian, Logan, Scott, Yell, Perry, Garland, Saline, Pulaski, and Montgomery.

5th district, the counties of Benton, Washington, Madison, Carroll, Boone, Newton, Searcy, Marion, Baxter, Fulton, and Izard.

An act was passed to provide for revising and digesting the statutes. Another act provides that "the charters and all the amendments thereto of all municipal corporations within this State, designated as cities of the second class and incorporated towns, may be surrendered, all offices held thereunto abolished, and the territory and inhabitants thereof remanded to the government of this State in the manner hereinafter provided."

An act was passed to establish the county of Cleburne from portions of Van Buren, Independence, and White counties.

An important enactment was the following:

That if any person believing himself to be the owner, either in law or equity, under color of title has peaceably improved, or shall peaceably improve any land, which upon judicial investigation shall be decided to belong to another, the value of the improvement made as aforesaid, and the amount of all taxes which may have been paid on said land by such person and those under whom he claims, shall be paid by the successful party to such occupant, or the person under whom or from whom he entered and holds, before the court rendering judgment in such proceeding shall cause possession to be delivered to such successful party.

The principal law of the session, relating to the liquor-traffic, provides:

That any person owning or using or controlling any house or tenement of any kind, who shall sell or give away or cause or allow to be sold or given away any alcohol, ardent or vinous spirits or malt liquors, any compound or tincture commonly called bitters or tonics, whether the same be sold or given away, openly or secretly, by such device as is known as "The Blind Tiger," or by any other name or under any other device, shall be guilty of a misdemeanor, and if any person shall obtain any such alcohol, ardent or vinous spirits, or malt liquors, or any compound or tincture commonly called bitters or tonics, in any house, room, or tenement so owned, occupied, or controlled by another, by going therein or thereto, and by call, sound, word, or token, it shall be *prima facie* evidence of the guilt of the person who so owns, occupies, or controls such house, room, or tenement; or, if any persons are allowed to pass through or into any room or place so owned or controlled or occupied by another, and there obtain such alcohol, ardent or vinous spirits, or malt liquors, or any compound or tincture commonly called bitters or tonics, it shall be deemed presumptive evidence of the guilt of the party who owns, controls, or occupies such house or room.

Other acts passed were as follow:

For the better regulation of the system of letting and subletting of lands, and for the punishment of persons for violations of the provisions of this act.

Making the stealing of cattle, hogs, sheep, and goats a felony, and prescribing the punishment.

To provide how railroads shall unite, cross, intersect, or join other railroads.

To prevent the sale of obscene literature.

Requiring compensation for causing death by wrongful act, neglect, or default.

The following article was proposed as an amendment to the Constitution of the State, to be voted upon at the next general election:

ARTICLE XX. The General Assembly shall have no power to levy any tax, or to make any appropriations to pay either the principal or interest, or any part thereof, of any of the following bonds of the State, or the claims, or pretended claims, upon which they may be based, to wit: Bonds issued under an act of the General Assembly of the State of Arkansas, entitled "An act to provide for the funding of the public debt of the State," approved April 6, A. D. 1869, and numbered from 491 to 1,860, inclusive, being the "funding bonds," delivered to F. W. Caper, and sometimes called "Holford bonds," or bonds known as railroad aid bonds, issued under an act of the General Assembly of the State of Arkansas, entitled "An act to aid in the construction of railroads," approved July 21, A. D. 1868, or bonds called "levee bonds," being bonds issued under an act of the General Assembly of the State of Arkansas, entitled "An act providing for the building and repairing the public levees of the State and for other purposes," approved March 16, A. D. 1869; and the supplemental act thereto, approved April 12, 1869; and the act entitled "An act to amend an act entitled 'an Act providing for the building and repairing of the public levees of this State,'" approved March 23, A. D. 1871, and any law providing for any such tax or appropriation shall be null and void.

United States Senator Garland was re-elected.

Finances.—The total amount of warrants drawn by the Auditor for the two years ending September 30, 1882, was $1,356,392.80, of which sum $498,382.63 was used in paying the current expenses of the State government for the two years.

During the two years the 10 per cent. bonds of the State, known as the Baxter war bonds, amounting originally to $280,443.02, were redeemed and canceled.

There is now outstanding only about $50,000 in State scrip.

On the subject of the State debt, and the condition of the State's finances, Treasurer Woodruff says: "The redemption of the ten-year bonds, and the near absorption of the floating (scrip) debt, place the State in better financial condition than at any time since 1860. . . . Taking as correct the estimate of the bonded debt contained in statement No. 18, the acknowledged debt was, October 1, 1882,

$5,078,692. Of this amount, $2,495,500 bears interest at the rate of 6 per cent., and $22,000 at the rate of 5 per cent. per annum; $6,200 bears no interest, and will be redeemed before the Legislature meets. The remaining $2,554,-992 is unpaid interest accrued."

In his message to the Legislature at the beginning of the year, the Governor says:

By reference to the reports of the Treasurer and Commissioner of State Lands, it will be seen that both recommend the repeal of the donation or homestead law, and that the forfeited lands, which now amount to over 3,000,000 acres, be reserved, or sold only for the extinguishment of the State debt. This would seem to be a wise provision, and I most heartily concur in its recommendation.

Among the first things, however, to determine is, of what does the just and legal debt consist? The legality and justness of a portion of this debt have been questioned, and much bad feeling has been engendered among the people of the State. Among all classes, however, there is a disposition to act honorably and honestly by the State's creditors. The mass of the people are honest and in favor of honest methods, and the one important point first to determine is, whether common honesty demands payment of any portion of our disputed indebtedness.

Repudiation, in any form or in any shape, can be fraught only with evil. No constitutional enactment can do away with the State's legal responsibility for paper issued by her.

The history of the issuance of $5,300,000 of bonds to aid in the construction of railroads is well known. The bonds were issued to the roads, taken to New York and other commercial centers, sold, and the proceeds used by the roads to aid in their construction. When this was done, there was a contract between the roads and the State that the latter should be held harmless. These bonds are now in the hands of innocent purchasers. Because the Supreme Court of the State has declared the act under which the bonds were issued illegal, and as the General Assembly, at its extraordinary session in 1874, repealed the act providing for the sequestration of the earnings of the roads, in default of payment of interest, it is contended that the innocent holders of the bonds should receive nothing. So far as the State is concerned she can not be expected, nor is it assumed, by even the bondholders, that she ought to pay any part of this indebtedness. But does she not owe a duty to the innocent purchasers of her bonds, to see that they are protected, and that the roads are compelled to comply with their contract? The State has the power, through the Legislature, undoubted and supreme, to tax the railroads in an amount sufficient to meet the yearly interests and eventually the principal of these bonds; this, irrespective of the unconstitutionality of the law under which they were issued.

Since commencing my message, the Circuit Court of the United States, for this State, has rendered a decision in regard to these railroad aid bonds, sustaining this view of the case, and therefore strengthens this my recommendation.

I desire to again emphasize all that has heretofore been said on the subject of the judgment held by citizens against the State, on account of property taken from them during the pending of martial law in several counties in 1869. Provision for the payment of this debt should be made at once.

Inaugural Views.—Gov. Berry was inaugurated on the 13th of January, and in his address expressed the following views:

The fact that there are outstanding bonds representing some $13,000,000, which are claimed by the holders to be a valid obligation of the State, and which are believed by a large portion of our people to be fraudulent and void, has proved a constant source of annoyance and embarrassment. The best interests of the people demand that the question of the State's liability for these bonds be definitely settled. If they constitute a just claim, we ought to provide for their ultimate payment. If they are not a legitimate charge against the State, and we do not intend to pay them, common fairness requires us to say so, and say it in such a manner that we can not be misunderstood. Two classes of these bonds, those known as the railroad aid and levee bonds, amounting to more than $10,000,000, have been declared by our Supreme Court to have been issued without authority of law, and not binding upon the State. The remaining class, known as the Holford bonds, are based upon a claim which the authorities of the State refused to recognize when first preferred—a claim the people have never admitted to be just, but upon which they have already paid all that, under any view of the circumstances, could be claimed was either legal or equitable. In a matter of this magnitude it seems to me eminently proper that the question should be withdrawn from the General Assembly and placed directly before the people. Under our present system the railroad property practically escapes taxation, the total amount of State taxes upon railroad property upon last year's assessment, excluding lands, being only $2,400. Some of these railroad corporations claim to be exempt from taxation by their charters. This claim should be thoroughly investigated.

The Governor proposed a new revenue law, "that will compel assessors to assess all of the property of the State at its true value; that will impose upon railroad property its just portion of taxes, levied for the benefit of all; that will prevent tax-dodging," etc.

Railroad Aid Bonds.—The railroad aid bonds were issued by the State under the act of 1868. They were accepted and used by five railroad companies, to which the following issues of bonds were made:

Little Rock and Fort Smith	$1,000,000
Little Rock, Pine Bluff, and New Orleans	1,200,000
Mississippi, Ouachita, and Red River	600,000
Memphis and Little Rock	1,200,000
Arkansas Central	1,350,000
Total	$5,350,000

To which sum must be added twelve years' interest at 7 per cent.

The Memphis and Little Rock Railroad Company owns and holds $938,000 of the $1,-200,000 bonds originally issued to that corporation, and the bonds owned and held by the Little Rock and Fort Smith Railway Company amount to $644,000. These bonds were purchased years ago upon advice of counsel, at very low figures, with a view of hedging against a possible decision by the courts, holding the railroads and not the State liable for the bonds issued to those corporations. The remainder are outstanding.

Of the railway corporations above named, all but one—the Arkansas Central—are thoroughly responsible, and fully able to liquidate the claims due on these bonds.

In the suit of Tompkins *vs.* the Little Rock and Fort Smith Railroad Company, in the United States Circuit Court, Judges Caldwell and McCrary held on demurrer that these bonds were a lien on the railroads, but, at the hearing on the merits, Justice Miller held the contrary. Judge Caldwell dissented, and the

case went to the Supreme Court of the United States. These issues of railroad aid bonds form a portion of the alleged public debt of the State, to repudiate which amendment No. 1 was submitted to the electors in 1880, lost by not receiving a constitutional majority, and will be resubmitted at the general election in 1884. The significance of Justice Miller's decision is in holding the railroads harmless, and throwing the bonds back on the State, which issued them under an act in whose passage the State Supreme Court has decided the necessary forms were not complied with.

Miscellaneous.—The Insane Asylum has been completed, and a State Board of Health organized. The building for a branch normal college for the education of colored teachers, near Pine Bluff, has been completed.

In March a joint legislative committee reported the net deficit of Gov. Churchill's accounts, as State Treasurer during three terms, to be $233,616.89, differing widely from the previous report of a Senate committee, which made the deficit about $114,000.

ASTRONOMICAL PHENOMENA AND PROGRESS.

Solar Activity.—The year 1883 has been characterized by considerable disturbance of the sun's surface. The "Comptes Rendus," vol. xcvii, No. 4, describes in detail the phenomena observed from the 16th to the 23d of July—a period of very marked activity. At 4 o'clock on the afternoon of the 16th, M. Thollon saw, on the sun's eastern limb, a most brilliant prominence, in which the spectroscope indicated a violent displacement of the C line. At $5^h.\ 20^m.$ this displacement was so pronounced that M. Thollon inferred an approach of solar matter at the rate of 186 miles a second—ten times the velocity of the earth in its orbit. Somewhat earlier in the afternoon a smaller displacement was observed in the opposite direction. On the 21st and 22d, a considerable part of the sun's southern hemisphere gave signs of great agitation. A large group, consisting of spots too numerous to be counted, was seen near the eastern margin, and a long chain of spots, at almost regular intervals, stretched across the disk, from limb to limb. On the morning of the 22d a brilliant prominence attracted attention, and a number of metallic lines were strongly reversed. M. Thollon says he had never, in so short a time, seen so many large displacements of the spectral lines.

Total Eclipse of May 6, 1883.—This eclipse was observed at Caroline Island, in the South Pacific Ocean, by parties from the United States, Paris, and Vienna. The expedition sent by the United States Government was under the direction of Prof. Edward S. Holden, of the Washburn Observatory, at Madison, Wis. Other members of the party were Lieut. Brown, of the Navy; Prof. Hastings, of the Johns Hopkins University; Prof. C. S. Peirce, of the Coast and Geodetic Survey; and Mr. C. H. Rockwell, of Tarrytown, N. Y. It had been hoped by astronomers that the question of the existence of an intra-Mercurial planet would be definitely settled, as a special search had been arranged for by two parties of observers. The state of the atmosphere was favorable, the duration of totality was unusually long, and Prof. Holden himself swept the region about the sun with all possible attention. His search, however, was entirely unsuccessful. The facts of the case are thus exceedingly perplexing. That fixed stars, whose positions were well known, should have been mistaken for planets by two experienced observers, such as Watson and Swift, seems almost incredible. On the other hand, it is at least equally improbable that Professors Holden and Palisa, with more time for the search, should have failed to detect a planet, if any were visible. During totality, M. Trouvelot noticed a reddish star of the fifth magnitude—not far from the sun—which he has not since been able to identify.

Markings and Spots on Mercury.—"The Monthly Notices of the Royal Astronomical Society" for March, 1883, contains the results of the recent observations of Mercury by Mr. W. F. Denning, of Bristol, Eng., and Sig. Schiaparelli, of Milan, Italy. The former saw several dark, irregular spots on the mornings of Nov. 6, 7, 9, and 10, 1882; also a small bright spot and a large white area. The south horn of the planet was also seen on several mornings to be very much blunted. Both Denning and Schiaparelli find the markings on Mercury much more distinct than those on Venus. They find, moreover, that the former bears a more striking resemblance, in its physical aspect, to Mars than to Venus. Without undertaking to give an exact determination of Mercury's rotation-period, Mr. Denning expresses the opinion, concurred in by Schiaparelli, that Schroeter's period of $24^h.\ 5^m.\ 30^s.$ is too short. The observations of these astronomers give promise that this element, hitherto somewhat doubtful, may soon be accurately found.

The Transit of Venus on Dec. 6, 1882.—The various expeditions sent to different parts of the world to observe the transit of Venus in 1882 were generally successful. At the Naval Observatory, Washington, D. C., Prof. E. Frisby, with the 26-inch equatorial telescope, observed the four contacts as follows:

First contact	8h.	56m.	4·5s.
Second contact	9	16	9
Third contact	2	38	57
Fourth contact	2	58	55

Capt. Sampson observed with the 9-inch equatorial telescope as follows:

First contact	8h.	55m.	9·96s.
Second contact	9	16	18·96
Third contact	2	39	56·11
Fourth contact	Uncertain.		

The observations at Princeton, N. J., were reported by Prof. Young in the "Sidereal Messenger" for January, 1883. All four of the contacts were observed. One hundred and eighty-eight photographs were taken by Prof. Bracket. The spectroscopic observations by

Prof. Young and Mr. McNeill showed unmistakably the presence of water-vapor in the atmosphere of Venus. "Between the first and second contacts the atmosphere of the planet was conspicuous as a delicate halo around its disk."

The transit was observed at Vassar College, Poughkeepsie, N. Y., by Prof. Maria Mitchell; at Harvard College Observatory, by Prof. Pickering and others; at Dearborn Observatory, Chicago, by Professors G. W. Hough and S. W. Burnham; at Allegheny Observatory, Pa., by Prof. S. P. Langley; at Tarrytown, N. Y., by Mr. Charles H. Rockwell; at Columbus, O., by Prof. R. W. McFarland and Mr. F. H. Eldredge; at Phelps, N. Y., by Mr. W. R. Brooks; at Nashville, Tenn., by Prof. E. E. Barnard; at New Windsor, Ill., by Prof. E. L. Larkin; and by many others in various parts of the country. The observations of foreign astronomers were also generally successful. "How long it will be before the observations, especially the photograph and heliometer measures, are fully reduced and published, it is impossible to say. It must be years at least. After this is done, it will be extremely probable that some high authority, perhaps an international commission, should collect and discuss all the various observations, both of this transit and that of 1874, and, from the enormous mass of material thus obtained, deduce the best final result which it can furnish—a result which can not fail to be of the highest value in settling the dimensions of our universe." *

Mr. A. Stanley Williams, who observed the transit at Brighton, Eng., while examining the border of light around Venus, noticed this fringe to be very conspicuous on the southern portion of the planet's limb, but very faint and narrow elsewhere. During the transit, however, some change was manifest in the relative brightness at different parts of the ring. The phenomenon was ascribed by Mr. Williams to the presence of clouds on the limb of Venus.

The Moon.—In "The Observatory" for March and April, 1883, Mr. A. Stanley Williams, of West Brighton, Eng., gives an interesting account of his observations on the lunar crater Plato during the past five years. The condition of our satellite has long been regarded as dead and changeless; but the observations of Mr. Williams, in connection with a most careful examination of the floor of Plato by several astronomers from 1869 to 1871, reveal the fact of undoubted physical changes within the past twelve years. The evidence of variation does not rest on the testimony of a single observer. Observations of Plato were simultaneously conducted by the Rev. J. B. Allison, of Chesterfield; W. F. Denning, of Bristol; T. P. Gray, of Bedford; and H. Pratt, of Brighton. Some of the changes discovered by a comparison of the late observations with those of 1869–'71 are as follow:

1. Of the thirty-seven spots observed and mapped about 1870, six have entirely disappeared. Seven new ones have been found, however, during the recent observations.

2. A very large increase in visibility is found in the spots numbered 12 and 13 on the chart of the floor of Plato. The latter also exhibits some remarkable changes in form.

3. No. 16 has to a considerable extent decreased in brightness.

4. Several streaks in the floor of the crater have sensibly increased in breadth; three new streaks have appeared within the past ten years, and several that were distinctly visible about 1870 can not now be found.

5. Very obvious changes in the state of the floor of the crater have taken place since the observations of 1869–'71.

Diameter of the Moon.—Prof. H. M. Paul, of the United States Navy, has lately redetermined the semi-diameter of the moon from two occultations of the Pleiades, observed on July 6, 1877, and September 6, 1879. His value of the mean apparent semi-diameter is 15′ 31·78″; corresponding to a diameter of 2158·3 miles.

Minor Planets.—The 232d minor planet was detected on the 21st of January, 1883, by Herr Palisa, of the Vienna Observatory. It is of the twelfth magnitude, and is the thirty-ninth discovered by this observer. The right to select a name was delegated to Dr. Engelhardt, of Dresden, who called it Russia. Its elements, computed by Dr. Herz, from Vienna observations of January 31st, Rome, March 8th, and Dresden, April 13th, are as follow:

Epoch, April 15·5, Berlin mean time.

Longitude of perihelion	200°	24′	37′
Longitude of ascending node	152	30	23
Inclination	6	8	34
Mean daily motion	870·2296″		
Period	1489·26 days.		
Mean distance	2·5522		
Eccentricity	0·1754		

The mean distance falls in the cluster immediately exterior to the well-known hiatus where the period of an asteroid would be one third that of Jupiter.

Another asteroid was discovered at Marseilles, on the 11th of May, by M. Borelly. Its light is about equal to that of a star of the eleventh magnitude. The third minor planet of the year was detected, August 12th, by Dr. Peters, of Clinton, N. Y. This is the 234th of the group, and the 42d discovered by him. It is of the ninth magnitude, and its approximate elements are as follows:

Epoch, 1883, August 30·5, Berlin mean time.

Longitude of perihelion	332°	6′	35·5″
Longitude of ascending node	144	6	44
Inclination	15	31	19
Eccentricity	0·2436		
Mean daily motion	956·674″		
Period	1354·7 days.		
Mean distance	2·39605		

Owing to the great eccentricity of this planet's orbit, its least distance from the sun is only 1·812. Its remarkable brightness when discovered was due to the fact that it was nearly in opposition, as well as near the sun, at the time of its detection. The 235th minor

* "Sidereal Messenger," February, 1883.

planet was discovered on the morning of Nov. 29, 1883, by Dr. Palisa, of Vienna.

Distribution of the Asteroids in Space.—Flammarion's "L'Astronomie" for June, 1883, contains an article of much interest on the distribution of the asteroids between Mars and Jupiter. The author, Gen. Parmentier, notices well-defined gaps in those parts of the zone where the periods would be commensurable with that of Jupiter. His discussion of the periods and distances is thus confirmatory of Prof. Kirkwood's theory, published in 1866.

Several asteroids lately discovered are still without names; the following have been conferred during the current year:

No. 224. Oceana.	No. 230. Athemantis.
" 225. Henrietta.	" 231. Vindobona.
" 226. Weringia.	" 232. Russia.
" 227. Philosophia.	" 234. Barbara.
" 229. Adelinda.	

Jupiter.—The great red spot on Jupiter, which had been observed for several years, gradually disappeared in 1883. Prof. Ricco, of the Royal Observatory, Palermo, says that, in September, the part of the surface recently occupied by it had become brilliantly white. He infers from his own observations that the neighborhood of the red spot had acquired the same rate of motion as the spot itself. This place is designated by a permanent depression in the great belt in which the red spot was situated.

Prof. G. W. Hough, Director of the Dearborn Observatory, Chicago, has for several years made Jupiter a special object of attention. In his last annual report, May 9, 1883, he says: "While the spot has remained nearly stationary in latitude, the south edge of the great Equatorial Belt has gradually drifted south during the present opposition, until it is nearly coincident with the middle of the spot. But what is remarkable, the two do not blend together, but are entirely distinct and separate. A depression has formed in the edge of the belt, corresponding in shape to the oval outline of the spot, the distance between the two objects being about one second of arc. That portion of the belt following the spot first began to drift, forming a bend near the position occupied by a curious offshoot, seen at various times in 1880 and 1881. The non-blending of the two objects would seem to indicate that they are composed of matter having repellent properties, similar to two clouds charged with the same kind of electricity."

It is suggested by Prof. Hough that the red spot visible from 1878 to 1883 may have been a return of the great spot observed by Hook and Cassini from 1664 to 1666. It was some distance south of the equator, and its diameter was over 8,000 miles. It reappeared and vanished eight times within forty-four years from the date of its first discovery. If the objects are the same, "we would naturally infer that it was a portion of the solid body of the planet; being sometimes rendered invisible by a covering of clouds."

"The Observatory" for April contains a communication by N. E. Green, on the relative heights of markings on Jupiter. The white spots, it is maintained, are at a higher level in the atmosphere of the planet than the dark ones. This theory is derived from a critical examination of several hundred drawings of the planet, taken within the past twenty years. The reasons assigned by Mr. Green for the adoption of his views are as follow:

"1. The general form of the light marks, these being round, oval, or compact patches, very unlike openings or rifts in a superficial cloudy envelope. 2. That the oval forms so frequently seen on the equatorial side of the dark southern belt, indent equally both the dark belt and the general surface of the planet. 3. That the continuity of a long, dark streak is occasionally broken by a patch of light broader than the streak, the patch of light hiding, therefore, not only the streak but a portion of the general surface of the planet to the north and south of it. The first reason, that of the general form of the light markings, may seem to be weak, but, taken in connection with their relative position, is by no means inconclusive. In March, 1874, lines of small round patches of light, smaller than the satellites, were frequently seen, looking like strings of pearls; these occurred generally on the dark southern belt, but were occasionally seen in northern and high southern latitudes. Now, if the darker portions are uppermost, these surfaces must have been pierced like the sides of a man-of-war, in order that the light underlying portion might be seen through the openings. Again, in January, 1878, large oval masses of light were so constant on the equatorial side of the southern belt, that the belt itself looked like a long, dark bridge with many arches; but let it be observed that these light forms not only indented the dark belt on one side, but equally indented the general tone of the planet on the other; and if we consider the dark belt as being at a higher level, and the light marks as portions of a continuous light surface seen through its openings, we must admit that some other envelope is also pierced with similar openings, and that the two openings coincide, in order that the oval form may be complete—a supposition which is not recommended by its probability. But the last argument, that of the imposition of a mass of light on a long, dark streak, is the most conclusive; this has occurred several times since the last opposition, the most marked instances being on Feb. 18, at $8^h\ 55^m$ G. M. T., and Feb. 24, at $8^h\ 45^m$ On the first date a broad and somewhat square patch of light interrupted the continuity of the darkest portion of the southern belt, and, being broader than the belt, extended in the direction of the equator over the general tone of the planet. On Feb. 24th, $8^h\ 45^m$ a square patch of light was nearly on the center of the disk; this lay on a long, bluish streak. The patch of light was consider-

ably broader than the streak, and, what is very remarkable, portions of blue streak appeared on the north and south sides of the square patch, as though the light patch had been formed from material drawn away from the general covering of the surface, thus leaving vacant spaces both above and below it."

In "The Observatory" for April, 1883, W. F. Denning gives some results of his own observations of Jupiter's equatorial white spot, and also of the great red spot now no longer visible. Mr. Denning has found that while the white spot was completing 2,064 revolutions, the red spot performed only 2,045; in other words, the white spot gained 19 revolutions. The former, therefore, moves 260 miles an hour more rapidly in a direction from west to east around the planet. The average period of the red spot from July, 1881, to March, 1883, was $9^h\ 55^m\ 37{\cdot}7^s$; that of the white spot, $9^h\ 50^m\ 8{\cdot}7^s$. These results are very nearly identical with those found by Prof. Hough.

Researches on the Saturnian System.—During the past three years Dr. Wilhelm Meyer, of Geneva, has been engaged in an elaborate investigation of the Saturnian system.* His observations of 1881 give the following:

Dimensions of Saturn and its rings for the distance..	9·5389
Exterior diameter of the bright ring.....	40·35″
Diameter of the ring in the middle of Cassini's division.....	34·48
Interior diameter of the bright ring.....	26·05
Interior diameter of the dusky ring.....	21·13
Distance between the extremity of the ring and the planet on the west.....	11·34
The same distance on the east.....	11·30
Equatorial diameter of the planet.....	17·77
Polar diameter of the planet.....	16·12
Compression.....	$\frac{1}{10·7}$

The interior edge of the bright ring was not sharply defined, and hence the interior diameter could not be determined with accuracy.

Orbits of the Satellites and Mass of the Primary.—Dr. Meyer's observations of Mimas and Hyperion were insufficient for a determination of their orbits. The others were satisfactorily observed, and the resulting distances and periods are given below:

SATELLITES.	Mean distance.	Period. d.	h.	m.	s.
Enceladus.....	34″·3501	1	8	53	6·92
Tethys.....	42 ·7514	1	21	18	25·62
Dione.....	54 ·7574	2	17	41	9·29
Rhea.....	76 ·4383	4	12	25	11·57
Titan.....	176 ·9102	15	22	41	23·16
Iapetus.....	514 ·7108	79	7	49	24·84

The mass of Saturn obtained from these periods is $\frac{1}{3501}$, a value somewhat greater than that found by Bessel. The mass of the ring, that of Saturn being 1, is $\frac{1}{115}$.

The Divisions in the Ring.—The London "Observatory" for September, 1883, gives the following abstract of Dr. Meyer's researches on the divisions of Saturn's ring, and the disturbing influence of the satellites:

"Prof. Kirkwood showed, some twenty years ago, that Jupiter exercised a peculiar influence over the minor planets, tending to produce well-marked gaps among them at certain well-defined distances. For if the period of any minor planet were commensurable with that of Jupiter, the latter would exercise a perturbing influence upon it, which would eventually result in a complete change of orbit. Later on, in 1868, Prof. Kirkwood employed the same principle to account for the great division (Cassini's) in Saturn's rings. Maxwell had shown that the rings must be formed of separate particles moving round the planet to a certain extent as independent satellites. But a body moving round Saturn at the distance of Cassini's division would have a period that was very closely commensurable with those of each of the six inner satellites, and it would, therefore, be especially exposed to perturbation. Dr. Meyer has carried the principle yet further, and has investigated every possible combination of the commensurabilities of the revolution periods of the satellites, and he finds that, including the division of Cassini, there are seven places where the satellites would unite to exercise a perturbing influence on the members of the ring system. The first position is where the period would be one fourth of that of Mimas, and marks the inner boundary of the dark ring. Particles moving at almost precisely the same distances would have their times commensurable with each of the other five inner satellites: thus, for a period of one fourth of that of Mimas, we have a distance of 10·56″ from the center of Saturn; for one sixth of that of Enceladus, 10·48″, and for one eighth of that of Tethys, 10·66″. Dr. Meyer sees a consequence of this close agreement in the well-defined character of the inner edge of the dark ring. Next comes Struve's division in the dark ring. One fifth the period of Enceladus corresponds to a distance of 11·79″, one seventh that of Tethys, 11·66″; the next three satellites give a closely similar result. The position of Struve's division is not very exactly known, and Dr. Meyer adopts 11·79″ as its distance, being the mean between the positions of the inner boundaries of rings C and B. One third of the period of Mimas introduces a new series of commensurabilities in which all the six satellites take part, but the agreement is by no means so close as in the first two cases; and Dr. Meyer regards the indistinct character of the inner boundary of the bright ring B, which would about correspond to the mean of the distances indicated, as connected with this less perfect coincidence. The period of Enceladus is four times, that of Tethys six times, that belonging to a particle at this distance. Cassini's division corresponds, as already stated, to a period commensurable with each of the six inner satellites, the period of Mimas being twice as long, Enceladus three times, Tethys four, Dione six, Rhea nine, Titan thirty-three. The commensurabilities in the case of the four nearest satellites are of the simplest possible character; and we find

* Astr. Nach., Nos. 2,517, 2,527; London Obs., July and September, 1883; Payne's Std. Mess., September, 1883.

that the inner edge of Cassini's division, which is situated at the distance thus indicated, is especially distinctly marked. The outer edge is very indistinct, the influence of Rhea and Titan being much feebler, on account of their great distance.

"One fifth the period of Dione corresponds to about the distance of Encke's division. One eighth of Rhea's period and one half of Titan's approximate roughly to the same distance. The division is faint and ill-defined. One third the period of Tethys, the simplest relation now remaining, indicates the outer boundary of the ring system, and one seventh that of Rhea, and one twenty-sixth that of Titan, correspond to distances of nearly the same amount.

"The only simple relation omitted is that of one fifth the period of Tethys, and this closely corresponds to integral parts of the periods of the three next outer planets. There should, therefore, be another division at about 14·7″. Dr. Meyer does not seem aware of the fact; but several observers of Saturn have noticed that ring B begins to shade off a little nearer Saturn than the center of the ring, which would correspond to a distance of about 14·7″ or 14·8″. Prof. Holden speaks of the point where this shading off begins as 'a definite point.' The correspondence between calculation and observation as to the divisions of Saturn's rings would, therefore, seem to be complete."

At a meeting of the Philosophical Society of Washington, Oct. 13, 1883, William B. Taylor recalled attention to M. Struve's conclusion, announced in 1851, that the rings of Saturn are increasing in breadth, while the interval between the inner bright ring and the planet is gradually decreasing. This conclusion, according to Mr. Taylor, is confirmed by later observations; although the change is probably less rapid than was inferred by Struve, from a comparison of the measures up to 1850. This process of convergence, it was shown, is a necessary consequence of the modern discovery that the rings consist of dense streams of indefinitely small satellites. All parts of the ring are subject to perturbations by the exterior members of the Saturnian system. The bodies composing the ring can not, therefore, revolve in circular orbits. Hence the friction or collision of the different parts must frequently occur, resulting in a "degradation of motion," a convergence of orbits, and a shortening of the periods. In this theory of their constitution Mr. Taylor foresees the ultimate precipitation of the rings upon the surface of the planet.

Uranus.—The question whether Uranus has any measurable ellipticity seems to have been definitely settled by the recent observations of Profs. Safarik, of Prague; Schiaparelli, of Milan; and Young, of Princeton. The polar compression, according to these astronomers, is about $\frac{1}{17}$. This is greater than that of Jupiter, and nearly equal to that of Saturn—a fact indicative of a rapid rotation. Prof. Young has also observed certain spots or markings on the surface of the planet, similar to those on Jupiter and Saturn, by the continued examination of which the rotation period may possibly be determined.

Comets.—On the evening of February 23, 1883, a comet was discovered by W. R. Brooks, of Red House Observatory, Phelps, N. Y. The same body was independently detected only a few minutes later on the same evening by Dr. Swift, of the Warner Observatory, Rochester. About the first of March the comet was described as nearly round, and with a very condensed nucleus. According to some observers, it had a granular appearance, somewhat resembling a resolvable nebula. It had a faint tail, about 18′ in length. From observations made at Cambridge, Mass., on February 24th, March 5th, and March 17th, and one at Albany, N. Y., on March 5th, Messrs. Chandler and Wendell, of Cambridge, computed the following elements:

Perihelion passage = 1883, Feb. 13·9857, G. M. T.			
Longitude of perihelion	29°	00′	00″
Longitude of ascending node	278	7	41
Inclination	78	4	40
Perihelion distance	0·7599		

On the night of September 1st, W. R. Brooks observed a small object, which he at once suspected to be a comet. Cloudy weather prevented satisfactory observations till the night of the 3d, when his suspicions were fully confirmed. The comet was circular, more than a minute in diameter, had a well-defined starlike nucleus, and was without a tail. From about two weeks' observations at the Dudley Observatory, Albany, N. Y., Prof. Lewis Boss found the elements of the comet's orbit so nearly coincident with those of the comet discovered by Pons on the 20th of July, 1812, as to leave no doubt of their identity. This fact was announced on the evening of September 19th. The sameness of the two bodies, however, had been independently shown one day earlier by the Rev. George M. Searle, of New York. Mr. Searle's conclusion—reached by a method different from that employed by Prof. Boss—was at once forwarded to Harvard College, where it was received on the morning of September 20th. Marked changes of structure in approaching the sun were observed within three weeks from the date of its discovery. Indications of a nucleus were seen at Harvard on the night of September 21st. The next night its appearance was greatly changed; the brightness being nearly equal to that of an eighth-magnitude star. On the night of the 23d it had lost its stellar aspect, had become blurred, had a rather distinct nucleus, and was beginning to develop traces of a tail. The perihelion passage will occur about 1884, January 25th.

Attention has been called to the fact that the elements of this comet strikingly resemble those of De Vico's comet of 1846, with the exception that the ascending node of the one coincides with the descending node of the other. This close coincidence of orbits has been thought to indicate a common origin.

Periodicity of Comets.—At the session of the Paris Academy of Sciences on January 8, 1883, M. Zenger read a paper on the periodicity of comets. The theory proposed includes the following propositions:

1. Comets have originated in the sun.
2. Their origin has been in some way connected with the sun's rotation.
3. Portions of the matter forming the solar protuberances have been thrown out into space by enormous explosive force. From the matter thus ejected large meteorites might gather about them such quantities of the coronal substance as to constitute comets.
4. The periods of comets are multiples of half the rotation period of the sun.

M. Zenger has collected a number of facts which he regards as evidence in favor of his hypothesis.

The Great Comet of 1882, and the Spectroscopic Method of determining Motions in the Line of Sight.—This comet afforded an excellent opportunity for testing the accuracy of the spectroscopic method of finding the rate of approach or recession of the heavenly bodies. M. Thollon, observing the comet's spectrum on September 18th, found the bright lines of sodium displaced by an amount indicating a recession at the rate of forty-seven miles a second. After the comet had been observed for a sufficient length of time to determine its orbit, its true rate of motion in the line of sight was found to have been forty-five miles a second. As the amount of displacement was only estimated by M. Thollon, not accurately measured, the agreement between the observed and calculated rates is quite satisfactory. The comet's rate of recession, September 18, 1882, was about equal to that of Vega as determined by the spectroscope.

Meteors.—The following large meteors were observed during the year ending December 1, 1883:

On December 12, 1882, a large meteor was seen from the United States steamer Alaska, westward from San Francisco, latitude 38° 21′, longitude 134° 7′ west; when about 10° above the horizon it exploded with a loud detonation, the glowing fragments plunging into the ocean.

At Concord, N. H., one of the largest and most brilliant meteors ever observed there was seen on the afternoon of December 20, 1882, between four and five o'clock. It passed from west to east, and was as plainly visible as meteors usually are after dark.

Payne's "Sidereal Messenger" for March, 1883, contains an account of a very brilliant meteor which passed over Central Indiana on the evening of January 3d. From observations at numerous points in Indiana and Illinois it is concluded that the meteor first became visible over Grant county, Indiana, at a height of about 85 miles, that it passed very nearly over Kokomo and Lafayette, its height at the latter place being 53 miles; that its course was south 78° west, and that the length of its visible track was about 140 miles.

About six o'clock on the evening of February 5th a meteor three or four times as large as Venus was seen at several points in Indiana. At Bloomington, when first noticed, it was a few degrees east of south, 18° or 20° above the horizon. It disappeared behind a building, the length of its visible track having been nearly 20°. At Martinsville, Morgan county, it was first seen 5° west of south at an apparent elevation of 18°.

On the 16th of February a large meteoric stone fell, a little before three o'clock in the afternoon, between Cremona and Brescia, sinking more than three feet into the earth. The explosion was heard at a distance of 12 or 13 miles.

At Norwich, Conn., a meteor of great magnitude was seen on the evening of February 27th. Its path was from the northeast to the northwest.

Early on the morning of March 4th an immense fire-ball darted across the heavens at Petersburg, Va., brilliantly illuminating the city. Its course was northwest, and an explosion was heard shortly after its passage.

At the meeting of the Royal Academy of Vienna, on the 14th of June, 1883, Prof. G. von Niessl read an elaborate discussion of the observations of a meteoric fire-ball seen at Brünn and elsewhere, at about $7^h\ 30^m$ on the evening of March 13, 1883. Dr. von Niessl finds the radiant point of this meteor to have been in right ascension 148° 30′ and in south declination 9°. Its mean altitude was about 61 English miles, and its heliocentric velocity was estimated at 50 miles a second. The meteor's orbit about the sun was, therefore, an hyperbola. If it belong, then, to a meteoric cluster, no member of the group can be expected to return. Several other large meteors are known to have appeared at nearly the same epoch.

On the evening of April 14th, at $7^h\ 30^m$ a remarkably fine meteor was seen at Wooster, O. When first noticed, its direction from the point of observation was east-southeast, about 45° above the horizon. It had at least twice the apparent magnitude of Venus, and the line of its motion would have cut the horizon a little north of east. After a brief visible flight as a single body, it suddenly burst into fragments—twenty or more—all brilliant and pursuing the same direction, but more slowly, and falling somewhat below the line which the meteor seemed at first to pursue.

At about $10^h\ 45^m$ on the evening of June 3d, a meteor whose apparent magnitude was several times that of Venus was seen at several points in England. At Ripon its length of path while visible was about 120°, with the middle point due east; direction of motion, parallel to the horizon; elevation, 20°; length of train, 25°. Another large meteor was seen later in the same evening.

A splendid meteor was seen in the evening

twilight, in England, on the 6th of July, at 8^h 50^m. Its course was from northeast to east, at an altitude of 27° when first seen, and 22° when it disappeared. Its motion was slow; the duration of visibility being six or seven seconds. When first seen, its form was globular, but in a second or two it became elongated as though the change were produced by the resistance of the atmosphere. Its color was at first a deep red, afterward a golden hue, and just before disappearance, a brilliant white.

A meteor of intense brilliance was seen at many points in New Zealand at 4^h 46^m P. M., on July 12th. At Ohinitahi it was seen moving slowly from the west in an easterly direction, at an altitude of about 45°. Its appearance was in broad daylight.

A meteoric fire-ball was seen in England at 8^h 25^m on the evening of August 11th. It moved easterly, and its color was a deep amethyst.

A beautiful meteor, considerably brighter than Venus, was seen in different parts of England about ten o'clock on the evening of August 19th. As seen near London by A. J. Mott, "it passed along the eastern sky and vanished over the summit of the Little Orme. The path was northward, nearly horizontal, apparently much foreshortened, for the motion was very slow—not faster than that of balls falling from a rocket; white light, slightly tinged with blue. The meteor divided, and left one large and several smaller portions behind it, all vanishing together." According to Mr. Mott, the meteor did not reach the earth, but after skimming through the upper atmosphere at an altitude of about seventy miles passed onward in its orbit.

A splendid meteor was seen near London, Eng., about nine o'clock on the evening of October 6th. It passed from the northeast, beneath the pole-star, to the west, where it vanished instantaneously without bursting. The nucleus measured at least five minutes of arc in breadth, and was extremely brilliant.

Meteoric Showers.—So far as reported, no meteoric showers of any considerable note occurred during 1883. The numbers seen were small both in January and April; while the showers of August and November almost totally failed. At Great Badow, Eng., H. Corder kept watch on the nights of the 9th, 10th, and 11th of August, with the following results: On the 9th, in two hours and forty-five minutes, 61 Perseids were counted, or 22 an hour. On the 10th, 113 were seen in two hours. On the 11th he watched the whole night, counting 157 Perseids in five hours; the highest number in an hour being 43. The radiant was in 46° R. A., and 56° N. declination.

Telescopic Meteors.—In March, 1883, W. F. Denning, of Bristol, Eng., observed a number of telescopic meteors of the eighth or ninth magnitude. These, as well as those seen during former observations, were generally remarkable for the slowness of their motion—a fact probably due to their distance.

Double Stars.—In the "Sidereal Messenger" for November, 1883, S. W. Burnham has discussed the observations, by himself and others, of the double star Delta Equulei. The principal star of this wide pair is itself an excessively close binary system, the components of which are very nearly equal. Mr. Burnham finds the probable period a little less than eleven years—much shorter than that of any other binary star now known—shorter even than the period of Jupiter. Mr. Burnham remarks that "by reason of the rapid orbital motion of this close pair, and its movement through space, this is undoubtedly the most important and interesting of all the sidereal systems which have been investigated."

On the evening of October 5th, Prof. C. A. Young, of Princeton, discovered the duplicity of a star in right ascension 16^h 29^m $26{\cdot}3^s$, declination N. 58° 00′ 49·9″. The components are of magnitudes 8 and 9½.

The last report of the Astronomer Royal, W. H. M. Christie, contains some interesting results derived from a discussion of the observations of Sirius from 1877 to 1883. A few years since, the spectroscope indicated a rapid recession of this star in the line of sight. A comparison of observations, however, has led to the conclusion that its rate of departure has progressively diminished during the past six years, and that the motion is now on the point of being converted into one of approach—a fact which seems incapable of any explanation except on the theory of orbital motion.

Parallax of Certain Stars.—Prof. Asaph Hall, Director of the Naval Observatory, Washington, D. C., has recently completed a series of observations for determining the annual parallax, and hence the distance, of Alpha Lyræ and 61 Cygni. In his reduction of these observations, Dr. Hall was assisted by Prof. Edgar Frisby. The resulting value of the parallax of the former star is 0·1797″, corresponding to a distance more than a million times greater than that of the sun from the earth. The parallax of 61 Cygni was found to be 0·4783″, and hence its distance is about 380,000 times that of the sun. This value is very nearly identical with that deduced from a series of Dunsink observations extending over a much longer period. The probable error is small in each determination.

At the session of the Astronomical Congress in Vienna, September 14–16, 1883, Dr. Elkin reported the result of some parallax determinations at the Cape of Good Hope by Mr. Gill and himself; particularly of Sirius and Alpha Centauri. The observers found the annual parallax of the former four tenths of a second, and that of the latter three fourths.

Mean Parallax of Stars of the First Magnitude.—Dr. Gylden, of Stockholm, has been lately engaged in a series of observations for finding the annual parallax of the brightest stars. The reduction has not yet been completed, but Dr.

Gylden has reached the conclusion that the mean parallax of stars of the first magnitude is about one tenth of a second. With this result, the average distance of these bodies would be two million times greater than that of the sun—a distance requiring more than thirty-one years for the transmission of their light to the earth.

Distribution of the Variable Stars.—In the "Observatory" for June, 1883, T. E. Espin, Vice-President of the Liverpool Astronomical Society, concludes his interesting paper on the distribution of the variable stars. (See "Annual Cyclopædia" for 1882.) The shortest period in his second class of variables is 135 days; the longest, 570. The variation in brightness is from one to nine magnitudes. The number of stars in relation to different periods is as follows:

Period in days.	Stars.	Period in days.	Stars.
135–170	7	320–370	21
170–220	9	370–420	15
220–270	10	420–470	7
270–320	15	470–520	3

And the number of stars in relation to the variation in magnitude is—

Var. mag.	Stars.	Var. mag.	Stars.
1	3	5	27
2	3	6	25
3	6	7	6
4	14	8 and 9	3

From his examination of these tables Mr. Espin infers:

1. That the number of stars increases with the length of the period.

2. That the number of stars increases with the variation in magnitude.

3. That more than two thirds of the variable stars of class second vary more than four and less than six and a half magnitudes; and,

4. That nearly two thirds of the variable stars of class second have periods between 320 and 420 days.

Mr. Espin concludes as follows: "When, nearly eighteen months ago, I commenced the first of these papers, I believed that all cases of stellar variation might, with the exception of temporary stars, be included in classes first and second. Lately, however, I have become aware of the existence of a new class—stars which have a small fluctuation in magnitude once in several years. The observations of 63 Cygni first led me to this conclusion, and some of the stars suspected of variation now under observation go far to confirm it. For the greater part of the time the light of these stars is constant, but then it alters a magnitude or so; but, after a month or two, it returns to its ordinary magnitude. Many of the stars suspected of variation undoubtedly belong to this class third, and it is obvious that only long and careful determinations of magnitude during many years can determine the periods and variation of such stars.

"Summing up our results, then, we find four classes of variable stars:

"Class I. With short periods and small variation.

"Class II. Long period and great variation.

"Class III. Period of several years and small variation.

"Class IV. Temporary stars."

The "Monthly Notices of the Royal Astronomical Society" for March, 1883, contains a note by the Rev. T. E. Espin, of Birkenhead, Eng., on the variability of Beta Cygni and 63 Cygni. The former is placed in the table of *suspected* variables in "Chambers's Astronomy," and this suspicion has been confirmed by Mr. Espin. The change in brightness is not great—about one magnitude—while the period, though not well ascertained, is undoubtedly several years. The period of 63 Cygni is about five years, and the observed variation is from the sixth to the 4·7 magnitude.

Dr. Peters's Star-Charts.—Dr. C. H. F. Peters, of Hamilton College, N. Y., has recently published the first installment of a very elaborate series of star-charts. They are to contain all stars down to the 14th magnitude, as far as 30 degrees on each side of the equator, throughout the whole of the twenty-four hours. Dr. Peters has himself done all of the observing as well as the draughting, and the charts are published at his own expense, for gratuitous distribution. The construction of these charts has occupied his time and attention for the past twenty years. In his laborious observations, he not only carefully marked the place of every one of the 60,000 stars or more already mapped, but, after receiving the proof, he again compared the positions with the actual condition of the heavens, so as to insure the utmost possible accuracy. It has been while engaged in this work that Dr. Peters has picked up so great a number of small planets; these interesting discoveries being merely incidents connected with his systematic observations for another and, perhaps, more important purpose.

Recent Papers on Astronomy.—The following astronomical papers were read at the Minneapolis meeting of the American Association for the Advancement of Science, August, 1883:

1. The Total Solar Eclipse of May 6, 1883; by Prof. E. S. Holden.
2. Internal Contacts in Transits of Inferior Planets; by Prof. J. R. Eastman.
3. Physical Phenomena on the Planet Jupiter; by Prof. G. W. Hough.
4. Observations of the Total Solar Eclipse of May 6, 1883; by Dr. J. Janssen.
5. Orbit of the Great Comet of 1882; by Prof. Edgar Frisby.
6. Some Observations on Uranus; by Prof. C. A. Young.
7. Observations on the Transit of Venus made at Columbia College, New York city; by Mr. J. K. Rees.

Astronomical Prizes.—At the annual meeting of the Royal Astronomical Society, Feb. 9, 1883, the society's gold medal was awarded to Dr. B. A. Gould, Director of the Observatory at Córdoba, South America. "The work for

which the medal was chiefly awarded may be considered as an extension of Argelander's scale of magnitudes to all the stars which can be seen by a good eye, without instrumental aid, between 10° north declination and the south pole, together with a series of charts exhibiting, on a stereographic projection, the positions of all these stars to the sixth magnitude, and a proposed revision of the boundaries of the southern constellations."

On presenting the medal, the president of the society, E. J. Stone, F. R. S., delivered an address in which the labors of Dr. Gould were briefly reviewed, and concluding as follows: "The 'Uranometria Argentina' is a work of very considerable extent; it has been planned with great care, and executed with the most scrupulous attention to details. It will remain an enduring record of the relative brightness of the southern stars for its epoch; and will be accepted for many years as the chief authority upon questions of their magnitude."

The "Comptes Rendus," vol. xcvi, No. 14, announced that the French Academy of Sciences had awarded the Lalande prize to M. Souillart, Professor in the Faculty of Sciences in Lille, for his investigations into the theory of Jupiter's satellites. A prize of 2,000 francs was given to Dr. W. Schur for his determination of the mass of Jupiter, and of the eccentricities of the orbits of the first and second satellites. The first Valz prize was awarded to Dr. Huggins, of England, chiefly for his spectroscopic determination of the motions of stars in the line of sight. The second Valz prize was given to M. Cruls, director of the observatory at Rio Janeiro.

Lick Observatory.—The dome for the 12-inch equatorial telescope of the Lick Observatory, as well as buildings for the transit and the photo-heliograph, was finished some months since. The instruments have been mounted, and are said to be in excellent working order. The walls of the main building are approaching completion, and arrangements are in progress for the reception of the great 36-inch equatorial. The house for the meridian circle has been begun, and a residence for the director and his assistants will be provided as soon as practicable.

Potsdam Observatory.—Prof. H. C. Vogel, Director of the Astrophysical Observatory of Potsdam, has undertaken the preparation of a complete spectroscopic star-catalogue. The examination of the zone extending from 1° south declination to 20° north has been completed, and the second zone, from 20° to 40° north declination, will soon follow. "To prepare such a catalogue," says Vogel, "is a duty which the present generation owes to posterity. The changes taking place in the stars are of special interest to us, and are of importance to science; and although it may be conjectured that changes in the spectra will show themselves soonest in those stars which have proceeded further in their development, that is, in the red stars, yet this can not be positively affirmed *a priori*. Equally with those wonderful spectra of the red stars, which so enchant the eye of the observer, will changes take place in the course of time in the simple spectra of the white and yellow stars, so that investigations of as large a number of star-spectra as possible, without limiting them to particular classes of stars, are absolutely necessary for future researches."

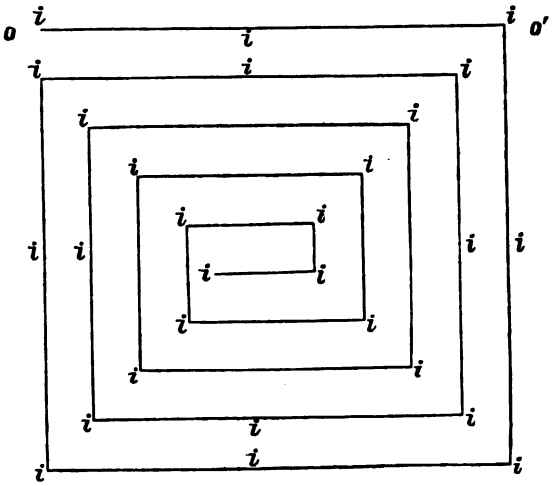
The Annual Report of the Council of the Royal Astronomical Society of London, read February 9, 1883, contains an account of the proceedings of the British observatories, public and private, for the past year. Most of the results, however, have been already given. At the Royal Observatory, Greenwich, arrangements have been made with the committee on solar physics by which the gaps in the Greenwich series of sun-pictures may be filled up by photographs taken in India, thus rendering the series almost perfectly continuous. The Oxford University Observatory has been chiefly directed to the photometry of the brighter stars of the northern hemisphere. At Mr. Huggins's observatory, Upper Tulse Hill, the director has obtained photographs of the sun's corona without an eclipse. "In the longer exposed plates," Dr. Huggins remarks, "the outer corona with its rays of varying length and peculiar rifts is seen; in the plates with a shorter exposure the inner corona, which is more nearly uniform in height, may be seen under suitable illumination. The average heights of the outer and inner coronæ agree closely with the coronæ as seen on the plates taken in Egypt," during the total eclipse of May 16, 1882.

AURORA BOREALIS. The phenomena of the aurora borealis have recently been made the object of several special studies. They have long been regarded as of electrical origin, but nothing was known of the source of the electric currents that produced them, or of the manner of action under which the different kinds of auroral phenomena were manifested. M. de la Rive, a physicist of Geneva, set forth the hypothesis, about 1850, that the earth is charged with positive, and the upper strata of the atmosphere with negative electricity, and that two currents, very strong in the tropical regions, are constantly proceeding toward the polar regions, where they meet through the medium of an air containing infinitesimal vesicles of water and crystals of snow and ice, and consequently having higher conducting powers. He constructed an apparatus by the aid of which, establishing conditions similar to those he regarded as fundamental to his theory, he produced, on a minute scale, luminous phenomena comparable in appearance to those of the aurora.

Mr. Nordenskjöld, the Swedish explorer, when wintering near Bering Strait, in 1878, observed on perfectly favorable nights a faint luminous arc having its culminating point in

the north-northeast. His studies of this phenomenon led him to the conclusion that the earth is provided with a permanent luminous corona, about 400 kilometres from the surface, having its center correspondent with the magnetic pole, and its plane perpendicular to the terrestrial radius at that point. Its light is so feeble that the slightest rival luminous manifestation—the light of the moon, for example, or the presence of moisture or frost in the air—is sufficient to extinguish it. Hence it is not likely to be visible in inhabited lands, and can be seen, even in the polar regions, only in such favorable seasons as the one he enjoyed, which was a season of *minimum* of auroras, and then only rarely.

Prof. Lenström's Experiments in Lapland.—Direct and definite experiments to ascertain the cause of the auroral displays have been made by Prof. Selim Lenström, of the Finnish Meteorological Station at Sodankylä, Lapland. They were directed especially to the variety of the manifestations which takes the form of tiny flames or a phosphorescent luminosity appearing around projecting objects, such as mountain cones and ridges. Prof. Lenström's first experiments were made in 1871, when, with an apparatus similar to the enlarged one with which he produced the same results on a grander scale in 1882, he succeeded in artificially inducing an aurora on the top of the Luosmavnara mountain, 520 feet above the surface of Lake Enare, in Lapland. Toward the end of November, 1882, Prof. Lenström laid out on the summit of Mount Oratunturi (lat. 67° 21′, long. 27° 17′ 32″), about 540 metres above the level of the sea and twelve miles from the observatory at Sodankylä, an instrument which he called an "utströmnings" or "discharging" apparatus. It consisted of a bare copper wire two millimetres in diameter, fitted at every half-metre with points or nibs soldered upon it. The wire was laid out in entwined squares, or in the form of a rectangular helix, in such a way that each inner coil was about a metre and a half from the outer one, and was raised on poles 2½ metres high; and the whole apparatus covered a superficial area of 900 square metres. From the inner end of this wire, an insulated copper wire on poles, with telegraph insulators, led to the foot of the mountain, where a connection was made at the station with a galvanometer, whence another wire led to a zinc disk in the earth. From the day the apparatus was finished, a yellowish-white luminosity appeared almost every night around the summit of the mountain, while nothing of the kind was seen around any of the other mountains. When tested with the spectroscope, the light gave a faintly continuous spectrum from D to F, in which the auroral line $\lambda = 5{,}569$ was observed, with soft variable intensity. The galvanometer gave the deflections, extremely variable in intensity, but never ceasing, of a positive current from the "utströmnings" apparatus to the earth. On another mountain, Pietarintunturi (lat. 68° 32′ 5″, long. 27° 17′ 32″), 950 metres above the sea, a smaller utströmnings apparatus was erected in two parts, so arranged that the inner one covered about 80 square metres, and the outer one 320 square metres. On the 29th of December a single column of aurora, 120 metres in height, appeared above the apparatus. The current, as shown by the galvanometer, was found in the case of this mountain to be "proportionate to the surface-area laid out"; and observations of comparison between the two mountains led to the conclusion that "the electric current from the atmosphere increases



PROFESSOR LENSTRÖM'S UTSTRÖMNINGS APPARATUS. THE COIL OF WIRES.—The insulators are indicated by the letter *i*. The open end of the wire is shown at *o*, while the inner end is connected with the galvanometer.

rapidly with the latitude." Other researches led to the inference that, while the condition of the ground is of some influence, the terrestrial current ceases at a certain latitude. Simultaneous measurements of the angles of elevation were made, at Sodankylä, and at a station four and a half kilometres north of that place, for the purpose of determining the height of the aurora. The measurements made the angle at the southern station three degrees larger than that at the northern one, a result inconsistent with the supposition that the difference in angle represented a parallax of a single object seen from two places; for in that case the larger angle would have been observed at the northern station, and the difference would have been slight. Prof. Lenström came to the conclusion that the two observers did not see the same aurora; and comparing this observation with others, that "measurements of the height of the aurora calculated on those

with a long base north and south, are always erroneous, as the two observers never see the same aurora." Occasionally the characteristic auroral line was revealed in the spectroscope when no aurora was visible to the eye; and the phosphorescent "shine," or diffused luminosity, was observed so regularly as to induce the conclusion that that manifestation is a nearly constant accompaniment of the winter nights of Northern Lapland, and is of auroral origin. From his observations as a whole, Prof. Lenström has drawn the conclusion that "the experiments at Luosmavaara in 1871 and at Oratunturi and Pietarintunturi in 1882 clearly and undeniably prove that the aurora borealis is an electric phenomenon,"; and also prove "that aurora borealis may be produced in nature by a simple contrivance assisting the electric current flowing from the atmosphere to the earth."

Dr. Tromholt's Observations in Finnmarken.—Dr. Sophus Tromholt, of Norway, spent the winter of 1882–'83 at Kautokeino, in North Finnmarken (latitude 69° north, longitude 23° east), making observations in connection with the Norwegian station at Bossekop, about one degree north, and the much more distant Finnish station at Sodankylä, southeast of his post, for the purpose of obtaining the parallax of the aurora. The station is peculiarly favorable, for it is in a zone where the auroral displays attain their maxima, and are nearly constant. He made several attempts to photograph the phenomena, but without success, even the most sensitive English dry plates failing to give a trace of a negative. This he believes to be because of the exceedingly limited substance of light possessed by the glow; a flood of which, illuminating the whole heavens, would not altogether possess a lighting power equal to that of the moon when full. He has confidence in the practicability of his plan for measuring the height of the arc, and estimates it at 150 kilometres; and he believes that its plane is to be found far above that of the clouds. Prof. Lenström, while he admits that the height is variable, is of the opinion that it has been greatly overestimated. Dr. Tromholt expected to spend the winter of 1883–'84 in Northern Iceland, experimenting with Prof. Lenström's "utströmnings" apparatus.

AUSTRALIA AND POLYNESIA. Consolidation.—The movement for the consolidation of the Australasian colonies into a federal union, on the lines of the confederation of British North America, is gaining ground in Australia, and receives the strongest encouragement from the present Government of Great Britain. The tendency toward union became apparent in 1883 in different acts of co-operation and manifestations of a sense of common interests. A second conference to discuss the question to what extent confederation is practicable at the present time met at Sydney in November. The legislatures of the different colonies were represented by delegates selected from their number. The conference was appointed at the suggestion of the Victorian Parliament and Government. It arrived at no practical conclusions on the main question. The question of the annexation of the Melanesian Islands gives a new import to the movement. All the colonies of Australia, through resolutions of their legislatures during the year, called upon the Imperial Government to occupy those islands to prevent their falling into the hands of other powers. The British Government holds out the hope that their wishes will be gratified as soon as they shall combine in a strong political union, and show that they can, at some future time, take into their care and governance the new possessions, and meanwhile bear their share of the cost of the occupation, administration, and defense of these vast regions.

Postal Union.—A conference of delegates from all the colonies, except New Zealand, which refused to join, was held at Sydney, for the purpose of considering the question of adopting the arrangements of the Universal Postal Union. The meeting was called at the instance of Mr. Fawcett, the English Postmaster-General, who wished to have the votes of Australian delegates at the Lisbon conference in 1884, in order to help the interests of the British steamship lines. The Postal Union expects to reduce the maximum rate of ocean postage to ten cents a letter. The Sydney meeting took action in conformity with Mr. Fawcett's views, and appointed commissioners to attend the congress. The effect of the proposed arrangements will be to give the bulk of the business of carrying Australian mails to the Peninsular and Oriental Steamship Company, diverting that portion which is carried across the United States, and entailing losses on the colonies which have mail contracts with the Pacific Mail and other steamship companies. Such losses the colonies agreed to share with one another.

Defenses.—The various colonies are proceeding with the organization of a militia, and have already spent large sums in a system of coast defense fulfilling the latest requirements of naval science. The approaches to the principal ports are guarded by batteries mounted with modern artillery and by sunken torpedoes. A considerable fleet of powerful gunboats and torpedo-boats of improved construction is building for the colonial governments in England. Victoria ordered two gunboats, one of 530 tons' displacement and a speed of 12 knots, to carry a 25-ton gun, two smaller guns in the stern, and improved Gatling guns; the other, with a displacement of 850 tons and a speed of 10 knots, to be similarly armed, with a lighter gun in the bow. South Australia is having built a vessel which is rather a cruiser than a gunboat, with a displacement of 900 tons and a speed of 14 knots, to be armed with an 8-inch gun in the bow, four 6-inch broadside guns, another in the stern, and five

machine-guns. Queensland ordered two gunboats identical with the smaller Victorian vessel. Victoria will have three torpedo-boats, New Zealand four, Queensland two, and Tasmania one. One of the Victorian boats is the largest yet constructed, except one built for the Russian Government, being 118 feet long, with a displacement of 58½ tons. It was launched in 1883, and is armed with four large Whitehead torpedoes and two Hodgkiss machine-guns. The smaller boats will be armed with McEvoy spar torpedoes, or Whitehead projectile torpedoes.

Annexation Schemes.—The impulse to colonial extension observed in European Continental nations, the result chiefly of their protectionist policy, and excessive expansion of industrial activity, diverted the movement for Australian confederation from its original purpose in 1883. The prospect of a further "division of the world" became more imminent after the British occupation of Egypt. France began the movement by casting about among the unclaimed regions of the earth for compensation. The Australian colonists, who at this time started embryonic military and naval establishments, and began to form a conception of the power of union, determined to take a stand against the establishment of any foreign colonies in Australasia, and to claim for Australia pre-emptive rights to all the islands of the Pacific. In the absence of a federal union, the colonies began individually to agitate for the annexation of the more important islands. European nations have for years debated over the question of establishing colonial plantations in Australasia. The party in Germany in favor of colonizing has directed attention by turns to every unoccupied group in Australasia, and nearly every other uncivilized region in the world. German commerce has been extending in the neutral markets, and the Government has given some tentative aid and protection in Polynesia; but the German Government is more cautious in this respect than any other, and has resisted every temptation to establish a dominion over uncivilized races. Italy has discussed various fields for colonizing, and claims a sort of priority in New Guinea, by virtue of the explorations of Beccari and D'Albertis. France, as the only active colonizing power, was the most dreaded by the Australians, and is the most firmly seated in Australasia, possessing New Caledonia, and having interests in the New Hebrides. In 1878 France and Great Britain entered into reciprocal engagements not to annex the New Hebrides. Since then a private company, composed of colonists of New Caledonia, has obtained trading concessions on those islands, and acquired some of the smaller ones by purchase. The colonists of New South Wales urged the home Government to acquire possession of the Solomon Islands and the New Hebrides, in order to prevent them from becoming French penal colonies. In New Zealand the old agitation for the annexation of the Friendly and Navigator groups was renewed. But the oligarchy of Queensland, who, enriched by colored labor, consider it their vocation to rule over native races, showed the most impatient and aggressive spirit. They conceived the ambitious design of annexing to their little colony the great island of Papua, with its vast population and inexhaustible natural wealth. To establish a dominion over Papua, and derive any material benefit from the possession, would not only necessitate cruel oppression, which the mother-country would not permit, but would cost a long struggle, which would require considerable military resources. The Papuans are a brave and vigorous race, who live in large villages, cultivate the soil, and hold the land by fixed proprietary titles.

In May the British Foreign Office received a dispatch from the Governor of Queensland, saying that the Queensland Government, in order to prevent other powers from occupying Papua, had taken formal possession of that island in the name of the Queen. The home authorities, who had had knowledge of this purpose since February, would not allow their hand to be forced by the Queenslanders. They repudiated the proceeding of the Governor, which could only be consummated by the power of Great Britain. Yet Lord Derby asserted the pre-emptive claim of England to Papua, by declaring that they should "not view it as a friendly act if any other country attempted to make a settlement on that coast." They obtained assurances that the French Government had no designs on the island. The British Government would go no further than to extend its jurisdiction over the southern coast of New Guinea, between which and Australia a considerable trade had sprung up, by giving the High Commissioner of Feejee power to enforce discipline over British subjects.

The western half of Papua was claimed by Holland, by virtue of a cession from the Sultan of Tidore, in the Moluccas, a title like that of Portugal to the Congo Basin, which Great Britain might acknowledge, if expedient, and yet at any future time set aside. On the eastern end Lieut. Yule had raised the British flag in 1848, as did Capt. Moresby on the islands off the east coast in 1873.

The annexation of Papua by Great Britain had been mooted about five years before, when gold was discovered at Port Moresby on the south coast. There was a rush of gold-diggers to the spot, but the new field was not as productive as was supposed, and the hostility of the natives made it dangerous for the miners to remain and explore further. The Torres Strait, which separates Papua from the northern point of Queensland, is only 80 miles wide; but Brisbane, the capital of the colony, is 1,000 miles from the coast of Papua. The island, which Sir Thomas Mollwraith, the head of the Queensland Government, and Sir Arthur Kennedy, the Governor, attempted to add to the

colony, which has already five square miles of land to every male inhabitant, by a proclamation issued without consulting the home authorities, contains 312,000 square miles, and a population of several millions. The suspicion was generally entertained, and was intimated in Lord Derby's sharp reply, that the colonists wished to obtain an unlimited supply of black labor, without the restraint which the imperial authorities put upon the cruelties incident to that traffic. The main business of the British squadron on the Australian station is to police the seas, so as to keep in check this slaving trade. The island of Papua has never been explored, except along the coast, although D'Albertis, Miklucho-Maklay, and Lawes have penetrated a short distance inland. Powell, who lived eight years on the coast, considers it the richest island in the world in natural resources. Products which are obtainable in large quantities, and some of which are already objects of commerce, are tortoise-shells, pearl-shells, ivory-nuts, gums, sandal-wood, camphor, sago, arrowroot, ginger, sugar-cane, ebony, and bird-of-paradise plumes. Tobacco is produced in large quantities. Copper, tin, and gold have been found, but of the mineral resources of the island but little is known.

The British Colonial Office, after disposing of the presumptuous act of the Governor of Queensland, had a wider scheme of colonial extension presented to its attention by agents of all the colonies. They proposed the annexation of Papua, the New Hebrides, the Solomon Islands, and the islands in the neighborhood of Papua, and of the little-known islands to the north and northeast of Papua, comprising all together an area of over 300,000 square miles. The hope which Lord Derby held out to the colonies was that they should unite in a confederation and help to carry out their annexation schemes with their own powers. The conference of delegates from the legislatures of the different colonies which was held at Sydney in November to consider the question of confederation turned its attention to that of annexing the South Sea islands. The conference resolved that it would be highly injurious to the interests of Australia and the empire to have any foreign power acquire dominions in the southern Pacific, and therefore called upon England to take the initiative in taking possession of that part of Papua not claimed by Holland, and the neighboring islands, and to make arrangements with France to preclude that power from making conquests in these regions, and to induce it to relinquish the New Hebrides to British possession. The conference promised that Australia would bear its fair share in the cost of these enterprises.

Victoria was constituted a self-governing colony in 1854. The Legislative Council, of 86 members, is elective by a limited franchise, fixed by the law of 1881 at £10 annual ratable value of freehold property or the occupancy of rented or leased property rated at £25 annual value for all except professional men. The term of the members, who must have property yielding £100 income, is nine years, one third retiring every three years. The members of the Legislative Assembly are elected for three years by universal suffrage. The bill of 1881 increased the electorate for the Legislative Council from 33,105 to 110,000. The electors for the Assembly number 176,022.

The Governor, who was appointed Dec. 10, 1878, and assumed office Feb. 27, 1879, is the Hon. George Augustus C. Phipps, second Marquis of Normanby, who has filled similar posts in Nova Scotia, Queensland, and New Zealand.

The area of Victoria is 87,884 square miles. The population on the 3d of April, 1881, was 862,346—452,083 males and 410,263 females—including 12,128 Chinese and 780 aborigines. The Chinese and natives have decreased greatly in the past ten years. About half of the total population live in towns. Those containing over 10,000 inhabitants in 1881 were as follow: Melbourne, 65,859 (including suburbs, 282,981); Sandhurst, 28,513; Emerald Hill, 25,374; Collingwood, 23,829; Richmond, 23,405; Fitzroy, 23,118; Ballarat, 22,411; Prahran, 21,168; Hotham, 17,839; Wahalla, 16,147; Ballarat East, 14,849; St. Kilda, 11,654. The population of Victoria formerly increased rapidly by immigration, but owing to the withdrawal of the system of assisted immigration and other causes the influx has moderated greatly.

The total imports in 1881 amounted to £16,718,521, the exports to £16,252,103. The chief imports are woolen manufactures, livestock, sugar, cotton, clothing, and tea. More or less grain is imported each year. The two staple articles, wool and gold, make the principal part of the exports. There were exported in 1881, 98,467,369 pounds of wool, valued at £5,450,029, and gold bullion of the value of £3,674,104. The quantity of gold produced, which averaged 2,000,000 ounces per annum in the first ten years after the discovery of the mines in 1851, and fell to 1,500,000 ounces in 1867, and below 1,000,000 in 1876, slightly increased with the application of the diamond-drill after 1878, while the number of miners employed has decreased in recent years. The number at the beginning of 1882 was 38,136, including 7,941 Chinamen. The value of the total quantity of gold produced since 1851 is estimated at £201,674,118.

The number of acres under cultivation in 1882 was 1,997,943. There were 4,919 acres of vineyards. In March, 1881, the census of live-stock gave 275,516 horses, 1,286,267 horned cattle, 10,360,285 sheep, and 241,936 pigs.

The mileage of railroads open to traffic at the close of 1881 was 1,214 miles, all belonging to the state. There were under construction 450 miles more. The system has been built in great part since 1875. The total cost was £18,603,830, the cost per mile £15,324;

net revenue, 4·04 per cent.; borrowed capital, £17,609,207, on which the interest charge is £918,218; gross earnings in 1881, £1,665,209; expenditure, £913,572; profits, £751,637. Two fifths of the receipts were from passenger and three fifths from freight traffic.

The number of miles of telegraph lines completed at the end of 1881 was 3,349; the number of messages, 1,281,749. Since 1870 the rate has been 1*s.* for ten words and 1*d.* for each additional word.

The revenue of the colony in 1881 was £5,114,460, the expenditure £5,102,470. The receipts for the year ending June 30, 1882, were £5,770,000, the expenditure £5,690,000. The public debt was £22,944,602 in 1881. In June, 1883, the total liabilities amounted to about £26,000,000. The net revenue from the railways and water-works for which the debt was incurred is stated by Mr. James Service, the Colonial Treasurer and Premier, to be sufficient to pay 4 per cent. on the total amount.

The O'Loghlen Ministry, which had already lost its popularity, was defeated at a general election in February in consequence of an unsuccessful financial operation in London. The ministry attempted to convert £3,800,000 of 6 per cent. bonds, falling due in October, 1883, into a new loan at 4 per cent. The books for a loan of £4,000,000 were accordingly opened in London in January. In insisting upon issuing the bonds only at par, the Premier came into collision with the English magnates of finance. A mere fraction of the stock was taken. The credit of Victoria had suffered from the frequent comparisons made between it and the more rapidly growing free-trade colony of New South Wales, and through the unpopularity in England of its protectionist policy. The momentary financial embarrassments of the Government, which had compelled it to obtain advances of £2,000,000, gave a colorable ground for the rejection of the loan. The Victorians were more astonished than discouraged, and attributed the result entirely to the blunders of the Ministry. The Cabinet preferred to make an appeal to the country rather than be voted out of office by the Parliament, which was to meet Feb. 13th. With the consent of the Marquis of Normanby a new election was ordered. It took place in the latter part of February. Only 14 Ministerialists were returned; Sir Bryan O'Loghlen himself lost his seat. The Liberal Constitutionalist party, led by James Service, elected 38 members, and the Radical or Democratic party of Graham Berry, 32. A coalition ministry was formed, March 7th, as follows: Hon. James Service, Premier, Colonial Treasurer, and Minister of Public Instruction; Hon. Graham Berry, Chief Secretary; Hon. George Briscoe Kerferd, Attorney-General; Hon. Albert Lee Tucker, Minister of Lands, Agriculture, etc.; Hon. Duncan Gillies, Commissioner of Railways and Roads; Hon. Alfred Deakin, Commissioner of Public Works; Hon. J. F. Levien, Minister of Mines; Hon. George D. Langridge, Commissioner of Trade and Customs; Hon. W. Anderson, Minister of Justice; Hon. Mr. Sargood, without portfolio. The financial statement made April 4th charged the former Minister of Railroads with imprudence in entering into contracts for rails and rolling-stock to be manufactured in the colony beyond the amounts sanctioned by Parliament, causing the estimated expenditures to be exceeded. The loan of £4,000,000 was placed by the new Government, by acceding to the demands of the London bankers, at only a slight discount, the Government pledging itself to borrow not more than £2,000,000 additional during that year. The finances of the colony were described by Mr. Service to be in no critical condition, though the sales of public lands had been declining for two or three years; but the maturity of the old debt, which would require £3,000,000 more to be raised in 1884 and £4,000,000 in 1885, puts a stop temporarily to large expenditures on public works. The legislative programme of the new ministry embraced the reform of the civil service by delivering it from political patronage and intrusting official appointments to a permanent board; the creation of a board of commissioners to manage the state railroads; the extension of the system of irrigation and water conservation by local authorities; and the introduction of pastoral leases to apply only to the "mallee scrub" lands of inferior quality which are overrun with rabbits, the leases for twenty years being made conditional on the tenants' exterminating noxious animals.

The tariff controversy was continued during the year, and the Commission of Inquiry collected evidence from all classes. Invidious comparisons with the rapid growth of New South Wales are not considered just by the Victorians, as their colony has no unlimited sheep pasturage to invite immigration. The flocks of Victoria have scarcely increased since 1873, while those of New South Wales have nearly doubled. Though the population of Victoria increases slowly, the growth in wealth is steady, and the progress is marked in agriculture and cattle-raising. The herds increased from 883,763 head in 1873, to 1,286,267 in 1881. The protected industries do not show the same healthy growth, and the rural community is becoming more and more dissatisfied with the protective policy, which favors the working-classes of the towns at its expense.

New South Wales, the oldest Australian colony, originally a penal settlement, and formerly including the present colonies of South Australia, Victoria, and Queensland, obtained responsible government in 1855. The Legislative Council consists of 21 or more members, nominated by the Crown. The Legislative Assembly consists of 108 members, elected by 72 constituencies by universal suffrage and secret ballot. The Governor is Lord Augustus W. F. S. Loftus, born in 1818, formerly British embassador

to Austria, Germany, and Russia, who entered upon the office Aug. 4, 1879. The ministry is composed as follows: Colonial Secretary and Premier, Hon. Alexander Stuart; Treasurer, Hon. George Dibbs; Minister of Justice, Hon. Henry Cohen; Minister of Public Instruction, Hon. George H. Reed; Attorney-General, Hon. W. Bede Dalley; Minister of Public Works, Hon. Henry Copeland; Postmaster-General, Hon. F. A. Wright, Minister of Mines, Hon. Robert P. Abbott; Secretary for Lands, Hon. James Squire Farnell; Vice-President of the Council, Hon. Sir Patrick Jennings.

The area is 323,437 square miles. The population in 1881 was 751,468, of whom 411,149 were males and 340,319 females. The immigration in the seven years ending with 1880 averaged 10,000. The birth-rate is high. The population of Sydney, the capital, in 1881, was 220,427, having increased 66·25 per cent. in ten years.

There entered the port of Sydney, in 1881, 2,254 vessels, of the aggregate tonnage 1,456,-239 tons. The tonnage of the port of Newcastle was almost as large.

The total exports of New South Wales in 1881 amounted to £16,049,503, the imports to £17,409,326, both larger than in any previous year. Over one third of the trade is with Great Britain; the rest is mainly with the other colonies. The leading export article is wool, of which 87,739,914 pounds, valued at £5,304,576, were shipped to England in 1881. The chief exports next in order are tin, copper, tallow, and preserved meat.

In March, 1882, the colony had 33,062,854 sheep, 2,180,896 cattle, 346,931 horses, and 213,916 swine. The total area under cultivation was 645,068 acres, about one half of which was under wheat and maize. New South Wales is richer than the other colonies in coal, of which 1,775,224 tons were raised in 1881. The gold production in 1881 was £550,111, about the average of the last five years, having suddenly fallen off from £2,097,740 in 1875, and £1,589,854 in 1876.

In 1881 there were 995 miles of railroad in operation, and 487 miles under construction. Sydney has 11¼ miles of steam tramways, a system which is to be extended to some of the neighboring towns. The Colonial Treasurer asserts that though the railroads of New South Wales were laid out and are rapidly extended for the purpose of developing the country, and although the Government fixes the tariff lower than in the other colonies for that object, yet they return a higher rate of profit on the capital invested than any other railroads in the world.

The telegraph lines completed at the end of 1881 were 14,278 miles, constructed at a cost of £492,211.

The public revenue of New South Wales in 1881 amounted to £6,707,963, the expenditure to £5,890,579. The estimated revenue for 1882 was £6,240,000, the expenditure £5,-960,000. The actual revenue was £7,062,873, and showed a surplus of £1,846,000. The revenue for 1883 was estimated at £6,819,200, the expenditure at £6,483,000.

The public debt, increased by an issue of £2,000,000, in 1882, was at the end of that year £18,924,019. In 1882–'83 loans to the amount of £3,000,000 were placed in London. The sums expended by the colony on railroad and telegraph construction amounted at the end of September, 1882, to £17,078,654. The revenue from these public works exceeds the interest on the public debt. The railroad system could be sold out to capitalists, according to the calculation of Mr. Dibbs, for £25,000,000. Besides the railroads and the public lands, the assets of the colony include £12,000,000 owing to it from conditional purchasers of land.

The financial policy of the new Cabinet, which came into office in January, 1883, is to restrict sales of land as much as possible pending the new land legislation, thus reducing the surplus revenue. A revision of the tariff is in prospect after the land question is settled.

The Parliament of New South Wales was suddenly and unexpectedly dissolved in November, 1882. The Government had placed before Parliament a land bill, which was, with slight amendments, a consolidation of the various land laws embodying the system first introduced by Sir John Robertson in 1861. The Robertson policy was hailed at the time it was adopted as a triumph of democratic principles. It allows the free selection of lands by actual settlers anywhere upon the tracts occupied on pastoral leases as sheep-runs by "squatters," or Government leaseholders. This provision has not prevented the building up of huge pastoral estates in accordance with the natural and economical conditions which prevail in Australia, nor promoted to any extent the immigration of settlers and the agricultural development of the country. But it depreciated the value of the public lands and prevented the Government from obtaining the best value on leases or sales. It has also brought about economical conditions which are regarded with grave apprehensions by the younger statesmen. The squatters have been impelled by reason of the insecurity of their tenure to strain their credit in order to obtain the freehold of their runs. The portions which they can not borrow the means to buy at auction they endeavor to keep out of the hands of actual settlers by inducing dependents and dummies to free-select the desirable sections. Illegal and violent means are often resorted to for the purpose of fighting away interloping settlers. The consequence of this state of things is, the creation of a class of large landholders more rapidly than if the Robertson law did not exist, and of landholders whose property is deeply mortgaged at heavy interest to absentee capitalists. Sir Henry Parkes, the Premier, agreed to a dissolution, although the Parliament had but one year to run, and the adoption of the tri-

ennial period was intended to prevent avoidable dissolutions, and although Sir Henry Robertson was alone responsible for pressing the measure, and the country was with the coalition ministry on every other question. The party opposed to the perpetuation of the existing land system proposed to limit the right of free selection on unsurveyed lands and allow a large portion of the colony to remain under pastoral leases, but without giving to squatters the power of purchase. In the elections in December, 1882, Mr. Watson, the Treasurer; Dr. Kenwick, the Minister of Mines; and Mr. Foster, the Minister of Justice, lost their seats; Sir Henry Robertson was barely elected, and Sir Henry Parkes was defeated in his own district, and took the place of a candidate who retired in his favor. A new ministry was formed by Mr. Alexander Stuart.

A Commission of Inquiry reported in May upon the facts governing the land question. The territory of New South Wales is divisible into three parts. The old settled portion, consisting mainly of the land lying between the sea and the Blue Mountains, contains 500,000 inhabitants, including 220,000 in Sydney and 117,000 in other towns, and has an area of 26,000,000 acres, of which 9,000,000 have been alienated, consisting of all the best lands. This land was not occupied in pastoral squatting leases, but in the form of freeholds of moderate size, with grazing rights over an additional space. The result is stated to be a beneficial division of the land and settlement by families, with few estates exceeding 5,000 acres. The second division, comprising the nearer inland districts as far as the Barwon river and the confluence of the Murrumbidgee and the Murray, on the frontier of Victoria, is the largest of the three, and contains the finest lands, such as the rich plains of the Clarence and Macleay rivers, and the valuable grazing districts of New England, Liverpool Plains, Gwydir, Dubbo, Deniliquin, the Upper Murray, Monaro, and Twofold Bay. It has a total area of 86,000,000 acres, and a population of 223,560 souls, of whom 88,178 live in the towns. This region was settled under the land laws of 1862. The class-conflicts which arose between the squatters and the free-selectors are said to have wasted the resources of the settlers and embittered social life. The quantity of land which has passed into private ownership is 25,156,000 acres. In the Deniliquin and Wagga Wagga districts only one eighth or less of the nominal owners remain on the land, much more than half the farms ostensibly free-selected for agricultural purposes having been taken up at the procuration of lessees of pastoral runs. The third division contains the broad plains, well adapted to pastoral purposes, which are traversed by the Darling river. This region contains but few inhabitants as yet. Very few sales have been made to settlers, and these are mostly of the same fictitious character as in the second division. The effect of the land laws, according to the commission, has been not only to divide the rural community into two hostile camps, and to waste the lives and fortunes of numbers of persons in litigation, but "the personal virtues of veracity and honorable dealing have been tarnished by the daily habit of intrigue, by the practice of evading the law, and by declarations universally made in defiance of fact: self-interest has created a laxity of conscience in these matters; the stain attaches to men of all classes and degrees."

The revision of the land laws inaugurated by the Stuart ministry proceeds on the principle of restricting the right of free selection to a limited portion of each pastoral leasehold and giving the squatter a more secure tenure of the remainder. Under this system the Government expects to exact a considerably higher rent from the squatters.

South Australia was invested with representative government in 1856. The Legislative Council consists of 24 members elected from four districts, one third of whom retire every three years. The electoral qualifications are the possession of real estate of £50 value or leased premises of £20 annual value. The House of Assembly, elected by universal suffrage, consists of 46 members. The Governor of South Australia is Sir William C. T. Robinson, previously Governor of several minor colonies, appointed in November, 1882. The Executive Council is composed as follows: Chief Secretary, Hon. J. Cox Bray; Attorney-General, Hon. John W. Downer; Chief-Justice, Hon. S. J. Way; Treasurer, Hon. Lavington Glyde; Commissioner of Crown Lands, Hon. Alfred Catt; Commissioner of Public Works, Hon. James Garden Ramsey; Minister of Education, Hon. John Langdon Parsons.

The estimated area of South Australia is 903,425 square miles. The population on April 3, 1881, was 279,865, of whom 149,530 were males and 130,335 females, including 2,734 Chinese, but exclusive of the aborigines, numbering 6,346. The population of Adelaide, the capital, was 38,479 without the suburbs.

South Australia is the leading agricultural colony. The area under cultivation increased from 739,714 acres in 1866 to 1,444,586 in 1876, and 2,613,903 in 1882, of which 1,768,781 acres were sown to wheat. The live-stock census showed 159,678 horses, 314,918 horned cattle, and 6,810,856 sheep.

The total exports in 1882 amounted to about £5,280,000, the imports to £5,890,000. The staple articles of export are wool, wheat, and flour, and copper-ore. The wool exports were valued in 1881 at £2,345,231. The grain exports were of the value of £82,092 in 1876; £514,176 in 1877; £514,176 in 1878; £464,049 in 1879; £1,025,077 in 1880; and £496,741 in 1881. The exports of copper in 1881 amounted to £179,731. Besides copper there exist iron-ores of great richness.

There were 945 miles of railroad in opera-

tion in July, 1882, and 174 miles in the course of construction. The length of telegraph lines completed at the end of 1881 was 4,946 miles.

An intercolonial railroad is projected which will connect Adelaide with Melbourne. The Murray Bridge or Callington route, chosen by the Government, is criticised by many. The large falling off in the grain exports has had a depressing effect on the colony, and has affected the revenue. A proposed property tax of a penny in the pound is strongly opposed. The land law has been amended so as to allow purchasers on deferred payments to surrender their holdings, with remission of the remaining installments.

Queensland was separated from New South Wales and endowed with responsible government in 1859. The Legislative Council consists of 30 life-members nominated by the Crown, the Legislative Assembly of 55 members elected for five years. Every tax-payer has a vote, and every property-owner or leaseholder one in the district in which the property is situated as well as in the district in which he resides.

The Governor of Queensland is Sir Anthony Musgrove, formerly Governor of Jamaica, who was appointed in 1883. The late Governor, Sir Arthur Edward Kennedy, who held the office six years, died after his recall, on the voyage to England. The Ministry is composed as follows: Colonial Secretary and Premier, Hon. Sir Thomas McIlwraith; Colonial Treasurer, Hon. A. Archer; Secretary for Public Works, Hon. John M. McCrossan; Secretary for Public Lands, Hon. Patrick Perkins; Postmaster-General, Hon. Boyd Dunlop Morehead.

The area of Queensland is 668,224 square miles. The coast-line measures 2,250 miles. The population in 1881 was 213,525, divided into 125,325 males and 88,200 females, including 11,229 Chinese engaged in the gold-mines and 6,348 Polynesians, but not including the aborigines, estimated at 20,585. The capital, Brisbane, had 31,109 inhabitants. The immigration from the United Kingdom declined after the introduction of Chinese and Polynesian laborers.

The total imports in 1881 amounted to £3,601,906, the exports to £3,289,253. The leading article of export is wool, which is shipped to England to the value of over £800,000 a year. Preserved meat and tallow are also exported. The cultivation of cotton and sugar-cane, recently introduced, is growing rapidly. The total area under cultivation in the beginning of 1883 was 128,875 acres, of which 28,026 acres were planted to sugar-cane. The live-stock at the beginning of 1882 numbered 194,217 horses, 3,618,513 cattle, 8,292,883 sheep, and 56,438 hogs. There are several coal-mines worked in the colony. The value of the gold product declined from £1,306,431 in 1877, ten years after the discovery of gold, to £925,012 in 1881.

At the beginning of 1882 there were 800 miles of railroad in operation, and 200 miles in process of construction. A trans-Australian line from Bisbane to Port Darwin was begun in 1882. The telegraph mileage was 6,279.

In Queensland, besides the appropriation of the land by monopolists, there exists the form of slavery known as "indentured labor," an evil now found in no other Australian colony. The culture of sugar in the sub-tropical portion of the colony is so profitable that free white settlers who penetrate beyond the occupied districts to raise the cane and evaporate the juice are better repaid than in any other occupation now open in Australia. Yet the laws allowing bound labor are kept on the statute-book by the influence of the large planters, on the plea that the product can only be cultivated by colored labor, and that colored labor can only be made effective by special sanctions. Until recently, veritable slavers supplied the labor market by enticing away or capturing in violent raids the natives of the Polynesian islands. But an outcry was made in England which led to a parliamentary inquiry. The revelations of these piratical raids and of the cruelties and frauds practiced upon the Kanakas in Queensland, which resulted in the appointment of a commission, consisting of Sir A. Gordon and the two naval commanders on the station, to consider means of punishing crimes committed on the Pacific islands by British subjects, discouraged further importations of Pacific-islanders. The planters then turned to Ceylon and Southern India. Cingalese and Bengalee coolies are brought by speculators, to whom they have, or are supposed to have, contracted their labor for a term of years, and are by them transferred to the sugar-planters. The employment of colored labor is restricted by statute to the sugar-estates on the northern coast. The term of service is limited to three years, after which they have to be sent back at the expense of their employers. The white laborers, who through a low franchise exert great political power, and to please whom a tax of £10 a head is imposed on Chinese immigrants, are in favor of restricting colored labor. The laborers are subjected to official inspection. Nevertheless, as the native races are not permitted to testify in the courts, they are not protected against any form of cruelty or injustice. According to a statistical statement cited by Lord Lamington, there were imported into Queensland, within a comparatively few years, the large number of 17,329 black laborers.

Tasmania, constituted a self-governing colony in 1871, has two Houses of Parliament, elected by suffrage limited by property qualifications of different degrees. The Governor is Maj.-Gen. Sir G. Cumine Strahan, transferred from the governorship of the Windward Islands in August, 1880. The head of the responsible ministry is Hon. William R. Giblin. The revenue in 1881 was £502,417; expenditure, £466,318; estimated revenue in 1883, £530,000; ex-

penditure, £457,242. The public debt, raised for the construction of public works, was on Dec. 31, 1881, £2,008,000, bearing interest at 6 per cent.

The area is estimated at 26,215 square miles, or 16,778,000 acres, including the adjacent islands. The population in 1881 was 115,705, of whom 61,162 were males and 54,543 females. The increase in eleven years was but 16,377. The aborigines are entirely extinct. The exports in 1881 amounted to £1,555,576, the imports to £1,438,524. The chief articles of export are wool and tin, and more recently gold. The valuable deposits of tin and iron and the discovery of gold have given a slight impetus to enterprise and immigration, but in agriculture the colony has receded; barley, the quality of which is superior, is the only crop except potatoes that has increased.

New Zealand was organized in six provinces in 1852, and united under a Governor and General Assembly in 1875. The members of the Legislative Council are appointed by the Crown for life. The House of Representatives consists of 95 members elected by household suffrage. The Maoris are represented by four members elected by themselves.

The Governor is Maj.-Gen. Sir William Francis Drummond Jervois, transferred from South Australia in November, 1882.

The Premier, Mr. Whittaker, resigned the office in 1883—not, however, for political reasons. He was succeeded by Maj. Atkinson, the Colonial Treasurer.

The area of New Zealand is estimated at 105,342 square miles. Two thirds of the total surface is good agricultural or grazing land. The census of 1881 gave the total population as 534,032, including the Maoris, who numbered 44,099, divided into 24,370 males and 19,729 females; of the rest, 269,605 were males and 220,328 females. The Chinese numbered 5,004. The towns with more than 10,000 inhabitants were Dunedin (24,372—with suburbs, 48,302), Auckland (16,664—with suburbs, 39,966), Wellington (20,563), and Christchurch (15,213—with suburbs, 30,719). The population of New Zealand is increasing faster than that of any of the Australian colonies, both by immigration and by a high birth-rate.

The total imports in 1881 amounted to £7,457,045, the exports to £6,060,866. The quantity of wool exported was 59,368,832 pounds; value, £3,477,993. Grain and flour were shipped to Great Britain in 1881 to the value of £913,581. Gum and preserved meat are, except gold, the next most considerable articles of export. There were in April, 1881, in the colony 161,736 horses, 698,637 cattle, 12,985,085 sheep, and large numbers of hogs and poultry. The New Zealand gold-fields, discovered in 1857, and yielding at the height of their production in 1877, £1,496,080, produced in 1881, £996,867.

The railway system of New Zealand was begun in 1872. In 1882 there were 875 miles completed on the South Island and 458 on the North Island. When completed, the system is to have 2,075 miles of line, and will cost £16,000,000. The capital already expended in 1883 was about £11,500,000. The railroads in the South Island already return 3 per cent. on the outlay, those in the North Island 1¾ per cent. There were 3,824 miles of telegraph open to traffic in March, 1882.

The revenues of the Government are derived partly from customs receipts, etc., and partly from sales of public lands, depasturing licenses, export duties on gold, and mining licenses. The latter category, called the territorial revenue, was, down to 1879, nearly as productive as the ordinary sources of revenue. In 1882 the ordinary revenue amounted to £3,488,170, the territorial revenue to £317,063; total revenue, £3,805,233. The total expenditure was £3,590,233. The estimated revenue for the year ending March 31, 1883, is £3,393,500; expenditure, £3,478,639. The public debt amounted in 1882 to £29,946,711. At the end of March, 1883, it was £30,357,000, not deducting the sinking fund, amounting to £2,571,000. Notwithstanding the magnitude of its liabilities, the colony obtained a loan of £1,000,000 in London in 1883 at 4 per cent. at a very slight discount. This state of the credit allows the considerable floating debt to be converted at a reduced interest.

The Government has introduced proposals in the Legislature to change the constitution of the Legislative Council, making it an elective body, as in the older colonies, instead of the members being appointed for life by the Governor.

The difficulties with the Maoris in the western part of the North Island have ceased. The natives have abandoned their attitude of exclusion and isolation, and given pledges of peaceful submission to the laws. The pressure of public opinion in England has put some restraint upon the oppressive and confiscatory instincts of the colonists. Improvements are being introduced in the Maori country, and intercourse between the natives and the white settlers who have penetrated there has a beneficial influence on both races. The harbor of Kawhia, after being closed for twenty years, was opened again without opposition from the natives. A government township was laid out at that place. Surveys for roads and railways have extended into parts of the country where formerly no European was suffered to travel.

AUSTRIA-HUNGARY, an empire constituted since 1867 as a dual monarchy. The Cisleithan Kingdom, or Austria, and the Transleithan, or Hungary, are connected by a common army, navy, and diplomacy, and in the person of the hereditary sovereign. The house of Hapsburg has reigned over Austria for six hundred years, and has possessed the Hungarian crown for more than half that period. Franz Josef I., reigning Emperor of Austria and King of Hungary, was born Aug. 18, 1830, and suc-

ceeded his uncle, Ferdinand I., who abdicated in 1848. The heir-apparent is the Archduke Rudolf, born Aug. 21, 1858.

Government.—The common affairs of the two monarchies, restricted to military defense and foreign policy, are regulated by the Delegations, consisting of 120 members, chosen in equal numbers from the Austrian and Hungarian legislatures—20 from the upper and 40 from the lower house of each. The common Ministers, responsible to the Delegations, are as follow: Minister of Foreign Affairs and of the Imperial Household, Count G. Kalnocky de Köröspatak, born in 1832, Minister to Rome, 1879–'80, and then at St. Petersburg until he was called to the head of the administration, Nov. 21, 1881; Minister of War for the whole empire, Count Bylandt-Rheydt, appointed June 21, 1876; Minister of Finance for the whole empire, Baron von Kallay, appointed June 4, 1882.

Area and Population.—The total area of the Austro-Hungarian Empire, exclusive of the occupied provinces, is 240,942 square miles; the total population was returned in the census of Dec. 31, 1880, as 37,786,246, or 159 to the square mile. The population increased in eleven years in Cisleithania, 8·5 per cent.; in Hungary only 1·24 per cent. In Transylvania there was an actual decrease of 70,000. The area and population of the separate provinces of the two monarchies were as follow:

PROVINCES OF THE EMPIRE.	Square miles.	Population.
AUSTRIAN MONARCHY:		
Lower Austria (Unter der Ens)	7,654	2,330,621
Upper Austria (Ober der Ens)	4,631	759,620
Salzburg	2,767	168,570
Styria (Steiermark)	8,670	1,218,597
Carinthia (Kärnten)	4,005	348,780
Carniola (Krain)	3,856	481,243
Coast Land	3,084	647,934
Tyrol and Vorarlberg	11,324	912,549
Bohemia (Böhmen)	20,060	5,560,819
Moravia (Mähren)	8,583	2,158,407
Silesia (Schlesien)	1,987	565,475
Galicia (Galizien)	30,307	5,958,907
Bukowina	4,035	571,671
Dalmatia (Dalmatien)	4,940	476,101
Total, Austria	115,903	22,144,244
KINGDOM OF HUNGARY:		
Hungary Proper	87,043	11,644,574
Croatia and Slavonia, with Military Frontier	16,773	1,892,899
Transylvania (Siebenbürgen)	21,215	2,084,048
Town of Fiume	8	20,981
Total, Hungary	125,039	15,642,002
Total, Austria-Hungary	240,942	37,786,246

The Principality of Liechtenstein in the Austrian Alps, with an area of 68 square miles and 9,124 inhabitants, is nominally independent, and its people are not subject to taxation or military duty. The provinces of Bosnia and Herzegovina and the Sanjak of Novi-Bazar, were placed provisionally under the administration of the common authorities by the Berlin Treaty of 1878. Their population numbered 1,326,453, of whom 448,613 were Mohammedans, 496,761 Greek Orthodox Christians, 209,391 Roman Catholics, and 3,439 Jews.

The population of the cities in Austria and Hungary containing over 50,000 inhabitants, was as follows—In Austria: Vienna, 726,105, with suburbs, 1,103,857; Prague, 162,323; Trieste, 144,844; Lemburg, 109,726; Gratz, 97,791; Brünn, 82,660; Krakau, 66,095. In Hungary: Buda-Pesth, 360,551; Szegedin, 73,675; Holdmezö-Vásárhély, 50,966; Maria-Theresiopel, 61,367.

Among the population of Cisleithania, the principal religious confessions were represented by the following numbers: Roman Catholics, 17,693,648; Greek Catholics, 2,533,323; Israelites, 1,005,394; Greek Oriental, 492,088; Evangelicals of the Augsburg Confession, 289,005; of the Helvetic Confession, 110,525.

The percentage of the various nationalities was as follows: Germans, 36·75 per cent.; Czechs, 23·77; Poles, 14·86; Ruthenians, 12·81; Slovenes, 5·23; Italians, 3·07; Serbs and Croats, 2·58; Roumanians, ·88; Magyars, ·05. The Israelites have increased since 1869 22·58 per cent., the Italians 13·19 per cent., the Poles 9·97 per cent., the Czechs 8·69 per cent., the Serbs and Croats 7·77 per cent., the Ruthenians 7·71 per cent., and the Germans 7·25 per cent. The Slovenes have decreased considerably, owing to their adoption of the nationality of the Germans in Carinthia and Lower Styria, and in the coast-lands of that of the Italians, who received accessions also from the Serbo-Croats.

The percentage of the population of Austria who could neither read nor write was 44·5, among the males 43·2, among the females 45·8; percentage of those who could read only 6·1, among males 4·6, among females 7·5; percentage of those who could read and write 49·4, among males 52·2, among females 46·7. In the Bukovina the percentage of illiterates was 89·7, in Dalmatia 89·3, in Galicia 81·1, in Istria 77·8, in Borizia and Gradisca 60·3, in Carniola 54·1, in Trieste 38·9, in Carinthia 47·6, in Styria 37·3, in Bohemia 22·6, in Moravia 24·3, in Silesia 25·8, in Salzburg 22·9, in Tyrol 22·7, in Lower Austria 21, in Upper Austria 20·2, and in Vorarlberg 16·2.

The following table gives the millesimal proportions of the population of the Cisleithan lands engaged in the various classes of employments, including families and dependents:

PROFESSIONS.	Per mille.
Agriculture	588·20
Industry and mining	264·25
Mercantile employments and transportation	55·64
Professions requiring a higher education	33·54
Property-owners and pensioners	31·67
Laborers	18·11
Employed in educational and charitable institutions	5·54
With no known occupation	3·05
Total	1000·00

Statistics collected by the Hungarian Government bureau show that the ratio of the Magyar-speaking portion of the population has increased only 1 per cent. in sixty years. In

the capital, where the Germans are more pliant in changing their language than the Slavic population of the provinces, particularly since the recent Magyar agitation has made it more to their interest to do so, the extension of the national language has been greatest. The proportion of children under five years of age speaking the Magyar tongue in Buda-Pesth is 47 per cent., against 45·7 per cent. among persons between fifty and sixty years of age. Of the Germans in Hungary as many as 21 per cent. are acquainted with the Magyar language; but of the Slovaks not 10, and of the Roumanians and Ruthenians not 6 per cent. The German language is extensively cultivated, over 10 per cent. of the Magyars acquiring it for commercial intercourse or education and travel. In the kingdom there are 817,668 non-Magyars who can speak Hungarian, and 791,670 non-Germans who speak German. The progress of education has been remarkable, 46 per cent. of the 10,844,000 above the age of seven being able to read and write in 1880, against only 25 per cent. in 1870.

Commerce, Industry, and Agriculture.—The total value of the imports and exports of the Austro-Hungarian Empire for the last three years reported, was as follows, in florins:

YEAR.	Imports.	Exports.
1879	551,890,000	675,140,000
1880	607,640,000	666,870,000
1881	634,420,000	717,890,000

The export of flour, which averaged, just before the enactment of the German corn-duties, about 2,400,000 metric quintals, has fallen to half that quantity. Owing to the active trade in live hogs with Servia, the imports and exports of live animals were considerably larger in 1881 than in the preceding year. The commercial treaty with Servia, ratified in June, 1882, secures the entrance of certain Austrian products at half the ordinary duties, and on the other hand a reduction of the Austrian duties on live hogs, and Servian wines, prune-brandy, etc. The exceptional treatment of German partly manufactured products, which was kept up as compensation for possible advantages to be extended to Austria-Hungary in the German tariff, ceased from the beginning of 1883 to operate as regards textile manufactures imported for printing, dyeing, or bleaching, the most important branch of this trade. The importation of lard and pork products showed a great decrease in 1881, in consequence of the prohibition of American pork. The export of wines, stimulated in 1880 by the failure of the French vintage, decreased from 905,841 to 438,-213 metric quintals. The import of petroleum increased from 1,150,000 to 1,480,000 metric quintals. Cotton and other textile materials were imported in considerably larger quantities than in the preceding year. The continued large importation of yarns strengthened the spinners in their demand for a protective duty. A marked improvement in the industrial situation and the consumptive capacity of the people is indicated by a larger importation of raw stuffs of various kinds, of colonial wares, of machinery, of textile manufactures, and of articles of luxury, and an increased exportation of textiles, paper manufactures, fine leathers, chemical products, etc.

More than half the export and import commerce of the Austrian Empire is with Germany, next to which the chief market is Roumania, which receives 50,000,000 florins of the exports, and furnishes 40,000,000 florins of the imports. Italy and Russia follow, but with a much smaller trade.

Precious Metals.—The movement of the precious metals in 1881, as compared with the previous year, was as follows, in florins:

SPECIE.	Imports.	Exports.	Excess of imports.
1880:			
Gold	22,200,000	3,200,000	19,000,000
Silver	7,100,000	15,400,000	8,300,000*
Total	29,300,000	18,600,000	10,700,000
1881:			
Gold	19,800,000	2,200,000	17,600,000
Silver	16,100,000	1,200,000	14,900,000
Total	35,900,000	3,400,000	32,500,000

Customs.—The Hungarian Legislature passed a law in 1881, denounced by the Constitutional party in the Austrian House of Deputies as an infringement of the customs-union, which requires a declaration to be made of all goods imported into or exported from the kingdom. According to the statistics collected for the last eight months of 1881 in pursuance of this regulation, Hungary has a balance decidedly in its favor in the trade with Austria as well as with other countries. The returns exhibit the total value of imports as 185,800,000 florins, of which 139,080,000 florins came from Austria; and the total value of exports as 242,800,000 florins, of which 165,250,000 florins were shipped into Austria.

Hungary.—Although in the social life of Hungary certain vestiges of feudalism survive the development of liberal political institutions, she strives to keep abreast of economical progress; people and Government uniting their efforts to develop all their resources under the pressure of American competition. The great richness of the Hungarian soil is counterbalanced by adverse geographical and climatic conditions which warn them against remaining a purely agricultural state. It is only by gigantic protective works and a more and more intensive culture that they can still hold their own. The invention of the Hungarian method of flour-milling, made necessary by the hard quality of their wheat, which has since been adopted and improved in the United States, marked the beginning of industrial development. A regular line of vessels from

* Excess of exports.

Fiume facilitates the export of Hungarian flour, which is now largely consumed in England. The new beet-sugar culture and manufacture are not sufficient to supply the home demand; but high-wines and refined spirits are exported as far as Spain. The wine production repays the encouragement bestowed upon it by the Government. The wines are produced in greater quantities, and of better and more uniform quality, and are shipped by the cargo to Bordeaux to replace the diminished growths of France. The number of persons engaged in industrial occupations proper increased between 1870 and 1880 from 784,378 to 908,958, or 14 per cent., while the whole population increased only by a small fraction.

Manufactures.—Unable to resort to protection, owing to the customs-union with Austria, Hungary employed other methods of encouraging industry. Hungarian manufacturers have the preference in Government and municipal orders, if they can produce articles of satisfactory quality. In the iron industry there are the imperial railroad works at Oravicza and Resitza, for which the best technical skill in France was imported; the shops of the Hungarian state railroad, which excel in the production of iron bridges; and various private establishments which stand on the highest plane of technical art. Leather, paper, pottery, and glass are also manufactured successfully on a large scale; but the important branch of textile industry is represented only by factories which subsist on the Government commissions for the supply of the army, although the country produces an abundance of wool of superior quality. By a law which went into effect on Jan. 1, 1882, industrial establishments which found new industries, or utilize products previously wasted, are exempted from all public dues and taxes. This and other measures of the kind led to the establishment of some two hundred factories in new branches. In museums, industrial exhibitions, a national school of mechanical drawing, a technical school for wood-workers, industrial evening-schools, etc., the Government has co-operated with private individuals in fostering technical education and industrial art. A review of the industrial progress already attained is to be made in a national exposition in 1885.

Live-Stock.—The live-stock census of the empire shows that horned cattle, which decreased between 1857 and 1869, increased between the latter date and 1880 from 7,425,212 to 8,584,077; while sheep, in consequence of the Australian production, decreased from 5,026,398 to 3,841,340. American competition and the German protective tariff are beginning to exercise a depressing effect on the wheat-growing, flour-milling, and cattle-raising interests of Hungary and Austria. There have been actual importations of American wheat.

Mining.—The total net value of the product of the mines and furnaces, after deducting the value of the ores, together with that of the salines, was 83,790,373 florins in 1881, as against 79,988,819 florins in 1880.

Railways.—The total length of railways in the empire, open to traffic in 1882, was 11,480 miles, of which 7,130 were in Austria and 4,350 in Hungary. There were, besides, 177 miles in Bosnia. The length of railway owned or operated by the state, at the close of 1881, was 2,912 kilometres, or 24 per cent. of the total mileage. To this was added on the 1st of January, 1882, the Empress Elizabeth railroad, 922 kilometres in length, which was taken over into the management of the state under a convention providing for its eventual acquisition. On the 1st of July, 1882, a railroad bureau was created for the direction of the state railroads. The total receipts of the Austro-Hungarian railroads in 1881 were 215,950,000 florins, of which 47,950,000 florins were from passengers, and 168,000,000 florins from freight.

Telegraphs.—The length of telegraph lines in 1881 was 21,735 miles in Austria, with 56,862 miles of wires, and 9,032 miles in Hungary, with 32,380 miles of wires. The number of messages carried in 1881 was 8,865,030, including 584,059 official dispatches.

Post-Office.—The number of letters forwarded by the post-office in 1881 was 248,509,000, besides 47,858,000 postal-cards in Austria, and in Hungary 74,218,000 letters and 13,628,000 postal-cards.

Shipping.—The merchant marine in 1882 numbered 70 ocean-steamers, of 16,145 horse-power and 62,387 tons; 42 coasting-steamers, of 2,179 horse-power and 4,472 tons; and 8,294 sailing-vessels and fishing-smacks of 259,970 tons. The crews numbered 27,187 men. The Austro-Hungarian Lloyd, which owns the large steamers and does the greater part of the carrying trade between Austria and the East through the Suez canal, receives a subsidy of 1,730,000 florins per annum.

The number of vessels entering the Austrian and Hungarian ports, Trieste and Fiume, in 1881, was 47,045, of 5,911,885 aggregate tonnage, of which 19,415, of 4,947,399 tons, were steamers; the number of departures was 46,907, tonnage 5,913,720, of which 19,392, of 4,942,078 tons, were steamers. The tonnage entering Austro-Hungarian ports under the national flag was 5,197,855; under the British flag, 402,164; under the Italian, 201,603.

Finance.—The budget estimates of revenue and expenditures for common affairs in 1882 place the total at 117,149,549 florins, of which the contributions from the two halves of the empire make up 113,824,679 florins (one florin = 50 cents). Of the total sum, 101,591,380 florins are devoted to the army, 9,177,829 florins to the navy, 4,328,900 florins to the diplomatic service, 1,926,040 florins to the financial administration, and 125,400 florins, to the financial control.

The estimates for 1883 make the expenditures 184,661,988 florins, of which 102,413,318

florins are required for the army, 9,162,224 florins for the navy, 4,246,900 florins for foreign affairs, and 1,962,661 florins for the finance ministry. There are extraordinary expenses for the army in Bosnia. The contributions to be assessed on the two parts of the empire are 99,991,763 florins.

The expenses of the civil administration of Bosnia and Herzegovina for 1883 are estimated at 7,039,809 florins, including the following items: public highways, 239,500 florins; worship, 162,503 florins; education, 91,889 florins; military forces, 251,034 florins; gendarmerie, 1,114,475 florins. The receipts are estimated at 7,217,819 florins, of which the tithes produce 2,250,000 florins; the income-tax, 600,000 florins; sheep-tax, 247,000 florins; customs, 702,000 florins; tobacco-tax, 1,896,000 florins; salt, 867,135 florins; octroi, 43,000 florins; and stamps, 300,000 florins.

The estimates communicated to the Delegations for 1884 call for 4,383,110 florins for foreign affairs, 102,413,639 florins for the army, including 6,876,005 florins of extraordinary expenditure, 9,470,977 florins for the navy, 174,400 and 125,747 florins respectively for the financial administration and control, and 1,973,450 florins for pensions. The total expenditures are estimated at 115,170,880 florins, the net surplus of the customs applicable to the common expenses at 17,633,570 florins, and the contributions of the two states at 98,107,799 florins. For the army of occupation in Bosnia and Herzegovina, 7,307,000 florins are asked. The cost of the civil administration of the occupied provinces is estimated at 7,356,267 florins, and the revenue from the provinces at 7,412,615 florins.

The Austrian Government is very tardy in publishing the accounts of actual receipts and expenditures. The budget estimates in recent years show invariably a deficit, averaging since 1876 some 37,500,000 florins a year. The estimated revenue for 1882 is 448,155,798 florins; expenditures, 485,720,951 florins. The principal heads of revenue are as follow:

SOURCES OF REVENUE.	Florins.
Direct taxes	92,970,000
Customs duties	29,820,584
Salt monopoly	19,566,000
Tobacco monopoly	63,947,200
Stamps	16,880,000
Judicial fees	32,000,000
State lottery	20,222,000
Excise duties	88,167,000
State domains and railways	19,886,110
Post and telegraphs	23,073,000
Miscellaneous receipts	41,628,399
Total revenue of 1882	448,155,798

The following are the estimated expenditures of the several departments:

BRANCHES OF EXPENDITURE.	Florins.
Imperial household	4,650,000
Imperial Cabinet Chancery	70,235
Reichsrath	1,482,692
Council of Ministers	1,043,210
Ministry of the Interior	17,580,765
" National Defense	8,991,700
" Public Education and Worship	17,782,885
" Agriculture	11,519,408
Ministry of Finance	104,396,814
" Justice	20,745,335
" Commerce	46,064,264
Board of Control	155,000
Interest on public debt	128,425,068
Pensions and grants	32,911,950
Cisleithan portion of common expenditure	89,946,680
Total expenditure of 1882	485,720,951

The Hungarian budgets from 1877 to 1882 show an average annual deficit of nearly 23,000,000 florins. The estimated revenue for 1882 was as follows:

SOURCES OF REVENUE.	Florins.
Direct taxes	88,690,000
Indirect taxes and monopolies	118,127,261
State domains, mines, and railways	36,137,116
Post, telegraphs, etc	31,280,649
Miscellaneous receipts	27,732,188
Total revenue of 1882	301,967,214

The following were the estimated expenditures under the principal heads:

BRANCHES OF EXPENDITURE.	Florins.
Royal household	4,650,000
Royal Cabinet Chancery	70,592
Diet of the kingdom	1,206,018
Ministry "*ad latus*"	54,846
Ministry of Finance	53,909,880
" the Interior	8,005,295
" War	6,812,900
" Education and Worship	4,802,547
" Justice	10,159,898
" Public Works	28,348,748
" Agriculture and Commerce	8,628,913
Public debt and pensions	61,913,085
Guaranteed interest to private railways	10,900,000
Transleithan portion of the common expenditure of the empire	63,892,174
Miscellaneous expenses	65,381,025
Total expenditure of 1882	328,285,311

The ordinary expenses for 1883 were estimated at 288,800,000 florins, the ordinary revenues at 280,700,000 florins. The budget for 1884 places the ordinary expenditures at 298,200,000 florins, and the revenues at 295,500,000 florins; the total expenditures at 329,200,000 florins, and the total revenues at 308,900,000 florins.

Public Debt.—The public debt of the Austrian Empire was already large at the end of the Napoleonic wars. After 1848 it increased again rapidly from 1,250,000,000 florins to 3,000,000,000 florins in 1868. The war of 1866 added 300,000,000 of new loans, which were offset by the amount of the Lombardo-Venetian debt assumed by the kingdom of Italy. At the separation of Austria and Hungary an agreement was made, in May, 1868, renewed with certain modifications in 1877, whereby 70 per cent. of the total charges of the debt fell upon Austria and 30 per cent. upon Hungary. Since 1868 the two kingdoms have kept their finances separate. The deficits in Hungary constantly recurring since 1867, have been funded in a special debt, amounting in 1881 to the enormous sum of 1,045,319,600 florins. Austria has a large amount of floating liabilities arising from the same cause, given in a return for Jan. 1, 1882, as 411,998,744 florins, represented by a depreciated paper currency amounting to 320,434,947 florins, and interest-bearing treasury notes amounting to 91,563,797 florins, into

which form the later deficits were converted. The debt of the whole empire and of the Austrian monarchy, on the 1st of July, 1882, was 3,280,055,699 florins, of which the consolidated debt, bearing interest, represents 3,038,116,776 florins; non-interest-bearing, 115,756,604 florins; floating liabilities, 112,183,618 florins; and annuities, 13,998,701 florins. The total annual charge of the Austrian and common debts amounted in 1882 to 158,365,020 florins, of which the share borne by Hungary was 30,317,753 florins.

An operation for the conversion of the Hungarian debt was begun in 1881, in which year 160,000,000 florins of 6 per cent. gold bonds were redeemed by the issue of a 4 per cent. loan which was taken at a fixed price of 77⅘. The operation was suspended on account of the monetary crisis, and resumed again in 1883, when 300,000,000 florins were converted on slightly less favorable terms than before.

Tariff.—By agreement between the Austrian and Hungarian governments an increase in the tariff on petroleum, coffee, and tea was adopted as a means of reducing the chronic deficits in both countries. These enhanced duties, which fall with excessive severity on the laboring classes, went into operation in 1882. The import duty on petroleum was increased from 3¾ to 10 florins per metric quintal. In addition to this an excise duty on refined petroleum of 6½ florins per 100 kilos was imposed by the Hungarian Government. The increased revenue in both halves of the empire from the new petroleum duty is calculated at 6,000,000 florins. The duty on coffee is increased from 24 to 40 florins per metric quintal, and on tea from 50 to 100 florins, from which changes an increased yield of 6,500,000 florins is expected.

Taxes.—A bill for the amendment of the income-tax, carried through by the Austrian Government, forms part of a plan for the reform of the whole system of direct taxation. The revision of the land and house taxes had already been accomplished. The new income-taxes are much simpler than the former system, which even the officials had difficulty in understanding in all its details. A progressive scale is established for incomes derived from trades and professions. Besides the other taxes on special kinds of income, every one receiving more than 700 florins a year of net income pays a personal income-tax calculated on a progressive scale. The changes are expected to augment the revenues, which the chronic deficits in the budget render necessary in Austria as well as in Hungary. In both halves of the empire the indirect taxes, consisting of stamps, fees, and imposts on articles of consumption, have been pushed to the extreme limit, with the exception, perhaps, of the sugar and spirit taxes. The income-tax in Hungary is higher than in almost any other country, being 12 per cent. on incomes from stocks and bonds.* The revision of the Austrian system of taxes, the fourth within eighteen years, turns to this source which is already so fully utilized in the sister kingdom. The new land-tax is apportioned among the different provinces, and is assessed at 37,500,000 florins for fifteen years from 1881. The new personal income-tax is intended to replace all other methods of extraordinary or supplementary taxation. The rate is variable, and is fixed in the budget annually, according to the requirements of the Government. Incomes from enterprises which are required to furnish an official exhibit of their finances, and which are taxed at their source, are not subject to the personal income-tax. This variable extraordinary tax is supplementary to the scheme of the ordinary direct taxes, which covers systematically the five classes of objects approved by modern national economists, viz., land, houses, income from investments, trades, and salaries. The land-taxes are copied after the Prussian system. The cadastral survey and valuation, begun in 1869, was completed in 1881, at a cost of 20,000,000 florins. The yield of the land-tax is not greater than before. The house-tax is assessed on town property according to its renting value, and upon rural dwellings according to the number of rooms they contain. Mud and thatch cabins pay 75 kreutzers (37½ cents), houses with a single room 1 florin 50 kreutzers (75 cents), with two rooms 1 florin 70 kreutzers, up to villas and castles with forty rooms, which pay 220 florins ($110) per annum, and 5 florins more for each additional room. This class-tax on dwellings is higher, and the progression somewhat steeper than under the old law. The new income-tax affects all incomes from invested capital which are not taxed under other heads, or expressly exempted from taxation by special laws, as are the interest on deposits in the postal savings-banks, and the revenues of charitable institutions, of public schools, and incomes not exceeding 300 florins. The law requires every one to give any desired information respecting his own income or that of another. The tax is 5 per cent., except on dividends derived from corporations, which pay 10 per cent. Industrial and commercial concerns are taxed according to their mean profits, beginning with 3 per cent. on 1,500 florins, and ascending to 10 per cent. on over 50,000 florins annual profit. The tax on earnings does not touch incomes below 300 florins. Up to 500 florins the rate is 0·2 per cent., ascending to 10 per cent. for salaries or professional earnings exceeding 5,000 florins.

Army and Navy.—The total war strength of the Austro-Hungarian army in the beginning of 1883 was about 1,250,000 men, including 245,000 Austrian Landwehr and 205,000 Hungarian Honveds. The standing army is under the control of the common Minister of War, while the militia is looked after by the Ministers of National Defense in the two kingdoms. The system of army organization agreed to by the two states and embodied in the law

* It is exceeded only in Italy, where incomes from funded securities pay 13·8 per cent.

of Dec. 5, 1868, is that of universal liability to arms, on the model of the German army. The term of service is three years in the standing army and seven years in the reserve, with a liability to serve two years more in the Landwehr. The reorganization of the army, begun in 1883, introduces the territorial system, dividing the empire into fifteen *corps d'armée* districts, subdivided into recruiting precincts. The 102 regiments of infantry, of four battalions, will each be stationed in the district from which it is recruited. The standing army numbered in the beginning of 1882 251,455 men on the peace footing and 779,597 including the reserves. The active army was made up as follows: infantry, 144,738 men; yagers, 16,136; cavalry, 42,271; field-artillery, 20,228; fortress artillery, 7,110; engineers, 5,296; pioneers, 2,672; staff and departmental services, 13,009; total, 251,455.

The Austro-Hungarian navy consisted, in 1882, of 13 iron-clad war-vessels, 37 steamers, chiefly small and constructed for coast-defense, 6 sailing-vessels, and 12 torpedo-boats. Of the armored vessels, ten are sea-going cruisers. The largest is the Custozza, a broadside ship of 7,060 tons, covered with 9½-inch plates, and armed with eight 18-ton Krupp guns. Of more modern type is the Tegethoff, of 7,390 tons, armored with steel 13 inches thick, with six 25-ton Krupp guns ranged broadside and in a turret. The Erzherzog Albrecht has 8½ inch plates and eight 18-ton Krupp guns. The navy was manned in July, 1882, by 6,270 officers and men, who can be doubled in the event of war. The navy is recruited by a levy on the seafaring population, subject to the same term of service as in the army, supplemented by enlistments. Austria has a strongly fortified naval harbor at Pola, which has been enlarged so as to be enabled to contain the entire fleet, and another naval port at Trieste, where the arsenals are situated.

Foreign Relations.—The situation of Austria-Hungary in its relations to foreign powers and the peace of Europe, though more difficult than that of any other country, is becoming more secure through the strengthening of the league of peace of which the German Chancellor is the author. The dangerous feelings which were rife in both Russia and Italy in the preceding year were less noticeable in 1883. The bond between the Governments of Austria and Italy seems to grow more acceptable to the Italian people, although a large section do not yet give up the idea that there are still scores to settle with their old enemy. The Irredentist demonstrations continued in the early part of the year, but subsided later. The Russian strategic railroads and rumored massing of troops on the frontier created great alarm in the beginning of the year, but the visit of the Russian minister, M. de Giers, at Vienna, and the manifestations of pacific intentions for the present on the part of the Czar tranquillized this feeling. The source of the danger, however, the situation of the south Slav peoples, became still more evident in 1883. The King of Servia, by becoming the *protégé* of Austria, effectually alienated his subjects, who after his return from a visit to Vienna, in August, broke out in open revolution. The pretender, Karageorgevich, fortified by Russian support and a matrimonial alliance with the Prince of Montenegro, hovered on the borders, ready to seize the throne. The occupied provinces remained tranquil during the year. The refugees nearly all returned from Montenegro. In the autumn the recruiting proceeded without objection. The difficulties with the Roumanian Government were not decided at the Danubian conference in a manner satisfactory to Roumania, but negotiations begun at Vienna with M. Bratiano in the fall promise to remove some of the causes of jealousy. (See DANUBE, EUROPEAN COMMISSION OF THE.) The Roumanian Minister apologized for his hostile declarations of the preceding year. A boundary commission began the adjustment of certain disputed points of the frontier line between Hungary and Roumania. One of the occasional quarrels between the frontier guards on both sides of the line created a sensation in October, until it was known that the participants were alone responsible. The Hungarian Government was intrusted with the duty of removing the obstacles to navigation at the Iron Gate in the Danube.

Still more important to Austria than the arrangement of the affairs of the Danube, was the decision arrived at by the *Conférence à quatre* and arranged with the Turkish Government regarding the speedy completion of the Turkish lines of railroad to connect with the Austro-Hungarian system.

The Danube and Turkish Railways.—In the eighteenth century, and down to the middle of the nineteenth, Austria enjoyed a commercial primacy in Turkey which was originally won by her successful wars against the Ottomans, and which her geographical position enabled her to maintain. The political ascendency in the lands of the divided Ottoman Empire has since been borne away by Russia and the Western powers, and in the commercial arrangements subsequently entered into Austria has seen her geographical advantages neutralized and the trade pass into the hands of the more enterprising merchants of England, France, and Belgium. This Levantine trade is, however, of vital importance to Austria and Hungary, unfavorably situated as they are with regard to the ocean commerce. By the Paris Treaty of 1856, Austria was compelled to share the control over the navigation of the Danube with France, Great Britain, the German states, Russia, Italy, and Turkey. The *acte public* of 1865 took away the remaining privileges which the Commission of Riverain States secured to Austria, and the Pontus conference of 1871 confirmed the prolongation of the European commission till April 24, 1883. The Treaty of Berlin in 1878 extended the jurisdic-

tion of the commission up to the Iron Gate, gave Roumania a voice which it has used against Austria, and delivered over to Russia, with the Kilia arm and the Stari-Stamboul mouth, the possible military command of the mouth of the Danube and control of its commerce. The deepening of the mouth of the Danube by the European commission was in reality detrimental to Austrian commercial interests. The stoppage of navigation during the winter months, the shoal and shifting channel in the wide stretch between Pressburg and Gönyö, and the rapids of the Iron Gate, deprive the Danube of value as an outlet for Austrian commerce. Before the improvement of the mouth, Austrian merchants monopolized the markets of the lower valley. Since British and French vessels are enabled to ascend the river, the Austrians have been driven step by step from this profitable field. In the sea-traffic Austria has lost ground in the same proportion. The overland exports to Turkey, including Servia and Roumania, increased only 16,000,000 florins in the sixteen years from 1864 to 1880. Of the imports of all Turkish ports in the ten years ending with 1872, England furnished 48 per cent., France 15 per cent., Germany 7½ per cent., and Austria not 7 per cent. In the ten years between 1867 and 1877 the trade with Turkey showed a rapid decline. In the former year 13·3 per cent. of the import, and 22·1 per cent. of the export trade of the Austrian Empire was with Turkey; but in 1876 the proportions were 11·6 and 18 per cent. respectively, while the transit trade declined 30 per cent. The Austrian tonnage on the lower Danube declined from 86,000 in 1879 to 50,000 in 1881, while the British increased from 136,000 to 332,000. Of the tonnage which passed through the Sulina mouth in 1872, 30 per cent. was British and 11 per cent. Austrian; while in 1881, 63 per cent. was British and 6 per cent. Austrian.

The long-projected railroad connection with Turkey was expected to give Austria the opportunity to regain the position which was lost through the errors of her diplomatists and the incapacity of her merchants. In 1869, Baron Hirsch, the famous Austrian railroad financier, undertook to construct for the Turkish Government a line of railroad which should extend through the length of Turkey and connect under the most favorable conditions with the Austrian net-work. The concessions provided for a railroad from Constantinople *via* Adrianople and Philippopolis, through Bosnia to the Save, where it would connect with the Southern railroad of Austria. Branch roads were to connect the trunk-line with Salonica, Dedeagatch, and Shumla. The Constantinople end was built to beyond Philippopolis, the Salonica branch constructed, and the Novi-Banjaluka section finished, by 1872. A convention was concluded for the continuation of the east end from Bellova to Sophia and Nish, and the extension of the Salonica branch from Uskub to meet the Bulgarian section at Mitrovitza, which it was intended to continue from Nish by way of Mitrovitza, Novi-Bazar, Serajevo, Travnik, Banjaluka, and Novi, to join the Austrian railroad at Agram. Baron Hirsch finished the Salonica road up to Mitrovitza, and constructed the Bulgarian branch to Tirnova. British intrigues and the rival interests of the Austrian and Hungarian states prevented the work from being carried any farther. The portions thus far completed opened up the whole interior of the Balkan Peninsula to British commerce, while Austria-Hungary derived no benefit from them. When the Porte showed an inclination to complete the connection with the Austrian railroads, it was persuaded to divert the line for supposed strategical reasons, and adopt the project of a difficult mountain railway from Sophia to Uskub. The Hungarians were strongly opposed to the Hirsch project, desiring that the connection with the Continental system should be through Hungary, and the Government went so far as to make surveys for a direct line from Pesth through Semlin and Belgrade to Nish. The territorial changes consequent upon the Russo-Turkish War increased the divided interests and strategical questions. The Berlin Congress, instead of deciding the question of the railroads, left it in an almost hopeless tangle by referring it to the *Conférence à quatre*, making it depend upon the mutual agreement of Austria-Hungary, the Porte, Servia, and Bulgaria. The Austro-Servian railroad convention was concluded as early as April 9, 1880. In this, Servia bound itself to construct within three years a railroad connecting with the Pesth-Semlin line and running from the Hungarian boundary near Belgrade up the Marava valley to Nish, and there dividing so as to connect with the Turkish railroads by two branches, one running to the Bulgarian boundary toward Bellova, where it would join the Constantinople line, and the other to the Turkish boundary to meet an extension of the Salonica-Mitrovitza railroad. The work was not completed at the term agreed upon, June 8, 1883, nor is it yet decided where the junctions with the Turkish and Bulgarian railroads are to be. The *Conférence à quatre*, at its sittings in 1881 and 1882, debated fruitlessly the questions of the international postal and telegraph services, tariff regulations, etc. A note communicated to the Turkish Government by the Austrian embassador in the early part of 1883, complains of the delay in carrying out the decisions of the *Conférence à quatre*, and making the extensions to connect with the Servian and Bulgarian roads. It declared that the Porte had not yet determined the route by which the Yamboli line was to reach the Bulgarian railroad at Shumla, and neither accepted nor rejected the Servian proposal of the Vranja route for the connection of the Salonica-Uskub road with the Servian system. The

alternative is the Pristina route, by which the continuation already constructed to Mitrovitza would be utilized. The Austrians were desirous that the connection with the Salonica road should be taken in hand first, instead of the extension of the Yamboli branch into Bulgaria, which latter would serve Roumanian and Russian interests and promote British rather than Austrian commerce. The passage of the railroads through Hungary, Servia, and Bulgaria, instead of directly from Austria proper into Turkey, deprived them of many of the expected advantages to Austrian commerce and industry, while favoring the rival Hungarian interests. The protracted discussions of the *Conférence à quatre* led at last to the adoption of a railroad convention which was signed May 9, 1883. The route agreed upon for the line which will connect Vienna with Constantinople, passes through Semlin, Belgrade, Nish, Pirot, Caribrod, Sophia, Bakerel, and Bellova, to Sarembey, the present terminus of the railroad from Constantinople. The road from Salonica is to join the Servian railroad from Belgrade to Vranja, by means of a railroad to be constructed from the latter place to a point on the Salonica railroad in the neighborhood of Pristina, or wherever the surveys indicate the most favorable route, the point of junction to be settled upon by the Porte within a year. The 15th of October, 1886, is set as the term at which both lines must be completed. The gauge is to be the same as that of the Austrian railroads, the signal system and other modes of operation are to follow those of Austria, and in the customs arrangements every facility is given to commerce and travel. The tariffs per kilometre are to be identical in the countries through which the roads pass. At least one express daily is to run in each direction between Vienna and Pesth and Constantinople, and Vienna and Pesth and Salonica, at a speed of at least 35 kilometres (22 miles) an hour.

Austria.—Austria proper, or Cisleithania, has been governed since the recognition of Hungarian independence by a twofold Legislature, a central body, called the Reichsrath, and local assemblies, or Provincial Diets, for the individual provinces. The Reichsrath consists of an upper house, or House of Lords, and a lower house, or House of Deputies. The House of Lords is composed of the princes of the blood royal, 14 in number in 1882; the territorial nobility, numbering 53; the archbishops (10) and bishops of princely rank (7); and life-members appointed by the Emperor for distinguished merit and ability, in number 105. The Abgeordnetenhaus, or House of Deputies, consists, under the electoral law of 1873, of 353 members elected by four different constituencies: 1, the people of the rural districts; 2, the people of the towns; 3, the chambers of commerce in the large towns; 4, the large landed proprietors. The franchise in the popular urban constituencies was extended by a law enacted in 1882 to all male persons paying five florins in direct taxes. The Provincial Diets are composed as follows: 1, the archbishops and bishops of the Roman Catholic and Oriental Greek Churches and the chancellors of the universities; 2, representatives of the landed aristocracy, elected by all proprietors paying taxes to the amount of 100 florins; 3, representatives of towns, elected by all the burgesses; 4, representatives of chambers of commerce and trade-guilds; 5, representatives of rural communes elected indirectly through electoral colleges. The provinces are seventeen in number: Lower Austria, Upper Austria, Salzburg, Styria, Tyrol, Vorarlberg, Bohemia, Dalmatia, Galicia, Carinthia, Carniola, Bukovina, Moravia, Silesia, Gorizia, Istria, and Trieste.

The Reichsrath has power to legislate on matters of customs, trade and commerce, banking, posts, telegraphs, and railroads, subject to royal approval, to scrutinize the public accounts and discuss all bills of taxation and expenditure, and to ratify all legislation relating to military service. Members of both houses have the right of initiative. The presiding officers in both bodies are nominated by the Emperor. The Reichsrath must be convened annually, and, in case of dissolution, new elections must take place within six months. The Provincial Diets legislate on matters of local administration and taxation, particularly agrarian regulations, public works, the church, schools, and public charity.

The Cabinet is composed as follows: President of the Council and Minister of the Interior, Count Eduard Taafe, born in 1833, who held the same portfolio in a former ministry, 1867–'70, and was appointed chief of the present Cabinet Aug. 19, 1879; Minister of Public Instruction and Ecclesiastical Affairs, Baron S. Conrad D'Eybesfeld, appointed Feb. 17, 1880; Minister of Finance, Dr. J. Dunajewski, appointed June 26, 1880; Minister of Agriculture, Count Julius Falkenhayn, appointed Aug. 19, 1879; Minister of Commerce and National Economy, Baron F. Pino von Friedenthal, appointed Jan. 14, 1881; Minister of National Defense, Maj.-Gen. Count S. von Welsersheimb, appointed June 25, 1880; Minister of Justice, A. Prazak, appointed Jan. 14, 1881; Minister without Portfolio, F. Ziemialkowski, appointed Aug. 12, 1879.

Political Chronicle.—The Czechs, whose position was strengthened by the Bohemian elections of 1883, continued to press their victory over the German party, which showed a still more bitter and irreconcilable spirit. Provision was made for the establishment of a Czechish medical faculty in the University of Prague. Although the Czechs and Slovenes elected representatives to the Reichsrath who for four years have dictated radical changes in the laws of the empire for the benefit of their races, yet the provincial legislation has remained in the hands of the old German

majority. Finally, the ministry gave heed to the frequent memorials from Bohemia and Carniola, and ordered new elections for the Diets of those provinces, in which an overwhelming majority of Autonomistic candidates were returned. In Galicia the Ruthenians have the same complaints to make against the Poles which the latter and the other Slavs formerly made against the Germans. To them alone of all the Slav races the triumph of the federalistic principle signifies the extirpation of their national characteristics. They are about equal in number with the Poles, but form the poorer and politically weaker class. They formerly voted with the German Centralistic party, and looked to it for protection, but, losing hope of relief from that quarter, are gradually abandoning their opposition, relying on the hope that the combination of parties which has saved from extinction all the other nationalities will not be so inconsistent as to help crush out theirs. In the elections of 1883 the Polish Federalistic party carried everything before them. A sign that the Germans will soon abandon their efforts to recover the dominant position which enabled them to impose German civilization upon the unwilling Slavs by political means, is seen in the growth of a German national spirit manifested in demands for the autonomy of the German communities of Austria which are in danger of being ingulfed in the "Slavic deluge." Many of the Jews in Austria, who formerly counted themselves as Germans, have turned with the popular current, and adopted other nationalities. The Germans also begin to show the same facility as in other countries to merge their nationality, now that it secures them no advantage, in that of alien races.

As the Saxons of Transylvania complain of Magyar oppression, the German party in Bohemia anticipate similar grievances, and have broached the subject of the division of the province into separate German and Czechish administrative districts. These incidents of the race struggle are but superficial manifestations. The preponderance of German thought and the spread of German influence through commercial, political, and intellectual channels still continues in Austrian lands and extends through southeastern Europe, although Magyar and Slav politicians attempt to revive the influence of French ideas, and during the year gave expression to this sentiment in frequent newspaper articles and a number of political manifestoes. The combination of Czechs, Poles, and Conservatives, which has carried through the federalistic policy, obtained in 1883 for the first time a majority in the Austrian Delegation, which, according to the usual custom, is not elected by the whole House, but by the deputations of the several provinces, to each of which a certain number of seats in the Delegation are allotted.

Socialism.—Austria has hitherto prided itself on its freedom from socialistic agitation. But for a year or two past it has seen evidences of a wide-spread socialistic propaganda, and has been startled by eccentric crimes committed by revolutionary desperadoes, by riotous demonstrations in the streets of Vienna, and by murderous encounters between the police and socialists. In November, 1882, the breaking up by the police of a shoemakers' trades-union was the occasion of a riot in Vienna, in which the cavalry were called out, and charged on the mob. The following month there was a monster trial of socialists in Prague, which resulted in the conviction of forty-five persons. Another band, twenty-nine in number, were brought to trial at Vienna in March, 1883. To some of these a singular crime was brought home. They had murdered and robbed a shoemaker in July, 1882, in order to obtain money to spread the inflammatory teachings of Johann Most's "Freiheit." All the prisoners except the two implicated in the crime were acquitted, because there is no law against socialism in Austria, and convictions can only be pronounced for high treason or disturbance of the public peace. A general strike of the bakers in Vienna caused some excitement and much inconvenience, until the Government came to the relief of the public and crushed the strike by supplying the city with bread made by the army bakers. On December 15th a commissary of police who had attended socialistic gatherings, in conformity with a law requiring all meetings, however private, to be held under police supervision, was murdered in a suburb of Vienna.

The socialistic ferment, which has penetrated into Austria, has stimulated politicians to propose remedial measures. The Government introduced into the Reichsrath, in the session which opened Dec. 5, 1882, a trade-regulation act, an employers' liability act, and a project for accident insurance. Even the Left sacrificed the principle of non-interference so far as to accept the trade act with its provisions for compulsory benefit associations. Another law intended to counteract the unrestricted supremacy of capital, which was passed, imposes limitations on joint-stock companies. The Liberals, who here as in Germany have been accused of indifference to the welfare of the humble classes, brought forward a scheme which embraced industrial, agrarian, and poor-law reforms. They proposed to establish sick-funds, accident insurance, and superannuation pensions for industrial operatives at the sole cost of employers. The poor laws they wished to amend so as to enlarge the districts or facilitate the acquirement of a domicile, as now relief to the sick or hungry is often refused on account of non-residence, and in some cases persons are sent away from cities where there are hospitals to carry contagious diseases into their rural parishes. The agrarian question is one of great moment and difficulty in Austria, but is not likely to find the same reconstructive disposition on the part of the ruling factions as the

question between capital and labor, for it touches the interests and the prejudices of the land-owners. The class of cottagers who are half peasants and half laborers, and who have sunk into abject proletarianism, is increasing. When their useless parcels of ground are ever given up, they do not pass into the hands of the farming class, which is too poor to acquire them, but are added to the estates of great land-owners or the country-seats of city residents. The effect of overgrown estates, a numerous dependent proletariat, and taxes which bear heavily upon the small farmers, who are already handicapped by an uncertain climate and a dearth of credit facilities, is to perpetuate negligent methods and a stationary routine which leave Austria ill prepared to stand the stress of American competition.

School Laws.—An amendment of the school law was carried in the Reichsrath, which makes some alterations in the system of elementary instruction of a reactionary character, to meet the views of the clerical and feudalistic elements in the majority of the House of Deputies. The number of days of obligatory attendance can be greatly reduced at the request of a commune. Religious instruction is made a more important branch, and is to be imparted in the faith of the majority of a commune. The Poles, who, because they hold the balance of power in the Reichsrath, can usually impose their will on the Government, secured the exemption of Galicia from the provisions of the new school ordinance.

Hungary.—The kingdom of Hungary possesses an ancient constitution, consisting of fundamental statutes enacted at various dates since the foundation of the kingdom in the ninth century. The Constitution was abrogated after the rebellion of 1848, restored in 1860, and extended to its ancient limits in 1867, when the national independence of Hungary was finally re-established. The Hungarian Diet consists of an upper chamber, called the House of Magnates, and a lower, called the House of Representatives. The House of Magnates was composed in 1882 of 2 royal princes, 50 archbishops and bishops of the Roman Catholic and Greek Churches, 672 peers and dignitaries of Hungary and Transylvania, 5 regalists from Transylvania, and 2 deputies of Croatia—in all, 731 members. The House of Representatives, elected directly by all citizens who pay eight florins in direct taxes, consisted in 1882 of 334 deputies from Hungarian districts and towns, 75 from Transylvania, 34 delegates from Croatia, and 1 from Fiume.

The executive power is exercised by a responsible ministry, composed as follows: President of the Council, Koloman Tisza de Boros-Yenö, who has been chief minister since Feb. 25, 1877; Minister of Finance, Count Gyula Szapary, appointed Dec. 6, 1878; Minister of National Defense, Count Gedeon Raday, appointed Oct. 10, 1882; Minister *ad latus* to the King, Baron Bela d'Orczy, appointed Aug. 12, 1879; Minister of the Interior, Koloman Tisza; Minister of Education and Public Worship, Dr. August de Trefort, appointed Feb. 26, 1877; Minister of Justice, Dr. Theodor Pauler, appointed Dec. 6, 1878; Minister of Public Works and Communications, Baron de Kemeny, appointed Oct. 14, 1882; Minister of Agriculture, Industry, and Commerce, Count Szechenyi, appointed Oct. 14, 1882; Minister for Croatia and Slavonia, Count de Bedekovich, appointed Feb. 26, 1877.

Political Chronicle.—One of the first acts of the Hungarian Parliament, which met in October, 1882, was to remove from the committee of education the elements that opposed making the Magyar tongue the national language of instruction. The chief contest was over the classical and scientific intermediate schools of Transylvania, and the educational supervision of the Evangelical Church in that province. The bill, elaborated in the committee, and carried March 17th by a large majority, prepares the way for the substitution of Hungarian for German in these schools, and Roumanian for the intermediate schools in which Roumanian is the language of instruction. It requires all candidates for teachers' positions in the intermediate schools of the monarchy to submit to a government examination conducted in the Magyar tongue. Three of the four years of preparatory study may be passed in foreign universities, but the final examination must be passed in a Hungarian university, and requires a literary training in the national language.

The Ritual Murder Case.—A criminal trial which was held in June shows that the antipathy against the Jews in eastern Europe, though springing from economical motives, contains an element of superstitious hatred known elsewhere only from the legends of the middle ages. In the village of Tisza-Eszlar, a Christian girl, named Esther Solymossy, suddenly disappeared in the spring of 1882. The rumor was started that the Hebrews of the village had murdered her to obtain the blood of a Christian virgin, which, according to the ancient fable, they mix in their Passover cakes. A malicious petty magistrate, Bary, who had charge of the preliminary examination, influenced or suborned a Jewish boy, named Moritz Scharf, to accuse Salomon Schwartz, and some other Jewish butchers, of cutting her throat, and a number of others, among them his own father, of being witnesses and accomplices in the crime. The girl had been sent to a neighboring village to purchase dye. The last that was seen of her was in the vicinity of the synagogue on her return. The Jews were in the temple that morning trying candidates for the office of butcher to the congregation. Moritz Scharf testified that he saw the murder through the key-hole of the entrance-door. Two women declared that they heard cries and sobs. On this evidence the accused were brought to trial. The body of a drowned girl was found in the river Theiss three months after Esther

Solymossy's disappearance. It was clad in her garments, and was recognized as her remains by her father and others; but her mother, pastor, school-teacher, and numerous acquaintances denied the identity. A commission of medical experts reported that it was the corpse of an older person than Esther, and of one not accustomed to hard labor. A second commission, composed of university professors, found that the marks of physical development did not indicate an age of more than fourteen years. The evidence of the body, the modification of the statements of neighbors who heard cries, and the confused and contradictory testimony of the Hebrew boy under cross-examination, would have abundantly exculpated the prisoners if additional suborned testimony had not strengthened the theory that the corpse was a spurious one placed in the river by members of the Jewish congregation to defeat the evidence against the accused. Two Jewish raftsmen confessed that they had been employed to convey the dead body and deposit it in the water where it was found. The public prosecutor, Szeyffert, declared in taking the case that he did not believe in a ritual murder, and only took part in order to have the evidence sifted and the truth brought out. Beyond this the Government did not intervene in the proceedings. The prosecution was conducted by lawyers retained by anti-Semitic partisans. The trial was interrupted by exhibitions of popular passion, and an anti-Semitic outbreak was feared. The trial ended in the acquittal of the ten prisoners. The effect was eventually to confine the anti-Semitic movement in Hungary more within logical bounds. The excitement continued, however, for some time after the trial, and in various places in North Hungary outbursts of fanaticism occurred. At Tisza-Eszlar there were incendiary fires. At Presburg, riots, like those of the preceding year, required the services of the military to suppress. The Scharf family were mobbed out of Pesth, and their advocate, Dr. Eötvös, was the object of angry demonstrations at Nyiregyhaza. At Zala Egersseg, in Western Hungary, serious riots, in which the neighboring peasantry took a prominent part, began Aug. 23d, and lasted several days. The garrison of the town were unable to preserve order or to prevent the mob from sacking the Jewish quarter. In a riot at Szegitvar, Sept. 2d, artisans broke into and wrecked the stores of Jewish shopkeepers, and were fired upon by the police, but not cowed until the arrival of troops.

The Hungarian Government maintained throughout the anti-Jewish agitation a firm attitude, and not only employed every means to quell disorder, but gave no countenance to the popular demands for the repeal of Jewish emancipation or any class legislation directed against the Jews. Yet Minister Tisza acknowledged that there was a Jewish question of an economical nature, and that the evils would not cease until the social causes were removed. The public-houses throughout the country are kept by Jews. They combine with their trade that of the money-lender, and with other usurers, all of the Hebrew race, keep the peasantry in a condition of economical subjection. The Government brought in bills designed to abate the evils, one of which deprives wine and liquor sellers of legal remedies for the collection of debts for drink, and another is a usury law with severe penalties and elaborate safeguards.

The Croatian Troubles.—The Hungarians, who have observed with a feeling of indifference if not with sympathy the victories of the Czechs over the German Centralists, and the federalistic movement among the other Slav nationalities in Austria, were confronted in 1883 with a Slavic question of their own. The results of the Russian War, and the provisional occupation of Bosnia by Austria, were to arouse in Servia the ambition of uniting the Serbic race into one kingdom; then, since Austria was not likely to relinquish the occupied provinces, to excite hopes in Montenegro of becoming the head of a great Serbic nation under the protection of Russia; and, next, of stirring with similar aspirations the petty nationality of the Croats. The Great Croatian idea looks to the creation of a third member of the Dual Monarchy, a South Slav monarchy with its capital at Agram. The Croats have certain grounds for considering themselves the fittest instrument for the mission of Austria among the South Slavs. Their fidelity and attachment to the Hapsburg dynasty are proverbial. They claim to have been of great assistance in rescuing the dynasty in the conflict with the rebel Magyars in 1848. Since then the Croats have progressed in intelligence and culture as much as or more than the Magyars. The development is in the direction which was given it under German control before their incorporation, sorely against their inclination but in obedience to the will of the monarch, in the kingdom of Hungary. They have not been treated with oppression by the Hungarian Government, but have been permitted to retain their old laws as to land, inheritance, and the election of magistrates. They are not fairly represented in the Hungarian House of Magnates, owing to the same electoral system which denies to the Germans their just quota of representatives in the Cisleithan legislative bodies. The Croatian deputies in the lower house have, however, exercised an influence on the Hungarian Government which is out of proportion to the importance of their province, because they have always voted with the ministry, and on several occasions when the opposition was strong their vote saved the Government from defeat. The incorporation of the Military Frontier, which operation was completed in 1882 and 1883, increased the importance of the province, and gave an impetus to the movement for the union of the districts inhabited by Servians and

Croats, in Dalmatia, Slavonia, Istria, Carniola, and Carinthia, with Croatia and the Military Frontier, to form a Croatian kingdom under the Austrian crown, to which Bosnia and Herzegovina could be added, with the expectation that the other Balkan lands inhabited by the Serbic race would gravitate toward this great state in the future permutations of the Eastern question. The Servians of Croatia and the Austrian provinces, who differ from the Croats, not in language or race, but in religion and political tendencies, were strongly opposed to the occupation of Bosnia. They sympathize with the idea of a Great Servia.

In August began a series of violent Croatian demonstrations in Agram and different parts of the country. The first act was the tearing down of the Hungarian arms from the door of the Finance Office in the capital. These escutcheons with bilingual inscriptions had recently been put up—an act which was suspected of being the commencement of a policy for the suppression of the Croatian language and institutions. Magyar inscriptions and signs were destroyed by rioters in all the towns. The military were called into requisition, and, in consequence, the disturbances became more violent. Some districts were placed under martial law. In Maria Bistrica, in a collision between gendarmes and Croat peasants, several rioters were killed. The Ban of Croatia, Count Prejacsevich, who had not been a popular administrator, showed sympathy with the movement and declined to replace the Hungarian arms with the obnoxious Magyar inscription on the front of the government buildings. He was obliged to resign his office in consequence, and now received popular ovations as a great patriot. There were signs of the Slavic ferment in the neighboring Austrian provinces. In the beginning of the year Baron Jovanovich created an uproar in Dalmatia by ordering the official communications between civil servants to be made in German. By an act of the Reichsrath this order was subsequently rescinded. In Darenzo, where the Istrian Provincial Diet meets, a Croat deputy made an attempt to debate in his national tongue instead of in Italian, which is the official language. The Dalmatian deputies obtained the enactment by the Reichsrath of a law directing judicial proceedings in their province to be held in the Servian or Croatian dialects, instead of in Italian. The troubles in Croatia attained the magnitude of an insurrection. The Emperor did not nominate a Ban to succeed Count Prejacsevich, but appointed a royal commissioner with extraordinary powers to restore civil order. The Minister for Croatia, Bedekovich, resigned his portfolio. Gen. Ramberg was selected for this service. In the Zagorien district, encounters took place between the military and the rioters, and the troops were repelled at Krapina, Töplitz, and Sopo. The commissioner issued a proclamation stating that the bilingual official notices would be continued, to demonstrate the fact that political questions were not to be settled by street riots. The escutcheons were replaced on the government buildings at Agram on the 7th of September, and on the following day occurred another riot. The economic distress of the people made them more susceptible to the enticements of agitators, and complicated the movement with socialistic and anti-Semitic demonstrations. The men at the head of the Imperial and Hungarian governments were not inclined to proceed to extremes, and the troops used great forbearance. The suspension of executions for the collection of taxes caused a partial subsidence of the agitation.

After Agram was tranquillized, an insurrection broke out in the Military Frontier, which, like the one in Zagorie, was of an agrarian nature. At Farkasevinez an anti-Magyar riot occurred on the 20th of September, and ten peasants were killed by the soldiery. Persons concerned in the riots at Agram were brought to trial and, September 30th, sentenced to short terms of imprisonment. At the meeting of the Hungarian House of Deputies on the 1st of October, the Croatian deputies refused to take part in the proceedings pending the settlement of the question of the escutcheons. They formulated the national demands, which embraced the restitution of the escutcheons with Croatian legends only, the recall of the royal commissioner and the appointment of a Ban, the establishment of constitutional government, the convocation of the Croatian Diet, and the immediate discussion of the compromise law under which Croatia was attached to Hungary. The Premier announced a policy of conciliation and of willingness to discuss and remedy any grievances. The complaints of unfair taxation were shown to be groundless as far as the Central Government was concerned, but not as regards the local authorities. Peculations of the magistrates of their own appointment aggravate the burden of taxes. All intentions of suppressing the language, nationality, or autonomic rights of Croatia were disclaimed. After a spirited debate, the Parliament approved the proposal of the ministry to replace the demolished escutcheons without any inscriptions, letting those remain which bore Croatian inscriptions. The royal arms were accordingly erected on the 16th of October, after the disturbances were over, without either Magyar or Croatian legends.

B

BAPTISTS. The "American Baptist Year-Book" for 1883 gives tables of statistics of the regular Baptists of the United States, of which the summary of the footings is as follows: Number of associations, 1,167; of churches, 26,931; of ordained ministers, 17,090; of members, 2,394,742; number of additions by baptism during 1882, 94,680; number of Sunday-schools, 15,138, with 130,606 officers and teachers and 1,065,195 pupils, and 13,804 baptisms in the Sunday-schools. Amount of benevolent contributions reported, $5,219,396. Increase of members during the year, 58,720. The educational institutions of which the "Year-Book" gives reports include 8 theological seminaries, with 45 instructors and 451 students; 33 colleges and universities, with 291 instructors and 4,177 students; and 52 academic institutions and seminaries for young men and young women, with 391 instructors and 6,554 students.

The numerical summaries of the regular Baptists in other countries are as follow:

	Churches.	Ordained ministers.	Members.
North America (outside of the United States)	809	595	99,477
South America (Brazil)	8	4	225
Europe	3,108	2,247	342,240
Asia	650	322	53,410
Africa	87	38	6,632
Australasia	124	92	10,122
Total for the world	31,812	20,378	2,905,848

Whole number of associations, 1,268.

The number of other Baptist churches than the regular Baptists in the United States is as follows:

	Churches.	Ministers.	Members.
Anti-Mission Baptists	900	400	40,000
Church of God	400	350	30,000
Free-will Baptists	1,485	1,256	76,706
Seventh-day Baptists	87	108	8,606
Six-principle Baptists	29	17	2,075

Bible Convention.—The regular anniversary meetings of the Northern Baptist benevolent societies of the United States were preceded by a "Bible Convention," which was called in accordance with action taken by the several societies at their anniversaries in 1882, "to consider and decide what the Baptist denomination ought to do in reference to translations, versions, and the circulation of the Bible in all lands, and through what organizations this object shall be effected." The convention met at Saratoga Springs, N. Y., May 22d. The Hon. James L. Howard, of Connecticut, presided. Resolutions were adopted, as follow:

Whereas, In the year 1883, the Baptists of America resolved to give to the heathen the pure Word of God in their own languages, and to furnish their missionaries with all the means in their power to make their translations as exact a representation of the mind of the Holy Spirit as may be possible; and

Whereas, Their missionary translators were instructed to endeavor by earnest prayer and diligent study to ascertain the exact meaning of the original text, and to express that meaning as exactly as the nature of the language into which they translate the Bible will permit; therefore,

Resolved, 1. That this convention earnestly reaffirms these positions as sound and obligatory.

2. That as these principles are defined, it is the duty of American Baptists to circulate versions made upon these principles in all languages, as far as such versions can be secured.

3. That as there are differences of opinion in our denomination touching the several versions now existing in English, on the score of fidelity, it is the right of every Baptist to use that version which best commends its faithfulness to his conscience in the sight of God.

4. That while, in the judgment of this convention, the work of revision is not yet completed, whatever organization or organizations shall be designated for the prosecution of home Bible work among American Baptists should now circulate the commonly received version; the new Revised Revision with the corrections of the American revisers incorporated in the text, and the translation of the American Bible Union, according to demand, and that all moneys especially designated for the circulation of either of these should be faithfully appropriated in keeping with the wish of the donor.

Furthermore, the convention expressed its judgment that the Bible work of the Baptists should be done by the two existing societies, the foreign work by the American Baptist Missionary Union, and the domestic work by the American Baptist Publication Society; that the Missionary Union "should more fully recognize the necessity of accurate translation and wide distribution of the Word of God in foreign lands," and should use every effort to enlarge its means; that the Publication Society should establish a new department, to be designated as the Bible Department, with a special secretary, to be charged with the duty of collecting and expending funds for home Bible work:

That as a guarantee that all the chief views current in our denomination shall be represented in the conduct of our home Bible work, and as a provision for a settlement of the questions which have arisen with regard to the administration of that work, the American and Foreign Bible Societies be requested to name three persons to be voted for as managers of the Publication Society, and that upon the election of these persons as such managers, the American and Foreign Bible Societies be requested, in the interest of Baptist unity, to dissolve and thenceforth cease to exist as a separate organization;

and that the Publication Society should establish such relations with the American Baptist Home Mission Society that the missionaries of the latter body may co-operate with it in the circulation of the Bible.

The American and Foreign Bible Society, at its annual meeting, May 24th, determined to accept the advice of the convention, and to make arrangements to disband as a separate

organization, and turn over its work to the Publication Society and the Missionary Union. The other societies concerned in the proposed scheme also resolved to accept the functions which its execution would impose upon them.

American Baptist Missionary Union.—The annual meeting of the American Baptist Missionary Union was held at Saratoga Springs, N. Y., May 24th. The Rev. George Dana Boardman, D. D., presided. The receipts of the Union for the year had been $327,800, and its expenditures $316,410. The condition of the missions is exhibited in the following table:

MISSIONS.	Missionaries.	Native preachers.	Churches.	Baptized.	Members.
ASIATIC MISSIONS.					
Burmah	99	485	471	1,649	24,094
Assam	15	37	27	145	1,851
Telugus, India	37	95	39	2,074	22,277
Chinese	25	48	39	129	1,685
Japan	12	19	9	69	289
Totals	188	684	585	4,066	50,146
Africa	2	1	7	....	429
EUROPEAN MISSIONS.					
Sweden	..	313	331	4,510	22,616
Germany	..	350	146	1,992	28,088
France	..	9	9	69	759
Spain	..	4	3	7	150
Greece	..	3	1	1	7
Totals	..	679	490	6,579	51,570
Grand totals	190	1,364	1,082	10,645	102,145

A newspaper statement had charged the treasurer of the society with taking advantage, in settlements with the missionaries, of the differences in exchange in the valuation of dollars and rupees at the expense of the missionaries and to the profit of the treasury. This charge was answered by the chairman of the committee of finance, who, after a special examination of the subject and of the treasurer's accounts, reported that "for twenty-three years previous to 1878 the changing of dollars into rupees favored the missionaries on the field by the *appreciation* of the rupee, while for three years afterward the Union gained by the *depreciation* of the value of the rupee. To remove all cause for dissatisfaction by the missionaries in 1879, the Union now changes its dollars into pounds sterling and then into rupees, so that the missionaries now receive the full amount of their salary of dollars in rupees. All of the gain during five years in the depreciation of the rupee is strictly accounted for by the treasurer's report." Resolutions were adopted expressing satisfaction with the statement, and "unqualified confidence" in the late treasurer.

American Baptist Home Mission Society.—The annual meeting of the American Baptist Home Mission Society was held May 25th. The Hon. James L. Howard presided. The total receipts of the society for the year had been $283,944; the permanent and trust funds held by it amounted to $497,535; and an indebtedness was returned of $49,967. Six hundred and seven missionaries had been employed, of whom 362 were laboring among American, 100 among foreign, and 37 among other populations; and they had supplied 1,762 churches and out-stations. The fourteen schools among the colored people and the Indians, and in Mexico, employed 112 teachers, and were attended by 2,718 students. Besides forty-four States and Territories in the United States, the society had prosecuted its work in British Columbia, Manitoba, and Mexico. Its work among Scandinavians was conducted in nine States and Territories, among French in six States, and among Germans in seventeen States and Territories; and missionaries had been appointed representing ten nationalities or people, viz., Americans, Germans, Swedes, Danes, Norwegians, French, Mexicans, Indians, negroes, and Chinese. The Indian University, in the Indian Territory, was in a flourishing condition, and was attended by 42 young men and 53 young women.

The Woman's Baptist Home Mission Society had received during the year $22,000 in cash and $4,524 in goods, and had disbursed $22,348. It had employed 26 missionaries, 6 missionary teachers, and 10 Bible-women, who were laboring among the Indians, the freedmen, Scandinavians, Germans, and Mormons.

American Baptist Publication Society.—The anniversary of the American Baptist Publication Society was held May 28th. The receipts of the society for the year had been $399,673 in the business department, and $122,246 in the missionary department. Forty-five new publications had been issued, and 122,300 Bibles had been distributed.

Southern Baptist Convention.—The Southern Baptist Convention met at Waco, Texas, May 11th. The Rev. P. H. Mell was chosen president. The principal business of the meeting consisted in a review of the progress of the missionary and benevolent work of the Southern Baptist churches. The income of the Board of Missions for the year had been $56,805, and the board had a balance of $6,100 in its treasury. Reports were made of the condition of the several missions, as follow: The Mexican mission had 65 church-members, of whom 13 had been baptized during the year. Two missionaries, with three assistants, besides native helpers, were employed at eight stations. In Brazil, four missionaries, all foreign, were employed at the stations of Santa Barbara and Bahia, where were 50 church-members, and in which five persons had been baptized during the year. Three missions were sustained in China, employing 34 missionaries, and with them were connected 587 church-members. In Africa were seven missionaries, at five stations, with 100 church-members and 194 pupils in schools. The missions in Italy included ten stations, at which were 14 missionaries and evangelists, and with which were connected 220 members. Seven missionaries had been sent out by the board during the year.

The Home Mission Board reported that it employed 95 laborers, who had supplied 276 churches and stations and baptized 245 persons, had organized 55 Sunday-schools with 2,680 teachers and pupils, and had collected $844 for missions, and $2,000 for church-building purposes. The board had received co-operation in its work from the Baptist State organizations of Georgia, Mississippi, Louisiana, Arkansas, Florida, Texas, and Missouri. A favorable report was made of the Indian Muscogee mission. During the thirty years that the late principal missionary, the Rev. Dr. Buckner, labored in it, an average of one church was organized and one minister was ordained for every year, and 75 conversions took place annually. The number of members was now 2,600. The subscriptions in behalf of the theological seminary had been sufficient to pay its expenses during the past three years, and the institution had now a surplus. It had been attended by students from every Southern State except Maryland, and from other States and from Mexico.

German Baptist Conferences.—In the German Baptist conferences, six new churches were organized in 1882, making 168 in all connected with the conferences, with a membership of 30,442, against 28,956 in the previous year. The number of baptisms during the year was 2,967. The number of Sunday-schools had increased during four years from 178, with 691 teachers and 8,954 pupils, to 402, with 1,146 teachers and 8,954 pupils.

Baptist Convention in the Indian Territory.—A Baptist Convention, composed of the associations and churches of all the Indian nations settled in the Indian Territory, was organized in Tahlequah, Cherokee Nation, in June. Representatives were present of the Cherokees, Creeks, and Seminoles, of the Plains Indians at the Wichita agency, and of other bodies, making in all seven Indian tribes, of three races and five languages, whose delegates participated in the proceedings. This organization was recognized and approved by the Choctaw and Chickasaw Association at its annual meeting in October.

Baptist Autumnal Conference.—The second Baptist Autumnal Conference was held in Boston, Mass., November 13th, 14th, and 15th. The Rev. Alvah Hovey, D. D., presided. The following topics were considered in papers read by appointed essayists and in general discussions: "Church Architecture" (Rev. C. J. Baldwin and Rev. J. R. Thomas); "The Social Element in Church Life and Church Work" (Rev. W. E. Hatcher, D. D.; Rev. J. B. Simmons, D. D.; Hon. J. M. S. Williams; J. C. Hiden, D. D.; and Rev. Mr. Rhoades); "The Sanitary Provisions of the Mosaic Code" (George H. Fox, M. D.); "Christianity and the Body" (President S. L. Caldwell, of Vassar College); "Christianity in Politics" (Rev. E. P. Gould, D. D.); "The Divorce Question" (Rev. H. S. Barrage, D. D.; Judge Buchanan, of New Jersey; President A. Owen, of Denison University); "Modern Biblical Criticism" (Rev. T. J. Conant, D. D.; Prof. Howard Osgood, D. D.; Prof. D. G. Lyon, Rev. J. A. Smith, D. D., and Prof. D. J. Hill); "The Coming Ministry" (President E. Dodge, of Madison University; Rev. J. C. Hiden, D. D., and Rev. P. S. Moxon); "Worldliness" (Rev. T. Edwin Brown, D. D.; Rev. H. M. King, D. D., and Rev. A. C. Dixon).

Convention of Liberal Baptists.—A convention of "Liberal" or "Open-Communion" Baptists, the call for which was signed by representative men of the Free-will Baptist Church, the Free Baptists of New Brunswick and of Nova Scotia, the Church of God, the General Baptists, and the Separate Baptists, met in Minneapolis, Minn., October 2d, with the declared object of promoting a more intimate acquaintance and a closer union among the different branches of the church in whose name it was held. The Rev. O. B. Cheney, of Maine, was chosen president of the convention. A paper which was read on the subject of "The Liberal Baptists of America," sketched the rise of the General Conference of the Free-will Baptists of New England, with which 78,000 members are now connected, and described other Free Baptist organizations, as follows:

In 1823 a movement, under Elder Stimson, began in Indiana. The people took the name of "General Baptists," and now have in the Western States not less than 13,000 members. About 1828 a few churches separated from the United Baptists and took the name of "Separate Baptists." Churches have been planted by them, and we now know of ten associations, with a membership of not less than 7,000 communicants. We also have Free Christian Baptists in Nova Scotia and the Free Baptists of New Brunswick. The people known as the "Church of God," organized in Pennsylvania in the year 1830, now embrace upward of 30,000 members, and sustain several newspapers and institutions of learning. If we give a summary, the showing is: Free Baptists, 78,000; Church of God, 30,000; Nova Scotia and New Brunswick, 14,000; General Baptists, 13,000; Free Baptists in North Carolina, 10,000; Separate Baptists, 7,000; Free Baptists in Western States, 5,000: total, 157,000.

A report from the business committee, which was adopted, opened with a declaration that "the several associations of churches of Jesus Christ in America, who hold the evangelical faith, practicing believers' baptism, and excluding no recognized Christian from the Lord's table, *are one* by the strongest ties, that of a common faith and spirit, unity of purpose, mutual respect, and paternal love, and hence should be one in formal fellowship and methods of co-operation." The action of the convention embodied recommendations that a year-book be published, representing all bodies of Liberal Baptists; that a quarterly publication, or magazine, be established; that there be co-operation in the support of foreign missions; that Liberal Baptist literature be circulated; that the convention be perpetuated by the election of an executive committee authorized to represent the Liberal Baptist bodies and to call another convention; that the sev-

eral bodies be urged to correspond with one another; and that the cause of education be given every possible encouragement. An executive committee was appointed, of which the Rev. G. H. Ball, of New York, is chairman.

Free-will Baptist Church.—The twenty-fifth General Conference of the Free-will Baptist Church was held in Minneapolis, Minn., in October. The Rev. Ransom Dunn, D. D., was chosen moderator. The most important business transacted was the discussion of the resolutions of the General Convention of the Open-Communion Baptists, which were approved, and, so far as they affect the Free-will Baptist Church, adopted. A new charter and constitution for the Foreign Missionary Society were adopted, by the operation of which the scope and power of that organization, and its capacity to hold property, are expected to be greatly increased. Among the important changes made in the constitution are the incorporation of provisions for the representation of the several denominations or organizations of open-communion Baptists in the Executive Board of the society, and for the admission of women to full membership and on equal terms with men. The society began the year with a deficiency of several thousand dollars, but was able to show a surplus above all expenditures on closing its accounts. The mission is in Orissa and Bengal, India, and returned 551 communicants. Twenty members had been added by baptism during the year. The whole number of pupils in the schools was 3,089; of whom 347 were Christians, 1,043 Hindoos, 261 Moslems, and 1,438 Santals. Measures were taken for the organization of a church extension department of the Home Mission Society. A committee was appointed to draft a course of study for general use among ministers, and to encourage the organization of ministers' conferences for discipline and study. The conference recommended that a pastor or stated supply of a church, whose membership is elsewhere, be amenable to the church with which he is laboring, as if he were a member of it. Provision was made for the organization of a Ministers' Relief Association. An offer by Mr. M. A. Shepherd of property valued at $50,000 as a gift for a publishing and school fund was accepted, and steps were taken toward making an application of the sum. A committee was appointed to revise the constitution of the General Conference. Gratification was expressed over the revival of friendly feeling between the North and the South. Interest was declared in the education of freedmen and in civil-service reform. Efforts for the suppression of obscene literature were commended, and the action of the Government in refusing the use of mails for the circulation of such matter was approved.

Seventh-Day Baptist Church.—According to the statistical reports presented to the Seventh-Day Baptist General Conference, in September, the whole number of members of the church for 1888 was 8,611, showing a net increase during the year of 8. The whole number of baptisms reported was 151. Nine churches had been organized, making the whole number of churches connected with the denomination 99. The number of Sabbath-schools was 86, and they returned 5,773 scholars. The denomination is represented in England by the Mill-Yard Church, London, instituted in 1654, and returning for 1883, 14 members, and the Natton Church, Tewkesbury, instituted in 1668, and returning 4 members. It has also mission churches at Shanghai, China, with 18 members, and at Haarlem, Holland, with 19 members. The American Sabbath Tract Society had received during the year $8,968, and disbursed $7,109, and had distributed 179,534 pages of tracts. The operations of the society were carried on by the distribution of tracts and periodicals in the United States, England, and Holland, and by the use of tents, in which preaching services were conducted, carried from place to place. Under its direction are published a general religious weekly newspaper, the "Sabbath Recorder," and two journals of a more special character. The publication of a quarterly periodical is contemplated. The Seventh-Day Baptist Education Society returned the amount of its funds and receipts at $45,303. Only Milton College, Wis., and Alfred University, N. Y., made detailed statements of their condition. The whole number of students in these two institutions was 733. The receipts of the missionary society were $8,154, in addition to which the society returned a permanent fund of $1,454. Twenty-six missionaries were employed to visit 41 churches and 94 other preaching-places, in various parts of the United States, and reported in connection with the missions, 336 "Sabbath-keeping" families, 937 church-members, with 936 in Bible classes, and 23 added by baptism during the year. An American missionary and his wife, two native preachers, a Bible-woman, and three day-school teachers were employed in connection with the mission at Shanghai, China, and a woman medical missionary was to be sent out. Three day-schools returned 66 scholars. A boarding-school was to be established. One missionary was employed at Haarlem, Holland, who returned 4 additions to the church, and Bible-schools at Haarlem and Workum with 24 scholars. The accounts of the Seventh-Day Baptist Memorial Fund were balanced at $9,564.

The Seventh-Day Baptist General Conference met at Adams, N. Y., September 19th. W. A. Rogers presided. The Committee on Denominational History reported that an autobiography of Elder Alexander Campbell and a number of papers on the "Ward family" had been published during the year. Measures were taken for the establishment of a "Seventh-Day Baptist headquarters" in connection with the assembly-grounds at Chautauqua. Resolutions were passed against the system of licensing

the traffic in intoxicating liquors, and demanding that "the evil shall be prohibited, not protected, by the laws of the land."

Baptist Churches of Canada.—The Baptists of the Dominion of Canada fall naturally into two grand divisions, viz., the Baptists of Ontario, Quebec, and Manitoba, and the Baptists of the Maritime Provinces. Owing to the great distance between the eastern and the western portions of Canada, intimate denominational relations between the two sections have never been established, and they have united in no branch of denominational work.

In Ontario, Quebec, and Manitoba, the Baptist denomination holds numerically the fifth place among the religious bodies, being outranked by Roman Catholics, Anglicans, Presbyterians, and Methodists. The statistics of the denomination for 1883 are: Number of ministers, 260; of church-members, about 27,000; of adherents, about 125,000. Of these about three fourths are in the Province of Ontario, one sixth in the Province of Quebec, and the remainder (500 or less) in the Northwest. About 26,000 of these are known as "Regular Baptists," and are included in 15 associations, which make restricted communion a term of fellowship. Outside of these associations are 25 or 30 churches with a membership of about 1,100, which differ in certain minor points from the associated churches.

Each province has a Home Mission Convention of its own. The Ontario Convention (founded in 1852) expends about $6,000 annually in assisting feeble churches, and in opening up new fields within the province. During the conventional year 1881–'82, 28 missionaries were employed, who occupied 63 stations and received 250 persons into the fellowship of the mission churches. The Canada Baptist Missionary Convention, East (organized in 1859), expends nearly $2,000 annually in home evangelization. During the year 1881–'82, 18 missionaries were employed, who occupied 47 different stations and baptized 52 converts. The Regular Baptist Missionary Convention of Manitoba and the Northwest (organized in 1881) has for its aim the early occupancy of the Canadian Northwest, and has secured the co-operation of the American Baptist Home Mission Society, the American Baptist Publication Society, the Baptist Missionary Convention of the Maritime Provinces, and of individuals and churches in Ontario and Quebec.

For foreign mission work there is one general society, the Regular Baptist Foreign Mission Society of Ontario and Quebec (founded in 1866), and two women's auxiliary societies, one for Ontario and one for Quebec. These support a vigorous mission among the Telugus of India at an annual expense of about $12,000, of which amount the women's societies contribute nearly one third. The missionaries report 292 baptisms during the year 1881–'82. A seminary has been founded at Samulcotta for the training of native preachers and teachers. The Grand Ligne Mission among the Roman Catholic French of the Province of Quebec receives contributions from Ontario, Quebec, the United States, etc. It has occupied a considerable number of stations, and sustains a school.

Woodstock College, founded in 1857, is provided with a fund of $100,000 for grounds and buildings, and an endowment subscription of $85,000, of which more than $30,000 have been paid in. It furnishes four independent courses of study, and admits on equal terms students of both sexes. Toronto Baptist College was founded in 1879 by the aid of a gift and a pledge of support from Senator William McMaster, as a theological seminary, and has absorbed the former theological department of Woodstock College. It has a building valued at $80,000, and four organized chairs of instruction. It was opened in 1881, and had eighty-one students during the first year.

The work of publication is conducted by the Standard Publishing Company, which has a capital stock of $100,000. The dividends from $45,000 of this stock, which was furnished by Senator McMaster, have been devised by him, provided they be not more than 6 per cent., to the Home and Foreign Missionary Societies and the Superannuated Ministers' Fund.

The Baptist Union of Canada (organized in 1862) is composed of officers of the denominational societies and colleges and of pastors and delegates of churches, and meets annually for the promotion of fraternal relations and the discussion of topics affecting the welfare and progress of the denomination.

In the maritime provinces the Baptists constitute a much larger proportion of the population, and are actually more numerous than in the western provinces. In New Brunswick they are outnumbered only by the Roman Catholics; in Nova Scotia, only by the Roman Catholics and Presbyterians; and in Prince Edward Island they rank fourth. The numerical strength of the denomination is, according to the statistics for 1883: Number of ministers, 188; churches, 348; church-members, 37,428; and of adherents, about 175,000. The work of the denomination in home missions, foreign missions, education, ministerial relief, etc., is transacted through the Baptist Convention of the Maritime Provinces. The Home Mission Board, in 1881–'82, assisted, at an expense of nearly $5,000, in the support of 58 missionaries, occupying 50 fields of labor and serving 97 churches, in which 282 persons were baptized. Two churches were organized during the year. The Foreign Missionary Board expends $10,000 a year, and supports three missionary families and a Zenana worker among the Telugus of India. The Ladies' Aid Societies furnished more than one third of the missionary contributions for 1881–'82. The literary institutions of the convention are the University of Acadia College, and Horton Academy, where students

are prepared for the college. Acadia College has buildings and grounds valued at $100,000, and an endowment fund of nearly $100,000, with an indebtedness of $30,000. It has a literary department with seven professors, and a small theological department. At Horton Academy separate departments are provided for young men and young women.

English Baptist Missions.—The English Baptist Missionary Society received, during the year ending with its anniversary in April, £60,722. It had begun the year with a debt of £9,000, the larger part of which had been liquidated, but, as the operations of the society had been at the same time much enlarged, its books still showed a deficit of £4,575. Reports were made at the anniversary, of the condition of missions in India, Ceylon, China, Japan, West Africa (Cameroons and Victoria); the new Congo mission in Central Africa, where eleven missionaries were employed; the West India islands, and Norway, Brittany, and Italy, in Europe. Colleges were maintained for Hindoo and Urdoo speaking young men at Delhi, and for Bengalis at Serampore, India, and at Calabar, Jamaica. At the autumnal meeting of the Baptist Union, held in Leicester, in October, the debt of the society was reported to be all discharged. It was also announced that fourteen missionaries were to be sent to China, sufficient funds having been promised to assure their outfit and annual maintenance.

The Baptist Zenana Mission, which is affiliated with this society, labors particularly among the women in India. It is supported by women, and employs 32 women as visitors to the Zenanas, and 50 Bible women and native teachers, and maintains 20 schools, which are regularly attended by 800 pupils.

BASUTOLAND. See CAPE COLONY.

BECHUANALAND. See CAPE COLONY.

BELGIUM, a constitutional monarchy in Western Europe. The King has power to convoke and dissolve the Legislature, and to conclude treaties; but treaties affecting the interests of the nation require legislative sanction. The House of Representatives is elected in the ratio of one member to at least 40,000 inhabitants, by citizens paying direct taxes to the amount of 43 francs, which restricts the franchise to about one thirteenth of the adult male population. The deputies are elected for four years, one half of the terms expiring every two years. All laws relating to finance and military service must originate in this Chamber. The members of the Senate are elected in the same way as the deputies; their number is exactly half that of the deputies, and their terms are twice as long. The reigning sovereign is Leopold II., born April 9, 1835, who succeeded his father, Leopold I., December 10, 1865.

The Cabinet.—The present Cabinet consists of the following members: Minister of Foreign Affairs and President of the Council, Hubert J. W. Frère-Orban, appointed June 19, 1878; Minister of Justice, Jules Bara, appointed June 19, 1878; Minister of War, General Gratry, appointed Nov. 8, 1880; Minister of Public Works, Sabier Olin, appointed April 5, 1882; Minister of the Interior, Rolin Jaequemyns, appointed June 19, 1878; Minister of Finance, Charles Graux, appointed Nov. 8, 1880; Minister of Public Instruction, Pierre van Humbeeck, appointed June 19, 1878.

Area and Population.—The area of Belgium is 29,455 square kilometres, or 11,373 square miles. The area and population of the nine provinces into which the kingdom is divided, according to a census taken Dec. 31, 1880, were as follow:

PROVINCES.	Square miles.	Population.
Antwerp	1,098	577,282
Brabant	1,268	955,274
West Flanders	1,249	694,764
East Flanders	1,158	881,816
Hainaut	1,487	977,562
Liége	1,117	663,607
Limbourg	931	210,851
Luxembourg	1,706	209,118
Namur	1,414	332,620
Total	11,373	5,519,844

The density of population is 485 per square mile, exceeding that of any other country in Europe. In 1878 the number speaking French was reported as 2,256,860; Flemish, 2,659,890; both languages, 340,770; German, 38,070; German and French or Flemish, 28,980. Since the separation of Belgium from the Netherlands in 1830, the increase of population has been at the rate of one per cent. per annum. One fifth of the population follow agricultural pursuits, and one fifth trade and manufactures. The number of freehold proprietors in 1880 was 1,181,177, an increase of 29 per cent. since 1846. The population not only increases rapidly by natural increment, but in recent years by immigration to a slight extent. The population of Brussels, the capital, in 1880, was 394,940. There were six other cities with over 40,000 inhabitants: Antwerp, 169,112; Ghent, 131,431; Liége, 128,131; Bruges, 44,501; Mechlin, 42,381; Verviers, 40,944.

Religion.—The entire population, with the exception of about 15,000 Protestants and 3,000 Israelites, profess the Roman Catholic religion. The dissenting bodies not only enjoy full religious liberty, but their ministers, like the Roman Catholic priests, receive salaries from the state treasury. These salaries of the clergy, ranging from 600 to 1,360 francs for the parish priests, are supplemented by fees and contributions. By the census of 1880 there were 1,559 convents, containing 1,346 male and 20,645 female inmates.

Education.—The public-school system of Belgium has been for years the subject of bitter controversy between the Government party and the Clericals. The clergy have retained in a large measure the control of the education of the people, by maintaining schools supported

by private contributions, in opposition to the state schools. The educational work is done largely by Jesuits. The public schools are supported by the communes, the Government, and the provinces. The expenditure in 1880 amounted to 34,838,000 francs, about half of which was defrayed by the state. According to the military returns, about one sixth of the recruits are unable to read or write. Among the younger generation the proportion is considerably less. A law was passed in 1883 making Flemish the language of instruction in the intermediate schools in the Flemish parts of the country, but providing for preparatory departments in which both French and Flemish are to be taught.

Commerce.—The general commerce in 1881 was 2,787,831,075 francs' worth of imports, and 2,460,624,275 francs of exports; the special commerce by imports to the value of 1,629,871,040 francs, and exports to the value of 1,302,670,100 francs, the first representing the consumption of foreign and the second the exportation of domestic products. The largest import trade is with France and the next with the United States, followed by Germany, the Netherlands, Great Britain, and Russia. Of the exports, France takes the largest share, followed by Great Britain, Germany, and the Netherlands.

The coal-mines of Belgium produce about 16,000,000 tons per annum, supporting large metallurgical and other industries, and furnishing about 4,000,000 tons for export, chiefly to France.

The carrying-trade is mainly in the hands of the British. The mercantile marine in the beginning of 1882 numbered 68 vessels, of 75,666 tons, including 42 steamers, of 65,224 tons.

Communications.—Of 4,182 kilometres (2,600 miles) of railroad at the end of 1881, 2,888 kilometres were operated by the state and 1,294 by private companies. The working expenses in 1881 were 62·4 per cent. of the gross receipts of the state railroads, being 3·9 per cent. greater than four years before, owing to the purchases of unprofitable lines. The net earnings in 1881 were $4,540 per mile.

The total length of telegraph lines in January, 1882, was 5,693 kilometres; of wires, 25,404 kilometres. The number of messages in 1881 was 6,861,985.

The post-office carried in 1881, 77,627,488 private letters and 20,301,762 postal-cards, besides 12,891,656 official letters, 40,538,000 packages, and 82,573,000 newspapers. The receipts were 12,301,321 francs, and the expenses 7,425,683 francs.

Finance.—The expenditure of the Government has exceeded the revenue every year since 1876. The budget for 1882 estimates the revenue at 296,647,709 francs, and the expenditure at 310,755,895 francs. For 1883 the estimated revenue from the various sources was as follows:

SOURCES OF REVENUE, 1883.	Francs.
Land-taxes	23,082,990
Assessed taxes	16,522,000
Trade licenses	6,200,000
Mines	400,000
Customs	21,700,000
Succession duties	18,860,000
Excise on foreign wines and spirits	2,860,000
Excise on native spirits	17,030,000
Excise on beer and vinegar	9,804,750
Excise on sugar	8,805,000
Registration duties and fines	34,155,000
Domains	1,655,000
Post-office	8,145,400
Railways and telegraphs	120,250,000
Packet-boats between Dover and Ostend	550,000
Miscellaneous receipts	15,021,620
Total revenue	299,571,760

The expenditure for the various departments was estimated as follows:

BRANCHES OF EXPENDITURE, 1883.	Francs.
Interest on public debt	97,519,119
Civil list and dotations	4,847,175
Ministry of Justice	16,084,111
" Foreign Affairs	2,335,830
" Interior	23,437,101
" Public Instruction	21,597,997
" Public Works	92,778,855
" War	44,764,900
" Finance	15,816,030
Gendarmerie	3,518,200
Miscellaneous expenditure	1,658,500
Total expenditure	324,352,818

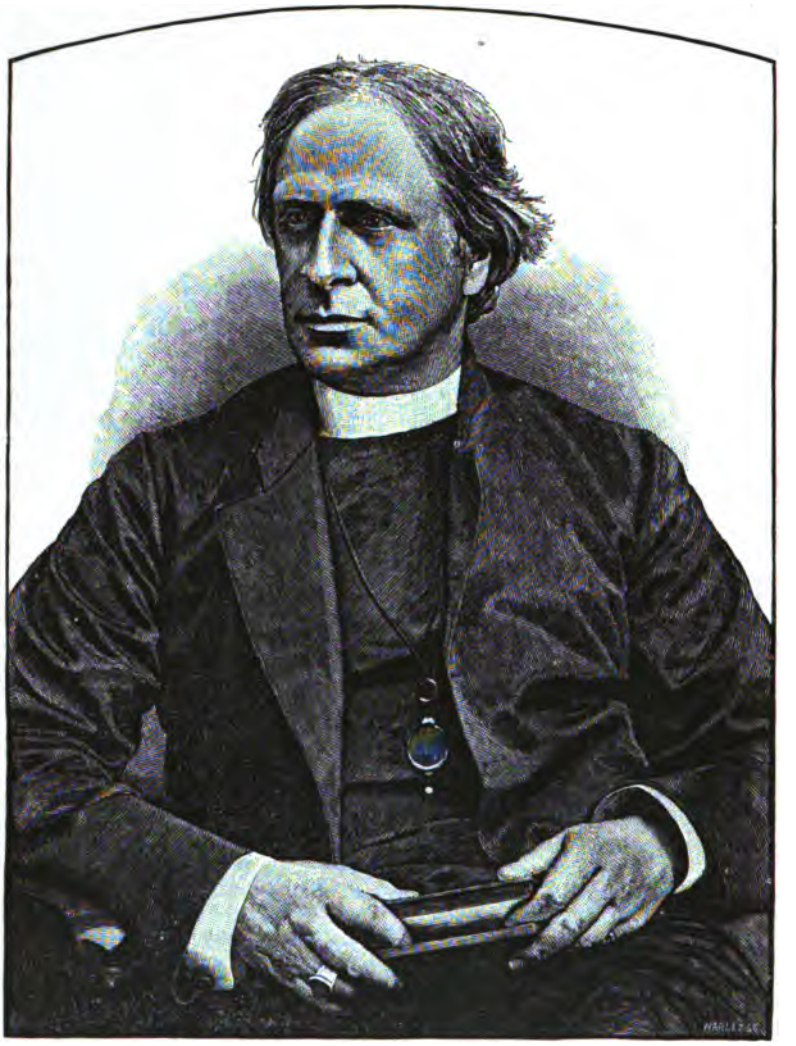
The national debt amounted in 1882 to 1,799,566,644 francs. Of this, 219,959,632 francs, bearing 2½ per cent. interest, and 710,956,082 francs, bearing 4 per cent. interest, represent the share of Belgium in the old debt of the Netherlands. The rest was contracted for railroads and other works of public utility. Loans of 1873–'78, amounting to 381,628,500 francs, pay 3 per cent.; 134,719,000 francs, issued in 1880, pay 4 per cent.; and 340,742,155 francs of railroad annuities pay 4½ per cent. All the debts except the old 2½ per cents have sinking funds provided for their extinction. By a law of 1879, the 4½ per cent. debt was ordered to be converted into one at 4 per cent. Treasury notes bearing 4 per cent. interest were issued in 1881 for floating liabilities amounting to 31,000,000 francs. In May, 1883, a new loan of 100,000,000 francs was issued. Sums aggregating as much as that have recently been appropriated for the Antwerp harbor improvements, the erection of schools, etc. To prevent the recurring deficits, the Government in the session of 1883 brought in a bill imposing additional taxes on coffee, tobacco, spirits, etc.; but the coffee-tax was withdrawn, that on alcohol rejected, and the mutilated bill finally passed by a majority of only six votes. Among the new taxes is one on securities, and another on operations of the stock exchange.

Politics and Legislation.—The struggle between the Liberals and Clericals occupied in 1883 the political arena, as in former years. The more advanced Liberals proposed to cut down the salaries of bishops and abolish canonries and vicarships. The Government toned down these demands, and carried an amendment providing for the extinction of the canon-

ries on the demise of the incumbents, and the withdrawal of the salaries of vicars found to be superfluous, at the discretion of the Government. The clergy protested against the withdrawal of subventions which were already too small, and which were only an indemnity for the ecclesiastical domains of which the Church was robbed in 1790. Minister Barras retorted that on that supposition their salaries would be a mockery, instead of being paid as they were for public services, and that the Church had other and secret sources of income. A law was passed taking away the exemption from military duty enjoyed by seminarists and the inmates of religious houses. An electoral-reform law provoked the opposition of the clergy, not less than the bills which affected them directly. This extends the right to vote in communal and provincial elections to all citizens who can pass an examination corresponding to the standard in the state elementary schools. This radical measure was introduced by the Government in fulfillment of a pledge made to the group of advanced Liberals in return for their support of the new taxes.

The Bernard Affair.—In the summer a noteworthy trial took place, originating in circumstances connected with the conflict between the ecclesiastical and civil authorities. The Bishop of Tournai, Monseigneur Dumont, one of the most uncompromising adherents of the Syllabus, was in 1879 deprived of his spiritualities by the Pope, on the ground that he was insane. Monseigneur du Rousseaux was appointed apostolical administrator of the diocese. The Belgian clergy have amassed enormous funds from gifts and fees, the legal title to which rests with the incumbents of the ecclesiastical offices for the time being, and is transferred by them to their successors by simply handing over the property. Monseigneur Dumont was, by a *ruse*, and before he knew of his disgrace, deprived of the possession of the episcopal palace, and of the custody of the diocesan funds. Bishop du Rousseaux, having knowledge of the intention of the deposed bishop to bring a suit to recover the funds of the diocese and test the legality of his dismissal, committed the episcopal treasury and documents into the keeping of Canon Bernard, with directions to place them out of the reach of Bishop Dumont. Although Tournai is the smallest and poorest of the six Belgian sees, yet the portable funds in the treasury amounted to more than 5,000,000 francs. Canon Bernard, after first consulting M. de Landtsheere, who was Minister of Justice in the last Conservative Cabinet, ran away with the securities and accounts to America, and deposited most of them in safety-vaults in New York and Boston. About 1,700,000 francs of the private funds of Monseigneur Dumont were sent back to Belgium in charge of a Montreal attorney, named Goodhue, who was arrested on his arrival. The Belgian Government applied for his extradition, and he was arrested at Havana and sent back to Belgium on a charge of embezzlement. The securities were also obtained with some difficulty and held by the Belgian Government, subject to the decision of the court. Canon Bernard was honorably acquitted at his trial in August, as it was shown that he had not misappropriated the property, but had acted throughout in obedience to the orders of his superiors, although they were only general orders to conceal the account-books and securities, and so in taking them out of the country he had acted on his own discretion. This act was repudiated by Bishop du Rousseaux, who, when convinced that it was illegal, himself instituted the extradition proceedings.

BENSON, Edward White, an English clergyman, born in Birmingham, July 14, 1829. He was educated by private tutors and at the Birmingham Grammar-School, and gained an open scholarship at Trinity College, Cambridge. After a brilliant college career, in which he gained the senior chancellor's medal, the members' prize, a first class in the classical tripos, and a senior optime in the mathematical tripos, he graduated in 1852. He entered into holy orders, and became a master at Rugby, where he taught with marked success, and instituted some reforms. On the establishment of Wellington College, for sons of deceased army officers, he was chosen headmaster. Within a year he threw the school open to non-foundationers, and made the curriculum the most liberal, if not the best, in England. He also made it a model in the matter of ventilation, drainage, dormitories, etc. In 1868 he became prebend of Lincoln, and in 1874 chancellor of the cathedral. When in 1877 the diocese of Truro was created, being set off from that of Exeter, Dr. Benson was made its first bishop. Under his administration a divinity school was founded, which has attained great popularity, and the church of St. Mary's, in Truro, was restored, beautified, and converted into a cathedral, at a cost of one million dollars. In connection with his diocesan work in Truro, he adopted and carried out the principle of employing lay help in the church, both in the reading of prayers and in preaching. He made himself familiar with the history and interests of the diocese, and performed his duties with so much industry and personal interest as to infuse new vigor into the religious life of the people. He made his administration also acceptable to the Nonconformists, and won their confidence to a degree which was only temporarily diminished by his hasty words of censure against the Liberation Society a few weeks before his nomination for the archbishopric. He was preacher to the University of Cambridge from 1864 to 1871, and to that of Oxford in 1875–'76. After the death of Archbishop Tait in December, 1882, Bishop Benson was chosen to succeed him, and his consecration as Archbishop of Canterbury, Primate of all England, took place March 29, 1883. Archbishop Benson has con-



EDWARD WHITE BENSON, ARCHBISHOP OF CANTERBURY.

tributed to the "Speaker's Commentary," has written much for periodicals, and has published in book-form "Work, Friendship, Worship," three sermons (London, 1872); "Boy-Life" (1874); "Singleheart" (1877); "Living Theology" (1878); and "The Cathedral in the Life and Work of the Church" (1879).

BERNARD AFFAIR, The. See BELGIUM.

BLACK, Jeremiah Sullivan, an American jurist and statesman, born in the Glades, Somerset co., Pa., Jan. 10, 1810; died at his home in York, Pa., Aug. 19, 1883. His ancestry was partly Irish and Scotch. James Black, his grandfather, came to America from the north of Ireland, and settled in Somerset co., Pa., where, in 1778, Henry Black, father of Jeremiah, was born, and where he lived. Henry Black was a man of note in his day.

Jeremiah's early education was obtained at school near his home, on his father's farm, and he displayed in youth a decided turn for intellectual and literary pursuits. He studied law, was taken into the office of Chauncey Forward, a prominent lawyer in Somerset co., and was admitted to the bar in 1831. In 1838 he married a daughter of Mr. Forward. After an active and successful practice of eleven years, he was raised to the bench. In politics he was a Democrat, claiming to be after the Jeffersonian pattern, and he was nominated, in 1842, by a Democratic Governor, for President Judge of the district in which he lived. This post he held for nine years. In 1851 Judge Black was elected to be one of the Supreme Court judges of Pennsylvania. After serving the short term, three years, he was re-

elected, in 1854, for a full term, fifteen years. On the accession of James Buchanan to the presidency, in 1857, Judge Black became Attorney-General. He was very industrious and successful, in connection with Edwin M. Stanton, in protecting the interests of the nation against false claimants to grants of land made by the Mexican Government to settlers in California before that country came under the control of the United States. When the secession crisis arrived, Judge Black showed himself to be considerably in advance of the weak and vacillating President. Buchanan held that there was no authority which could coerce a State, if it chose to secede and set up as an independent government for itself. His Attorney-General was clear that it was the absolute duty of the Government to put down insurrection anywhere and everywhere, under whatever plea or pretense it might be attempted to be justified, and that the Constitution contained no provision for a dissolution of the Union by secession or in any other wise. Gen. Cass having resigned as Secretary of State in December, 1860, Judge Black was appointed to fill the vacancy, Edwin M. Stanton taking the post of Attorney-General. He occupied this position during the remainder of Buchanan's administration, and it is claimed, in his behalf, by those intimately acquainted with the history of that critical period, that he was mainly instrumental in saving the Government from absolute disruption and falling into the hands of the secessionists.

In March, 1861, when Abraham Lincoln became President, Judge Black retired from public life. He was appointed United States Supreme Court Reporter, but soon resigned that position, and entered again upon the practice of law at his home, near York, Pa. He was engaged in several prominent lawsuits during the last twenty years of his life, and retained his vigor and professional skill even to the close of his career. The Vanderbilt will contest, the Milliken case, and the McGarrahan claim, were among the more noted cases in which he was engaged. Besides more strictly professional duties, Judge Black found time for contributing to current literature. He furnished an account of the Erie railway litigation, argued the third-term question in magazine articles, and had a lively newspaper discussion with Jefferson Davis.

Judge Black generally enjoyed good health, but an operation having become necessary, it was successfully performed, yet superinduced pyæmia, which was the immediate cause of his death. His religious views were those of the Campbellites, or Disciples of Christ. He left a wife, two sons, and two daughters, these last being married. One of his sons was elected Lieutenant-Governor of Pennsylvania, in 1882; the other resides in Texas and is a lawyer.

BLAKE, Hon. Edward, a Canadian lawyer and statesman, born in the county of Middlesex, Ontario, in October, 1833. He is of Irish extraction, being descended, on his father's side, from the Blakes of Cashelgrove, Galway, and on his mother's from William Hume, M. P. for Wicklow, who during the rebellion of 1798 was shot by a party of rebels of whom he was in pursuit. William Hume Blake, his father, emigrated to Canada immediately after his marriage, and took up his residence near Peterborough. He was accompanied by his brother, a clergyman of the Episcopal Church; and on the appointment of the latter to a charge in the county of Middlesex, both families migrated westward, and settled in what was then an almost unbroken forest. Here Edward Blake was born, in a log-cabin; but the family removed to Toronto when he was a year old, and there his father became an eminent lawyer. The son followed, professionally, very closely in his footsteps, as did also his younger brother, Samuel Hume Blake, who never entered public life, but was raised at a very early age to the post of Vice-Chancellor in the court over which his father formerly presided.

Edward Blake was educated at Upper Canada College and University College, Toronto, and graduated in the University of Toronto. He was called to the bar in 1856, and rose with extraordinary rapidity to the very foremost position as a chancery practitioner; and during the ten years which elapsed before confederation took place he had gained such a position that he became, in 1867, a candidate for election at once to the House of Commons of the Dominion and to the Legislative Assembly of Ontario. In both positions he astonished even his most intimate friends by his extraordinary capacity for work. He was chosen leader of the Opposition in the Ontario Assembly very soon after it began its course, and during the whole of the first parliamentary term, though at the head of a small minority of the House, he kept the ministry almost constantly at a disadvantage. He frequently introduced bills which his legal experience and political sagacity suggested, and many of these were voted down, at the instance of the Government, only to be taken up afterward and carried through as Government measures. One of the principles which Mr. Blake most persistently kept before the public was the obligation resting on the Government to give the people's representatives as much detailed knowledge as possible of the destination of public moneys before they are voted by Parliament. This very principle was the final issue on which the Sandfield-Macdonald Government was defeated in 1871, and it therefore became the most important plank in the platform of its successor. Of the bills first introduced by Mr. Blake, and afterward taken up by the Government, was that which provided for the trial of contested elections by the courts instead of by partisan committees of Parliament. This system came into operation for the first time in the Prov-

ince after the general election of 1871, with the result of unseating an unusually large number of the members-elect. While many of the seats were vacant from this cause, the Legislature was convened, and Mr. Blake asked from it and obtained a severe condemnation of the Government for its policy of voting a large sum in aid of railways, without first specifying the roads to be aided and the amount to be granted to each. This censure of the administration led to a change of Government, and Mr. Blake took office as Premier. He kept it, however, for only a single session, as an act passed by the Dominion Parliament to abolish dual membership rendered it necessary for him to choose between the two positions which he had filled for four years.

His most noted speech in the Ontario Assembly was one in support of a resolution respecting the shooting of Scott by the Red river insurgents, under the leadership of Louis Riel, in 1870. The setting in motion of a new Constitution naturally gave rise to some friction, and not a few direct conflicts of opinion. The Constitution embodied in the British North America Act is distinctly federal in form, but it would, at the outset, have been easy to impart to it in practice a tendency toward centralization. Against every manifestation of such a tendency Mr. Blake steadily set his face. His summing up of the evidence against Sir John Macdonald, in the great "Pacific Scandal" case in 1873, decided the fate of the Conservative ministry.

He took office as a member of the Mackenzie ministry, without a portfolio, but he soon withdrew to devote himself to his private businees and the recuperation of his health. He afterward held, under Mr. Mackenzie, from 1875 to 1877, the office of Minister of Justice, and in that capacity initiated and carried through a mass of important legislation. It fell to his lot also to discuss, by correspondence with the Secretary of State for the Colonies, Lord Carnarvon, a somewhat important point in connection with the relation of Canada to the mother-country. Long after the Red river insurrection was repressed, the final disposal of the chief insurgents continued to be a difficult question, owing to uncertainty as to what had been really promised to them. Lord Dufferin undertook to cut the Gordian knot by an exercise of the royal prerogative under his "instructions," without taking the advice of his ministers. A request was then sent to the Imperial Government to amend the instructions, so that thereafter the prerogative of pardon, like all other prerogatives, should be exercisable by the Governor only on the advice of his ministers. To this Lord Carnarvon demurred, but Mr. Blake's potent arguments at last convinced the imperial authorities of the absurdity and danger of leaving the way open to a foolish Governor to create serious trouble between the two countries, and the obnoxious instruction was modified as desired.

The general election of 1878 was disastrous to the Mackenzie administration, and among other defeated candidates was Mr. Blake, who had sat for South Bruce for two Parliaments. He remained out of the Commons for one session, and, when he returned to it as member for West Durham, he was chosen leader of the Liberal party.

Mr. Blake has always enjoyed in an eminent degree the confidence of his fellow-members of the Law Society of the Province, of which corporation he has for years been the presiding and chief executive officer. He has been equally fortunate in securing the suffrages of his fellow-graduates of the Provincial University, who have repeatedly elected him by acclamation to the position of Chancellor.

BLOOD. The Mechanism of the Arrest of Hæmorrhage.—Recent investigation of the blood has led to the discovery of a new element in its composition of great practical importance, in the shape of small granular bodies differing greatly from both the red and the white blood-corpuscles. Andral, by examining blood with the microscope, either pure or mixed, as it came from the vein, with one seventh of its weight of sulphate of sodium, found that all the fibrin was held in suspension under the form of little white corpuscles $\frac{1}{500}$ mm. in diameter. To these corpuscles filaments were added at the moment of solidification. Many other observers, also, have seen in the blood in process of coagulation these little pale granules, either single or agminated, and the filaments of fibrin. In 1873 M. Ranvier also pronounced on the nature of these little bodies. "It is probable, without being proved," he said, "that these angular granulations which exist in the blood are little masses of fibrin, and that they become the centers of coagulation, as a crystal of sulphate of sodium placed in a solution of the same salt becomes the center of crystallization."

Such was the state of our knowledge upon this subject when, in 1877, M. Hayem announced that there existed in the blood peculiar little elements having the singular property of undergoing instant alteration when they came from the body, more especially when they came in contact with a foreign substance. As these elements are destined to become the red corpuscles of the blood, he proposed for them the name of hæmatoblasts, believing them to be the same as those already described by other observers, only more or less altered in appearance. He also believed that the process of coagulation was intimately connected with the modifications of these elements. In works which he published from 1877 to 1881 he insisted upon the viscosity which the hæmatoblasts acquired when they were no longer in their normal condition, adhering then to one another, and to any foreign body with which they came in contact. It is only after having undergone a manifest metamorphosis, of which this state of viscosity is the first degree, that

they become the principal points of departure and of attachment of the filaments of fibrin. He also discovered that all the conditions known as having an effect in retarding or preventing coagulation also prevented these alterations of the hæmatoblasts, and *vice versa.*

Pursuing this study, he was led to examine the manner in which the flow of blood resulting from the wound of a vessel is arrested. He believed that the hæmatoblasts took an active part in the process. In the case of a wound of a blood-vessel, the hæmorrhage, at first rapid, gradually decreases, and then ceases. To explain this favorable result, the contraction of the wall of the vessel has been invoked. This is real, and even energetic, for arteries of medium and small caliber, but almost nothing for the veins. But this contraction can not of itself close the wound. It is evident that, in the arrest of hæmorrhage apparently by the formation of a clot, there is something peculiar, the mechanism of which needs explanation. In fact, during a hæmorrhage, the blood which passes between the lips of the wound in the blood-vessel is always new, and when collected in a vessel it is transformed into a gelatinous mass only after several minutes; why, then, does it form a solid plug between the lips of a wound, which soon opposes an obstacle to all issue of blood? Upon this point M. Hayem has endeavored to throw some new light. After exposing the jugular vein of a dog, a small wound is made in the vessel, and the hæmorrhage is allowed to cease spontaneously; immediately after, a ligature is applied to the peripheral extremity of the vessel. It is easy then to draw from the little wound a clot shaped like a nail, the point of which penetrates into the lumen of the vessel, the head resting upon the outer wall of the vein. By immediately placing this coagulum in a liquid which fixes the elements of the blood, its different parts may be examined with the microscope. The point and central portion are grayish, viscous, and composed of partly granular and partly amorphous matter. The granulations are composed of enormous masses of hæmatoblasts already altered, but still very distinct one from the other, while the amorphous matter results from the confluence into one common and coherent mass of the hæmatoblasts which have undergone the greatest change. The head of the nail, which is red on the exterior, contains in its center a prolongation of the viscous hæmatoblastic matter, and at the periphery the fibrillary meshes hold a great number of red corpuscles. In all the central, and, properly speaking, obstructive part, there are very few white corpuscles. It is, therefore, evident that the fibrin is added to a central nucleus composed almost entirely of hæmatoblasts. The formation of this nucleus may be studied in the mesentery of a living frog under the microscope. After having brought into the field of the microscope a vein of medium caliber, with transparent walls, an incomplete section of the vessel is made with the point of a fine scalpel. An abundant hæmorrhage is produced, and, for a few seconds, nothing is observable but a mass of blood. Soon the blood flows more slowly, and is confined by a crown of elements attached to each other and adhering to the wall of the vessel. A few moments later the orifice of the wound is surmounted by a sort of whitish excrescence, through the elements of which the red blood-corpuscles insinuate themselves with difficulty. Far from being formed, as several observers have said, of the white blood-corpuscles, the wall consists of hæmatoblasts which have been retained during the flow of blood. At the moment when the hæmorrhage ceases, these have already become altered, and, continuing the observation, they may be seen to undergo all the changes described by the author.

The obstructing hæmatoblastic button holds only an insignificant number of white blood-corpuscles. These are spherical, smooth, not adhesive, for by continuing the observation for a few moments they may be seen to separate themselves from the mass of hæmatoblasts by means of their own inherent contractility. They do not appear to participate at all in the arrest of the flow, and they still possess their physiological properties and normal anatomical character, while the hæmatoblasts of the obstructing plug are already greatly modified. In this process the edges of the wound seem to play the part of foreign bodies. It is easy, moreover, to determine how the hæmatoblasts act with regard to a foreign body directly introduced into the circulation. By means of a slightly curved needle, carrying a thread of silver or platinum, the external jugular vein of an animal (dog) is pierced in such a way that about one centimetre of the cord remains within the lumen of the vessel. When the operation is well done, hardly a drop of blood will escape from either the point of entrance or exit of the needle. After two or three minutes—a length of time sufficient in the dog, in which the hæmatoblasts are very vulnerable—the segment of the vein traversed by the cord is separated by the aid of two ligatures, the first placed on the peripheral end, the second on the central. The trunk of the vein containing the thread is immediately detached and opened after being plunged into a liquid which fixes the elements of the blood. Already the thread is surrounded by a grayish mass, a little reddish here and there, composed of innumerable hæmatoblasts, the more readily recognizable the shorter the time that the thread has been in contact with the circulating fluid. When the thread is left for a longer time in the vessel, and the muff which surrounds it has become more voluminous, the constitution of the muff is entirely analogous to that of the hæmostatic nail already described.

The hæmatoblasts thus play an important *rôle* in the mechanism of the arrest of hæmorrhage. These elements are alterable to the

extent that, coming in contact with the edges of a wound, they become adhesive, as when in contact with a foreign body. In accumulating little by little around the open orifice of a vessel, they form there an obstacle at first insufficient; then, the first hæmatoblasts being arrested, they retain in their turn those which issue with the blood coming constantly in contact with them; the orifice of the wound retracts little by little, until finally it is completely closed by a solid and fixed plug. The other elements of the blood and the formation of fibrin only participate in this process in a secondary and accessory manner. The blood, then, contains within itself a powerful hæmostatic agent, and, were it possible to remove from the normal blood all of the hæmatoblasts, the wound of a vessel would cause a hæmorrhage which would have no tendency to cease spontaneously.

These experimental facts have a practical application of importance. All foreign bodies alter and retain the hæmatoblasts, and in this way is easily explained the formation of intravascular clots in living persons by the contact of diseased points in the cardiac or vascular walls. In the same way may be understood the hæmostatic action of foreign substances brought into contact with the surface of the wound, notably those of a pulverulent or spongy nature. According to the experiments of M. Hayem the modifications of the hæmatoblasts are favored by an elevation of temperature, and are extremely active at a temperature a little above that of the body. He asks if this may not explain the good effects of hot-water injections and applications in the treatment of hæmorrhages. For, to the action of water, which is in itself effective upon the hæmatoblasts, is added that of heat. Again, for blood to cease flowing it must contain hæmatoblasts, and these must be impressionable to the contact of foreign bodies. In animals like the horse, whose blood is only slightly coagulable, the hæmatoblasts are modified with comparative slowness. Again, these elements may undergo alterations in number and quality in cases of disease, and it may be concluded that in certain cases the constitution of the blood itself may be a predisposing cause of hæmorrhage following the least vascular injury. That singular malady known as hæmophilia, the victims of which are known in popular language as "bleeders," is perhaps precisely the consequence of a particular state of the hæmatoblasts.

A practical example of the importance of this view may be given. The case is one of extreme and frequently repeated bleeding from the nose, and the patient is at the point of death from the loss of blood. For thirty years the patient has been subject at intervals to such attacks. On examining the blood, the fact of the relative rarity of the hæmatoblasts, and of their feeble vulnerability, is apparent—the changes which they undergo out of the organism occurring much more slowly than natural. It is suspected, therefore, that the bleeding, which has lasted for three weeks, and which returns whenever the plug is removed from the nose for a few hours, is due to these changes; and that by transfusing into the patient a certain quantity of normal blood containing active hæmatoblasts, the condition may be modified to advantage. A small quantity of venous blood is, therefore, injected into the patient's veins, and the nose-bleed is immediately and definitely arrested. The plugs are removed, but the bleeding does not return. It is evident that the conveying into the blood of the patient new and healthy blood from another body has effected a cure, and the active element in the cure is probably the hæmatoblasts.

BOLIVIA (República de Bolivia), an independent state of South America, whose limits before the war on the Pacific were between latitudes 10° and 24° south, and longitudes 57° 25′ and 70° 30′ west. The western limit has still to be negotiated between Bolivia and Chili. It is bounded on the north and northeast by Brazil, on the south by the Argentine Republic and Chili, and on the west by Peru.

The republic previous to the war was divided into nine departments, which, with their areas in square miles, capitals, and population (exclusive of 250,000 savage Indians), were approximately as follows:

DEPARTMENTS.	Area.	Population.	Capitals.	Population.
Atacama	70,178	10,880	Cobija	2,500
Beni	150,000	70,200	Trinidad	4,885
Chuquisaca	72,798	275,722	Sucre	26,624
Cochabamba	26,808	478,717	Cochabamba	44,908
La Paz	43,051	670,408	La Paz	88,092
Oruro	21,600	140,356	Oruro	8,492
Potosi	54,297	376,394	Potosi	25,774
Santa Cruz	144,077	176,088	Santa Cruz	11,786
Tarija	114,484	180,940	Tarija	8,375
Total	697,288	2,324,150		

The result of the war between Bolivia and Peru on the one hand, and Chili on the other, terminated in 1883, has been to deprive Bolivia of its former outlet on the Pacific, Cobija, but the treaty of peace which was being negotiated between Bolivia and Chili at Santiago, at the close of that year, may still lead to a territorial rearrangement which shall give Bolivia the coveted port or ports. Should Bolivia be disappointed in this respect, Brazil is said to be ready to facilitate Bolivian trade through San Antonio on the Madeira river. Brazil would

engage to render the Madeira navigable for a distance of 400 miles, from its junction with the Amazon to San Antonio, and no transit dues of any kind would be levied by Brazil on goods forwarded to and from Bolivia. There was a rumor early in 1883 that a secret treaty had been actually concluded between the two governments to that effect as early as September, 1882. The real present outlet is to the Atlantic, through the Argentine Republic.

The President of the Republic is Gen. Campero (since June, 1880), the First Vice-President is Dr. Aniceto Arce, and the Second Vice-President, Dr. B. Salinas. The Cabinet in 1883 was composed of the following ministers: Interior and Foreign Affairs, Señor P. J. Silvetti; Finance, Señor A. Quijano; Public Worship, etc., Dr. P. H. Vargas; War, General J. M. Rendon.

The United States Minister resident at La Paz is Mr. Richard Gibbs.

The Bolivian Envoy Extraordinary and Minister Plenipotentiary at Washington is Dr. L. Cabrera, with Dr. A. Aramayo as Secretary of Legation. The Bolivian Consul-General at New York is M. Obarrio; Consul at New Orleans, J. P. Macheca; and at San Francisco, F. Herrera.

In order to understand the position of Bolivia at the close of 1883, it will be necessary to review chronologically the events in Bolivia and Peru, of which the negotiation of a treaty of peace between Bolivia and Chili was the last.

The War on the Pacific in 1883.—In December, 1882, a convention was made and ratified at Santiago, between Italy and Chili, to the effect that all claims of Italian subjects arising out of the war in Bolivia and Peru should be determined by arbitration.

On April 20, 1883, the Congress assembled at Cajamarca closed its sessions after authorizing the Government to order an election to be held upon the basis of the census of 1882, for the nomination of a Constituent Assembly.

In May the partisan general Cáceres had several engagements with Chilian detachments, being defeated in two of them, at Balconcillo and Pampas de Sicaya, by Canto, and on May 22d in one at Larma by Garcia.

On May 11th a provisional treaty of peace was signed between Jovino Novoa on the part of Chili, and Lavalle on the part of Gen. Iglesias, the Peruvian commander. (The conditions submitted to by Peru will be found under CHILI, in this volume.)

On May 20th the opposition Congress of the Calderon-Montero faction in Peru assembled at Arequipa, on which occasion Gen. Montero delivered his message, in which he praised the faithfulness of Bolivia, and declared that he did not consider the time to have come for making peace. The message contained this passage: "At the time it became evident that the belligerents would be unable to arrive at an understanding through direct negotiation, Peru accepted the good offices of the United States. But after a year's useless negotiations, after the energetic and comforting assurances of Gen. Hurlbut, the measured and diplomatic utterances of Mr. Trescott, and the impudent and hostile declarations of Mr. Logan, we became convinced that the United States were unable to be useful to us in any manner whatsoever."

June 2d, the people of Cerro de Pasco adhered to the Cajamarca peace proclamation of Iglesias. June 3d, at a meeting held at San Mateo (province of Nuarochiri) under the chairmanship of José Maria Sanchez, Peruvian citizens there present pronounced in favor of peace. A similar declaration was simultaneously made at Huaraz (department of Ancacho) and at Recuaz, for peace and Iglesias. On June 11th the Congress assembled at Arequipa confirmed the following nominations: President, Garcia Calderon; Vice-President, Montero; Second Vice-President, Cáceres. And on June 16th a new Cabinet was formed. A few days later Gen. Montero reviewed the troops under his command, and soon after a force was sent by him to Moquegua, under the command of Canevaro, 1,200 strong, and including 200 horse under the Cuban Céspedes, to operate against Tacna.

Toward the close of June the Chilian forces evacuated Pacasmayo, and the Chilian colonel, Y. Garcia, occupied Trujillo, where the Peruvian flag was hoisted.

Early in July the Chilian President, Santa Maria, delivered his message to Congress, at Santiago, containing the following passage: "Prior to the war, Bolivia had become an instrument of Peruvian intrigues and greediness, because that country had become dependent on Peru, which, for the past fifty years, stood as a sort of door-keeper of Bolivia, owning as Peru did the province of Moquegua, and thus, through the routes leading from Arica and Tacna to La Paz, controlling the only practicable communication between the interior of Bolivia and the Pacific. If the relations between Peru and Bolivia remained the same as they were then in this respect, now that the war has been carried by us to a safe issue, we should at all times in the future be exposed to the risk of seeing Bolivia attack us again at the instigation of Peru. It is no secret that politics are very uncertain in Bolivia, and any government capable of exercising efficient pressure on the latter may easily render Bolivia amenable to its purposes. Under these circumstances we owe it to our own safety in the future to deprive Peru forever of the means to do mischief in this respect. This is the chief reason why Chili insists, not on annexing the province of Moquegua, but on temporarily occupying, and eventually acquiring the same from Peru by purchase. All friends of a durable peace can not fail to admit that we have a right to insist on these conditions which present a guarantee of real tranquillity. These demands are not those

of a rapacious conqueror, they are merely the dictates of a wise policy whose object is to secure a lasting peace." The Peruvian general, Canevaro, presided over a meeting at Moquegua, and declared to the citizens there assembled that he was tired of the war.

On July 10th a crushing victory was achieved by the Chilian forces, led by Col. Gorostiaga, over the Peruvian partisan troops under Gen. Cáceres at Huamachuco. In this action 1,600 Chilian soldiers were engaged against over 4,000 Peruvians, the loss of the latter being 900 killed and many wounded, while the Chilians lost 56 killed and 104 wounded, including four officers. The Peruvians lost a number of officers, including Gen. Siloa, 11 pieces of artillery, and 800 rifles. The action lasted from 6 A. M. to 2 P. M. As soon as the news reached Gen. Lynch, the Chilian commander-in-chief, he sent a message to President Iglesias inviting him to Lima.

Commander Lynch subsequently published a decree calling on all officers formerly serving under Cáceres to appear at headquarters, or be treated as spies.

On August 10th Castro Zaldivar proceeded from Lima to join Gen. Iglesias, in order to undertake an important mission which the latter wished to put him in charge of. On Aug. 13th Iglesias issued a decree levying a capitation tax of $1, silver, per head.

Aug. 15th the Chilian commander at Huancayo chastised 3,000 pillaging Indians, and killed and wounded 800 of them. Simultaneously a mutiny, broken out among Peruvian troops in the province of Chancay, was promptly quelled. On Aug. 20th Gen. Iglesias made his entry into Trujillo, and was enthusiastically received by the population. On Sept. 11th the citizens of Cañete and the troops in the Pacaran district recognized the authority of Iglesias. On Sept. 15th the Chilian Minister of Foreign Affairs, Aldunate, left Valparaiso on his way to Callao to hasten the pacification of Peru. Two days later the steamer Amazon arrived at Payta with 600 Chilian infantry, sent by rail to Sullam, and thence to Piura, which place was occupied the next day. Sept. 18th, 3,000 monteneros were defeated by the Chilians at Huancayo, leaving 200 killed and wounded on the field. In the mean time news was received from the department of Ica that peace reigned there.

On Oct. 4th, 870 Peruvian officers submitted to the Chilian authorities, and Puno was occupied; on the 9th, Casma, a port of the Amcache district, declared in favor of peace. Ten days subsequently the city guard was reorganized at Lima.

On Oct. 20th the Chileno-Peruvian peace was signed at Ancon, and on the 24th Gen. Iglesias entered Lima as Presidente regenerador, Gen. Lynch having prior to this left for Barranco, near Chorrillos. On Oct. 28th Admiral Garcia y Garcia was appointed Peruvian minister in France and England. On the 29th Arequipa surrendered, and Montero fled to Bolivia, where a cold reception awaited him. Prior to his flight he resigned the command in favor of Cáceres. The Peruvian minister, Bustamante y Salazar, left for Bolivia, and Gen. Osma, the Peruvian Minister of War, went to Arequipa.

On Nov. 9th the Chilian army of occupation was concentrated at Arequipa, and the Bolivian army at Oruro—the same day that the Bolivian envoy, Guijarro, left for Tacna to confer about peace with the Chilian envoy, Lillo. A week later Col. Lorenzo Iglesias, in garrison at Lima, marched with an adequate force to Chiclayo and Cajamarca, to quell an incipient rising. At the close of November a decree was promulgated declaring null and void all official acts of the Arequipa government from Jan. 1, 1883. This was particularly aimed at the Arequipa Congress of July, 1883.

The President of the United States, in his annual message of Dec. 4th, expressed himself about events on the west coast to the following effect:

> The contest between Bolivia, Chili, and Peru has passed from the stage of strategic hostilities to that of negotiation in which the counsels of this Government have been exercised. The demands of Chili for absolute cession of territory have been maintained and accepted by the party of Gen. Iglesias to the extent of concluding a treaty of peace with the Government of Chili in general conformity with the terms of the protocol signed in May last between the Chilian commander and Gen. Iglesias. As a result of the conclusion of this treaty, Gen. Iglesias has been formally recognized by Chili as President of Peru, and his government installed at Lima, which has been evacuated by the Chilians. A call has been issued by Gen. Iglesias for a representative Assembly to be elected on the 13th of January, and to meet at Lima on the 1st of March next. Meanwhile the provisional Government of Gen. Iglesias has applied for recognition to the principal powers of America and Europe. When the will of the Peruvian people shall be manifested, I shall not hesitate to recognize the Government approved by them.

On Dec. 7th Gen. Lynch went to Chorrillos. The declaration of the Chilian President, that he would carry out the treaty with Peru in its entirety, had meanwhile strengthened the position of Iglesias materially. But he still had the Indian trouble in the interior to contend with. These Indians, led by a few unscrupulous men, were ready to adopt any pretext for their crimes, although their real motive was based upon their hatred of their so-called oppressors, inherited by their fathers from the time of the Spaniards. This hatred is the point that Cáceres depended upon to win power among them. He speaks the Quichua language, which gives him great prestige among them. Meanwhile Gen. Bermudez, the Peruvian commander, occupied Ayacucho, and the Chilian envoy, Monte, went to Buenos Ayres on Dec. 12th. The Bolivian peace commissioners, Baptista and Bosto, arrived at Santiago, Chili, accompanied by the Argentine and Brazilian ministers. One of the conditions contained in their instructions reads as follows:

On goods for Bolivia, Chili will take 20 per cent. of the customs duties, and Bolivia the remainder; railways to be constructed from Iquique to Lake Aullagas, and from Mejillones or Antofagasta to Potosí; the colonization of the country along the river Desaguadero to be effected, and the ratification of the frontier line passing the Desaguadero river to the Argentine line, Chili to permit the passage of Bolivian troops through its territory in the event of a war between Bolivia and a power not on her frontier.

On Dec. 14th President Iglesias wrote to Cáceres, assuring him of his personal security, should he feel disposed to capitulate. Puga was beaten by the Peruvian Government troops at Stollon, and Gen. Cáceres took position with 2,000 men two leagues from Ica. The United States minister at Lima asked permission for an American man-of-war to take soundings on the Peruvian coast.

Toward the close of the year 1883 the outlook in Peru became quite gloomy once more, owing to Cáceres's continuing to play a double-handed and treacherous game. While pretending to wish to visit Lima, he incited the Indians to plunder and murder. Two scenes of savagery, as barbarous as those which occurred during the mutiny in India, were enacted in the region which he pretended to govern. The Chilians, adhering to the terms of peace, declined to interfere.

The slight reduction of the import duties, after the departure of the Chilians, who had raised them to 50 per cent., caused considerable disappointment and some discontent in Peru. The finance minister of Iglesias reduced the duties from 50 per cent. to 35 per cent., thereby causing a check on importation. Many articles, formerly entering duty free, such as agricultural machinery, printing-presses and paper, etc., now pay a heavy duty. It thus happened that, in spite of the pacification of the country, buyers from the interior were scarce at Lima, although there was a good assortment of all sorts of merchandise. The paper money current had nevertheless improved at the close of December from fifteen paper dollars for one silver dollar, to twelve for one.

Another great difficulty which President Iglesias encountered was financial distress. Letters received at Lima during the last week of the year 1883 stated that, according to advices from La Paz, the Bolivian capital, the national guard had entered on active service; three battalions had been pushed forward toward the Peruvian frontier on the way to Tacna, 7,500 men were marching from the interior in the same direction, and the regular army—8,000 strong—was being concentrated at the capital. It was added that these movements might be interpreted as either to mean resistance to a possible but not probable Chilian invasion, or to effect a *coup de main* on the Peruvian territories of Arequipa and Mollendo. It was stated that the Peruvians of Arequipa and Puno were so thoroughly convinced of their danger that they had offered to form the vanguard of the Chilian army should a march on the Bolivian capital be decided upon.

Finance.—In August Gen. Campero, President of Bolivia, read his message before the assembled Congress in La Paz. He said that the expenditures of the republic, during the fiscal year ended, amounted to $3,300,528, while the income did not exceed $2,527,515, leaving a deficit of $803,012, to cover which a loan would have to be made. He added that the scrupulous punctuality with which Bolivia had attended to the settlement of all her pecuniary obligations had replaced the credit of the republic on a firm basis both at home and abroad, so that there were not wanting overtures from Europe for placing a Bolivian loan in that market. It was at the same time said that great activity prevailed on the banks of the Beni river in gathering India-rubber for export, which commanded on the spot 70 cents Bolivian silver coin, the cost of freight to San Antonio on the Madeira being 12 cents. A large transit trade was also going on between Potosí and the Argentine frontier.

Commerce.—Bolivian imports and exports in 1883 went almost exclusively *via* the Argentine Republic. No official statistics having been published, showing the imports and exports of Bolivia during the war, the amount of goods which entered the country in normal times has to be calculated upon the duties collected at the custom-houses. According to these, the import would not exceed $6,150,000, while the export amounted to $9,381,917 in 1881, the bulk of it being silver, $6,897,130, other metals, $1,136,787, and the balance cinchona-bark (quinine), India-rubber, etc.

Telegraphs.—There is a line from Chililaya, on Lake Titicaca, to La Paz and Oruro, 183 miles in length. It is intended to extend this line to Cochabamba and Sucre.

BRAZIL (Imperio do Brazil). (For details relating to area, territorial divisions, population, etc., reference may be made to the "Annual Cyclopædia" for 1878.)

The Emperor is Dom Pedro II, born Dec. 2, 1825; proclaimed April 7, 1831; regency until July 23, 1840; crowned July 18, 1841; married Sept. 4, 1843, to Theresa Christina Maria, daughter of the late King Francis I of the Two Sicilies.

The new Cabinet, formed after the resignation of the one presided over by Viscount Paranagua, was, on May 24, 1883, composed of the following ministers: President of the Council of Ministers and Minister of Finance, Senator Councilor of State, Lafayette Rodrigues Pereira; Interior, Francisco Antunes Maciel; Justice, Francisco Prisco de Souza Paraizo; Foreign Affairs, Councilor Francisco de Carvalho Soares Brandão; War, Antonio Joaquim Rodrigues, Jr.; Navy, Antonio de Almeida Oliveira; Agriculture, Commerce, and Public Works, Councilor Affonso Augusto Moreira Penna.

The Council of State was composed of the

following members in ordinary: The Princess Imperial, Donna Isabel; Prince Gaston d'Orléans, Count d'Eu; the Senators Viscount de Abaeté, Viscount de Muritiba; Viscount de Bom Retiro; Viscount de Nictheroy; Senator J. J. Teixeira; Vice-Admiral J. R. de Lamare; Dr. P. J. Soares de Souza; Senator M. P. S. Dantas; Councilor Martin Francisco; Councilor J. C. de Andrade; Senator J. L. V. Cansansão de Sinimbú; and of members extraordinary: Senators Viscount de Paranaguá; Affonso Celso; L. A. Vieira da Silva; J. B. da C. Figueiredo, and Lafayette.

The President of the Senate, which comprises 58 members elected for life, was J. L. Lima Duarte; and the Vice-President, A. M. de Barros.

The President of the Chamber of Deputies, with 122 members elected for four years, was Councilor J. F. de Moura; and the Vice-President, J. L. Lima Duarte.

The presidents of the several provinces were as follow: Alagôas, Dr. H. M. Salles; Amazonas, Dr. J. L. da Cunha Paranaguá; Bahia, Councilor Pedro Luiz P. da Souza; Ceará, Dr. Satyro; Espirito Santo, Dr. A. P. N. Accioly; Goyaz, Dr. A. G. Pereira; Maranhão, Dr. J. A. P. Ovidio; Matto-Grosso, Baron de Bacovi; Minas-Geraes, Dr. A. G. Chaves; Pará, Viscount de Maracajú; Parahyba, Dr. J. A. do Nascimento; Paraná, Dr. C. A. C. de Oliveira Ballo; Pernambuco, Dr. J. M. de Freitas; Piauhy, Dr. F. P. Salles; Rio Grande do Norte, Dr. F. M. Vianna; Rio de Janeiro, Councilor B. A. Gavião; Sta. Catharina, Dr. F. C. de F. Sonto; São Paulo, Baron de Guajara; São Pedro do Sul, Councilor J. J. d'Albuquerque; Sergipe, Dr. F. G. C. Barreto.

The Archbishop of Bahia, the Rt. Rev. L. A. dos Santos (1880) is Primate of all Brazil; and there are eleven bishops: those of Pará, São Luiz, Fortaleza, Olinda, Rio de Janeiro, São Paulo, Porto Alegre, Marianna, Diamantina, Goyaz, and Cuyabá.

The Brazilian Minister Plenipotentiary and Envoy Extraordinary to the United States is Councilor Lopes Netto; the Secretary of Legation, J. G. Valente; and the Consul-General of Brazil at New York, for the Union, is Dr. Salvador de Mendoaça.

Temporary changes in the Brazilian legation at Washington are said to be due mainly to the disposition on the part of Brazil to serve the interests of peace between Chili and Peru. Senhor Netto, Brazilian minister to the United States, left Washington for Chili about the middle of August, with instructions to express to the Chilian Government the anxiety of Brazil to have a satisfactory peace established between Peru and Chili, and that he was authorized to act as a mediator to this end, if his services were desired. Under his instructions he is to remain in Chili for two years, and, while there, is to attend to some pending Brazilian claims.

The United States Minister to Brazil is Hon. T. A. Osborn, and the Consul-General at Rio de Janeiro, C. C. Andrews.

Army.—The actual strength of the army in 1883 was 11,333. The distribution of the several arms was as follows: Artillery, 1,951; cavalry, 2,140; infantry, 7,242; 2,149 more soldiers would have to be enlisted to complete the number fixed by law. The artillery counts three mounted regiments, four foot battalions, and one battalion of sappers; the cavalry, five regiments, one squadron, and four companies; the infantry, twenty-four battalions and eight companies.

Navy.—The navy, in 1883, consisted of seven steam-ironclads, one steam-frigate, seven steam-corvettes, sixteen steam-gunboats, two sail of the line, and two smaller crafts, with an aggregate of 3,148 men, and a total armament of 123 guns. There was, besides, one school-ship; and one ironclad and five gunboats were being built.

The *personnel* of the navy consisted of 15 general staff-officers, 378 first-class officers, a sanitary corps 68 strong, 91 pursers, 79 guardians, and 181 engineers; an imperial marine corps 2,922 strong, a naval battalion of 450 men, and 1,520 apprentices; total, 5,704 men.

The Frontier Dispute.—There is a long-pending dispute between France and Brazil, concerning the precise border-line between the French and Brazilian Guianas, specially relating to the territory between the Oyapok and Amazon rivers. It seems that the Treaty of Utrecht assigned to France a portion of Guiana not clearly defined, nor did the treaty of 1815 establish the boundary with any greater precision. These lands are isolated by one of the branches of the Amazon in its delta, and are represented as being quite valuable for grazing purposes.

Postal Service.—The number of letters forwarded by the Brazilian Post-Office in 1881–'82 was 35,815,869, against 31,228,635 in 1880–'81; the number of post-offices was 1,610. The gross amount of postages collected amounted in 1881–'82 to 1,513,872 milreis, and the expenditure was 1,741,721 milreis.

Railroads.—The first railroad in Brazil, the Macia, 18 miles in length, went into operation on Dec. 16, 1853. There are at present 2,400 miles in operation and 2,200 being built. The Government owns and administers several lines, and, as a rule, guarantees an income of 7 per cent. on the necessary capital invested in the construction of private roads. The number of miles of railroad owned and in operation by the Government is 800; and it also has nearly the same number of miles of railroad in course of construction. Most of the rails with which the roads have been made were imported from England, while a part of the rolling-stock was brought from the United States. The roads are surveyed and built almost wholly by Brazilian engineers.

Under the provisions of a recent law the Government grants concessions to railroad

companies, with the following chief conditions: After the Government is satisfied that the capital of a new company applying is sufficient, an annual interest of 7 per cent. is guaranteed, the latter payable half-yearly during thirty-two years. While the construction of the line proceeds, the Government pays interest on the sums of money it considers necessary; the latter are deposited in a bank, and can only be drawn as wanted. The state grants gratuitously to such companies all Government lands that may be requisite for the lines, depots, entrepots, shops, etc., designated in the contract. The companies are allowed to import duty-free all material and, for twenty years, coal and all other fuel.

In return for these privileges the companies engage to forward at reduced rates all Government officials, luggage, and material, and, if called upon to do so, furnish the Government whatever information it may wish to obtain respecting the business of the line.

From the moment the dividends exceed 8 per cent. per annum, the excess is equally divided between the Government and the company; but this participation of the Government in the excess of profits ceases as soon as the sums of money advanced for interest are paid back. Should the dividend at any time exceed 12 per cent. during two consecutive years, the companies, if called upon by the Government to do so, bind themselves to reduce their freight rates. If the construction capital be procured abroad, the exchange is fixed at 27*d.* per milreis. The following are the leading companies that have gone into existence on this basis:

LINES BUILT UNDER GOVERNMENT GUARANTEE.

LINES.	Length, in kilometres.	Rate of interest guaranteed, per cent.	Capital, in milreis.
Natal to Nova Cruz	121	7	5,496,052
Conde d'Eu	121	7	6,000,000
Recife to São Francisco	124	7	14,977,965
Recife to Limoeiro	121	7	5,000,000
Maceio to Imperatriz	88	7	4,558,000
Bahia to São Francisco	124	7	16,000,200
Bahia Central	302	7	13,000,000
Campos to Carangola	347	7	6,000,000
São Paulo to Rio Janeiro	231	7	10,000,000
Santos to Jundiahy	139	7	23,555,850
Paranagua to Coritiba	109	7	11,492,042
Dona Theresa Christina	112	7	5,451,000
Dom Pedro I	120	6	4,000,000
Rio Grande do Sul to Cacequy	225	6	18,521,423
Cacequy to Uruguayana	259	6	10,000,000
Quarahim to Staquy	186	6	6,000,000
Rio to Minas	163	7	16,150,000
Total	2,892	..	171,197,582

All these lines have been built with English capital, with the exception of two, the Recife-Limoeiro, which is Brazilian, and the Paranagua-Coritiba, which is French.

Telegraphs.—The first telegraph lines were laid in 1852, but not till 1866 did Petropolis and Rio de Janeiro receive telegraphic communication. Now, Rio has two telephone lines, and the empire counts land telegraphs of a total length of 7,419 kilometres of line and 18,250 of wire, communication being established by means of 136 stations. The number of telegraphic messages sent in 1881–'82 was 739,906; the gross receipts were 1,241,770, and the expenses 1,632,549 milreis.

Trade-Marks.—Brazil protects the trade-marks of persons domiciled in the country and foreigners having in Brazil an establishment of commerce or industry. Foreigners who do not possess branch houses or manufactories in Brazil receive no benefit from the law, except in cases where treaties of reciprocity exist between Brazil and their own country.

Foreign trade-marks are registered at the office of the secretary of the Tribunal of Commerce at Rio de Janeiro.

The legal effect of the registry continues for fifteen years, and may be renewed for another term of the same duration.

A Floating Cathedral.—A floating cathedral on the Amazon river is the most novel idea conceived and to be carried out by enterprising missionaries in Brazil. The matter has been taken in hand by the Catholic Bishop of Pará and Amazonas. The best architects and shipbuilders of Europe are to construct it complete and in magnificent style, and it is to be baptized "Christopher," because it is to carry Christ over the waters. It is to attend to the spiritual wants of the whites and Indians inhabiting the banks of the great river.

Emancipation.—A new issue is steadily forcing its way into Brazilian politics, and will, at no distant day, form a disturbing factor of vital importance to the country. Thus far there has been no abolition party and no division between the old parties on that question. Since the beginning of the present year a new movement has set in which promises to change all this. In the northern provinces, especially in Ceará, the popular sentiment in favor of abolition has been worked up to such a pitch that the people are voluntarily emancipating their slaves. Ceará has already liberated about 6,000 slaves, and may free all before the close of the year. As this movement is principally confined to the northern provinces, it is not improbable that the abolition of slavery in Brazil will be transformed into a sectional issue at no distant day, and that it will lead to troubles which will have an important influence upon the future of the country.

Slavery.—In July, 1883, there were in Brazil 1,846,648 slaves. When the gradual abolition decree of Sept. 28, 1871, was passed, there were officially registered 1,547,660 slaves; since then about 130,207 slaves have died, the Government has liberated 12,898, private individuals and savings-banks 56,056, and 1,851 slaves have bought their freedom themselves. The average value of slaves is at present about $375, so that the amount of slave property still existing in Brazil represents a value of something like $505,000,000. The provinces in

which the greatest number of slaves has been liberated are Rio de Janeiro and the neutral district, 23,002; Rio Grande do Sul, 9,100; Minas-Geraes, 7,108; Bahia, 7,087; São Paulo, 6,681; Pernambuco, 5,649; Pará, 4,709; Maranhão, 4,644, and Ceará, 4,272. In other provinces the number ranges between 99 and 1,871.

Immigration.—The immigrants in the first six months of 1883 numbered 14,225, among whom were about 700 Germans, 6,000 Portuguese, and 5,000 Italians. Only 2,500 were agriculturists.

The "Rio News," of July 15, 1883, expresses itself about immigration into and naturalization in Brazil to the following effect:

According to the "Diario Official" 5,309 foreigners have become naturalized in Brazil (not including colonists) in the period between 1825 and 1882—a period of fifty-seven years. There is a significance in this result which will not be unnoticed when comparisons are made with the enormous number of foreigners naturalized in the United States during the same period. When it is considered that these fifty-seven years comprise the entire reign of the present Emperor, whom the civilized world has been pleased to call one of the most enlightened and liberal monarchs of the age, that they have been years of only briefly interrupted peace, and that during all this time Brazil has had a very large population of foreigners engaged in commercial and industrial pursuits, the greater part of whom could easily have been transformed into Brazilian citizens, there is certainly very little cause for satisfaction. What with her incubus of slavery, her great landed estates, her religious intolerance, her jealousy of foreigners, her vices of administration and her oppressive exactions upon commerce and industry, she has shut out this great stream of wealth and population which has been steadily flowing by her doors all these years, until now, in her weakness, she is able to secure only the scattering drops which the rushing current casts upon her shores. It is not altogether a pleasant theme for consideration, for it is a living proof that the reign of Dom Pedro II has been very far from liberal and enlightened, and that the dominant policy which has thus far controlled Brazil has resulted only in shutting her out from the progress of the world and in retarding her national growth.

Naturalization.—The new bill relating to naturalization of foreigners in Brazil, stipulates that all foreigners residing for three years in the country shall thereby become and be considered Brazilian citizens, unless during the interval they have made a declaration before their consul that they do not wish to relinquish the nationality of their native country. The time of residence for acquiring Brazilian citizenship will even be reduced to two years, if the foreigner marries a Brazilian or holds office under the Government. The naturalized citizen is to be eligible to municipal office and other public functions, and may even become regent of the empire. This law would place Brazil even above the Argentine Republic in point of liberality toward foreigners, and the probability is that the latter will follow the example. The Brazilian press unanimously approves of the project.

Finances.—In financial matters the present situation of Brazil is no less critical, and the danger is even more imminent. Her public indebtedness has been steadily increasing until it is now much greater than her income warrants, and her expenditures are largely and regularly in excess of her revenue. There has been no annual surplus since 1856–'57, only two since 1846–'47, and only four since 1836–'37. According to an abstract of the national budgets during the period between 1827 and 1879–'80 inclusive, the aggregate of these deficits amounts to about $850,000,000. The interest charged upon her funded debt is now nearly two fifths of the total revenue.

These statements will, of course, excite surprise abroad, simply because of the high credit which Brazil enjoys in the London market. The Brazilian Government is scrupulously careful to meet the interest charges on its foreign debt promptly and fully, for which reason its funds are quoted high and excite no distrust. To do this, however, new loans have been floated, *apolices* (bonds) of internal indebtedness have been issued, taxation has been increased, and local creditors have been compelled to wait years for the payment of their accounts. And then, too, these loans and investments in London are nearly all in the hands of a small circle of capitalists known as the "Brazilian ring," at whose head is the famous house of Rothschilds; and this ring is very careful not only to place investments on the market to the best advantage, but also to suppress every item of information detrimental to Brazilian credit. To this end journals and journalists are subsidized (a deficiency credit has been under discussion in the Brazilian Legislature, in which two subsidized London journalists are specially mentioned), flattering articles are published in the newspapers and reviews, and everything is made easy and comfortable for all the parties concerned.

An epitome of all the imperial budget laws since 1823 has been published in the "Diario Official" by Senator Castro Carreira. A comparison with the annual reports of the Minister of Finance shows that its figures are correct, or as nearly so as careless typographical work will admit. This epitome includes quinquennial summaries and abstracts of public indebtedness, which are of great value in comparisons. In order to make this abstract cover the period of the present system of "public improvements," beginning with the construction of the Dom Pedro II railway, and also to comprise these quinquennial debt abstracts, it is necessary to take the fiscal year 1855–'56 as a starting-point. During the preceding five years the aggregate revenue of the Government had been 176,376,699 milreis, and the aggregate expenditure 182,607,684, leaving a deficit of 6,230,985. The total indebtedness of the empire at the end of this period (1854–'55), including the 1852 foreign loan of £1,040,600, was as follows, the Brazilian milreis at par being equivalent to 54½ cents United States gold:

	Milreis.
Foreign debt, 4½ * and 5 per cent	51,760,214
Internal debt, 4, 5, and 6 per cent	57,944,117
Total	109,704,331
Overdue amortization	552,675

During the five years from 1855–'56 to 1859–'60, inclusive, the reign of reckless expenditure on public works began, and since then there has been but one single year (1856–'57) in which the revenue has exceeded the expenditures. Some of these works were necessary, and either have been or will be productive; but in great part they have been unnecessary and enormously expensive. The best of these investments has been the Dom Pedro II railway, upon which the Government has expended, not including interest on investment, over £10,000,000. In this period three foreign loans were made, aggregating £3,407,500, while the internal debt was slightly decreased. The aggregate deficit for the five years was 14,766,501 milreis, the average annual revenue being 45,653,024 milreis, and the expenditure 48,606,324. With that year, 1860–'61, a new portfolio was added to the Imperial Cabinet, that of "Agriculture, Commerce, and Public Works" — a department which was designed to preside over and develop the wealth-producing industries of the nation, but which has succeeded only to the extent of mischievous interference and burdensome expense. In 1860–'61 its operations were covered by the modest expenditure of 3,871,544 milreis; in 1880–'81 this annual expenditure was 36,798,932. In the last year of this quinquennium (1864–'65) a war broke out between Brazil and Paraguay, which lasted through the succeeding five years. But one foreign loan was contracted, amounting to £3,855,300, but the internal debt was increased to 84,265,751 milreis by the issue of 6 per cent. *apolices*. A large amount of paper money was also put into circulation. The aggregate deficit of the five years amounted to 39,291,247, the average annual receipts being 52,591,518, and the expenditures 60,449,967.

In the next five years (1865–'66 to 1869–'70) the expenditures of the Government were enormously increased by the war with Paraguay, the total cost of which is calculated to have been 613,183,263 milreis. The extraordinary credits of the Government during this period amounted to 297,901,468 milreis, taxation was largely increased, and new issues of paper money were made. The aggregate deficit amounted to 324,308,487, the average annual revenue was 75,378,204, and the expenditure 140,239,901. One foreign loan, amounting to £6,963,600, was raised in London, and the internal debt was largely increased by the issue of 6 per cent. *apolices*. The total public debt (1870) was as shown in the next column.

In the five years following there was a large falling off in the expenses of the War and

* The loan of 1852, amounting to 9,201,004 milreis, was the only one issued at 4½ per cent.

	Milreis.
Foreign debt, 4, 4½, and 5 per cent	118,136,525
Internal debt, 4, 5, and 6 per cent	238,590,553
Total	351,727,078
Overdue amortization	2,054,162

Navy Departments, but the steady increase in those of Agriculture and Finance kept the total up to an unwarranted high figure. Although this was a period of peace, the expenditures were largely disproportionate to the revenue, the aggregate deficit for the five years being 56,612,024 milreis. Extraordinary credits were authorized to a total of 70,426,709, more paper money was issued, and taxation was again increased. One loan of £3,459,600 was placed in London, and the internal debt was increased to 289,562,250 milreis. The average annual revenue was 102,850,543, and the expenditures 114,173,147.

In the last quinquennial period under review, there was a steady increase in the expenditures of the Department of Agriculture, and the aggregate expenditures of all the departments largely exceeded those of the five years of the war. This period included the great drought of Ceará, in which there was so great a loss of life and property, and upon which the Government expended 60,503,848 milreis for public relief. A large part of this expenditure, however, was swallowed up by speculators and dishonest public officials, of whom the Government has the names of 1,539, with evidence of guilt, not one of whom has ever been prosecuted. The aggregate deficit of these five years was 208,226,627 milreis, the average annual revenue 101,489,514, and the expenditure 149,-134,839. The extraordinary credits footed up to 194,252,407, a large issue of paper money was made, and the internal debt was increased. One loan was made in London (1875) amounting to £5,301,200, and a national loan was made in 1879 amounting to 51,885,000 milreis. At the close of this period (1880) the state of the public debt was as follows:

	Milreis.
Foreign debt (estimated at 27*d.*), 4, 4½, and 5 per cent	144,059,479
Internal debt, 4, 5, and 6 per cent	416,306,722
Total	560,366,201
Overdue amortization	3,364,972
Paper currency (April 1, 1880)	189,199,591
Public deposits (finance report, 1880)	52,956,985
Treasury bills (April 30, 1880)	11,632,700
Total	817,520,349

Tabulating the aggregate quinquennial revenue receipts, expenditures, and deficits of this period of twenty-five years, gives the following result:

QUINQUENNIUM.	Receipts.	Expenditures.	Deficits.
	Milreis.	Milreis.	Milreis.
1855–'56 to 1859–'60.	228,265,120	243,031,621	14,766,501
1860–'61 to 1864–'65.	262,957,589	302,248,836	39,291,247
1865–'66 to 1869–'70.	376,891,019	701,199,505	324,308,486
1870–'71 to 1874–'75.	514,253,712	570,865,737	56,612,025
1875–'76 to 1879–'80.	537,447,569	745,674,196	208,226,627
Totals	1,919,815,009	2,563,019,895	643,204,886

Average annual deficit, 25,728,195 milreis. Since 1879–'80 only the accounts of the year

following have been definitely settled, from which it appears that the receipts were 127,076,363, the expenditures 138,583,090, and the deficit 11,506,727. For 1881–'82 the Government admits a deficit of 5,054,000; but on removing some 7,000,000 milreis of Treasury bills, deposits, etc., from the revenue, and nearly 1,000,000 from the expenditures, which had no place there, the actual deficit amounts to 10,315,847. For 1882–'83 the Government's estimate places the deficit at 6,104,000; but as the revenue receipts include 17,666,800 of Treasury bills emitted, 141,200 in nickel coins, and 3,500,000 of deposits for special purposes, the deficit really amounts to 27,412,000 milreis as shown on the minister's report. For the current year the "Jornal do Commercio" calculates that the deficit on actual appropriations will be 28,366,066, making a total of 62,249,842 for the two years covered by the budget law now in force.

On the 19th of September, after a session of 139 days, the General Assembly of Brazil was formally adjourned. Although the financial state of the country is most critical, the imperial budget laws for the ensuing year were not passed, and no measures were adopted to aid or relieve the public Treasury. Supplementary or deficiency credits were passed, to an aggregate of 18,000,000 milreis ($9,000,000), one of which was for a deficit of 12,000,000 milreis in the public relief expenditures of the Ceará drought of 1878–'80. As the public departments are now running under the budget laws of 1882, which were prorogued to 1883 because the General Assembly failed to pass the regular annual appropriations, it is evident that this failure of last session can not be otherwise than inimical to a proper fiscalization of the public expenditures.

Revenue of the Provinces.—The following table shows the revenue of each province in 1882–1883, the total being 32,662,058 milreis, of which 17½ per cent., altogether 5,688,943 milreis, were spent on public instruction:

PROVINCES.	Revenue.	Proportion per cent. spent on public instruction.	Proportion per cent. of pupils.
	Milreis.		
Amazonas	1,664,000	6·79	4·1
Pará	2,742,000	13·5	5·6
Maranhão	788,596	14·8	1·7
Piauhy	349,421	10·9	1·1
Ceará	808,700	24·5	1·4
Rio Grande do Norte	308,327	26·4	1·5
Parahyba	460,141	18·8	0·8
Pernambuco	2,736,457	26·4	2·3
Alagôas	692,355	20·9	2·6
Sergipe	716,658	16·9	3·8
Bahia	3,484,687	15·9	1·8
Espirito Santo	358,980	25·7	4·1
Rio de Janeiro	6,258,684	19·9	4·2
São Paulo	3,743,460	14·2	2·1
Minas-Geraes	3,084,440	24·6	3·4
Paraná	797,000	14·5	2·6
Santa Catharina	342,354	26·6	3·3
Rio Grande do Sul	2,917,280	18·7	2·0
Goyaz	222,234	16·1	1·6
Matto-Grosso	241,286	21·6	3·8

In 1854 the total number of primary schools in the provinces was 4,014; in 1883 it had increased to 6,180, the increase being about two per cent. per annum.

The Mint.—Under provisions of the law of 1849 there have been coined since that year, to the close of 1882, 44,948,083 milreis gold and 18,979,927 milreis silver. From 1703 to 1883 the mint at Rio de Janeiro has coined 262,139,212 milreis gold and 35,508,316 milreis silver.

Commerce.—According to the last "relatório" of the Minister of Finance, the foreign trade of Brazil (official values), during the fiscal years 1880–'81 and 1881–'82, was approximately as follows, the minister stating that full reports had not been received from all the provinces:

MERCHANDISE.	1880–'81.	1881–'82.
	Milreis.	Milreis.
Imports	180,458,700	184,118,800
Exports	233,567,700	216,709,800
Total	414,026,400	400,828,100

From this it will be seen that the total foreign trade of the country is about 400,000,000 milreis, or, in round numbers, about $200,000,000 at the par of exchange. During the past fiscal year (1882–'83), although no general statistics of that year have been compiled, it is certain that the above totals were greatly reduced. The imports were considerably decreased because of the general stagnation in business and the increase in taxation. Toward the end of 1882 a new surtax of 10 per cent. was imposed on imports, and the customs-warehouse charges were largely increased. The immediate result of this step was a decrease in imports, both on account of the enhanced cost of goods and the additional costs of storage. Under the new warehouse charges, importers are limiting their receipts to current demands, and are keeping their stock reduced to the narrowest limits possible. In exports, with the exception of coffee, and possibly rubber, there was also a large falling off, owing to the failure of crops in the northern provinces, and to the general decline in many branches of industry. In the rubber-trade it is possible that the exportation was also reduced through the attempt to "corner" the market, though at the same time production has gone on steadily increasing. The customs revenue, however, shows a large increase, though how much of this is due to enhanced values it is difficult to say. In the absence of complete and trustworthy statistics it is impossible to form any accurate opinion as to the trade of the whole empire. The official reports, as complete as they ever appear, are always from three to five years behind, and the customs returns from the provinces are both irregular and confusing. They are neither accurate nor uniform. Taken all together, the customs receipts of last year will show a large falling off from the two or three preceding years. The causes

are political, financial, and industrial. For the past three or four years the state of business has been steadily going from bad to worse. The long-credit system gave facilities for transacting business long after the interior became really insolvent, and thus postponed the crash. Recently, however, the importers have begun to realize the extra-hazardous character of this system of long credits, and have, therefore, been steadily cutting them down. Five years ago a "cash" house (and "cash" here means five or six months' credit) was the exception; now the long-credit house is the exception, and business is being reduced to a cash basis as rapidly as outstanding credits will permit. This step, however, was postponed too long, for the outstanding credits are still enormous, and the interior is practically bankrupt.

Three years ago great difficulties were encountered in making collections in the provinces. There was very little money afloat, the masses were earning nothing, and everybody was in debt. This state of affairs was principally due to the bad management and extravagance of the large coffee and sugar planters, upon whose industries nearly the entire business of Central Brazil depends. Demoralized by the pernicious influences of African slavery, and recklessly over-confident because of the prosperity enjoyed by the cotton-planters during the years of high prices caused by the American civil war, and by the coffee-planters from 1871 to 1873, the great proprietors of the country plunged headlong into extravagant expenditures.

The foreign-trade movement in Brazil is officially given as follows:

YEAR.	Import.	Export.
	Milreis.	Milreis.
1879-'80	277,893,800	313,357,100
1880-'81	259,412,000	309,131,000
1881-'82	275,541,600	300,180,900
Average	270,949,100	307,556,300

The ensuing table shows the coastwise trade:

IMPORT AND EXPORT IN MILREIS.

1879-'80	180,712,800
1880-'81	155,843,600
1881-'82	174,899,400
Average	170,485,200

DIRECT EXPORT AND IMPORT OF GOODS AT RIO DE JANEIRO.

COUNTRIES.	Fiscal Year 1881-'82.	
	Export.	Import.
	Milreis.	Milreis.
To and from Germany	10,309,960	8,332,540
The West Indies	.....	21,366
Austria	163,397	147,062
Belgium	3,106,794	4,870,494
Cape of Good Hope	1,354,242	30
Canada	.....	.....
British Channel	166,127	.....
Chili	82,276	552,001
China	.....	7,658
Argentine Republic	1,305,461	3,522,684
Denmark	415,699	.....
Uruguay	1,524,256	5,599,723
United States	50,178,415	8,085,190
France	9,085,092	16,697,657
Gibraltar	502,911	.....
United Kingdom	7,114,926	37,615,874
Spain	7,657	403,666
Holland	.....	131,629
Italy	102,759	754,097
Mediterranean	429,781	.....
Mexico	.....	4,500
Paraguay	68	40
Peru	.....	.....
Africa	.....	.....
Portugal	2,841,145	6,547,997
Natal	71,820	.....
Russia	1,440	48,583
Scandinavia	124,049	242,920
Turkey	3,024	.....
Other countries	.....	.....
Totals	88,846,809	93,085,687

Trade of the United States with Brazil.—The import of merchandise and specie into the United States from Brazil during the fiscal year ended June 30, 1883, was $44,488,459, the domestic export from the United States to Brazil was $9,159,330, and the re-export of foreign goods and specie thither was $92,764. The principal imports from Brazil into the United States during the fiscal year ended June 30, 1882, consisted of coffee, 315,465,986 pounds; cocoa, 1,456,665 pounds; horse-hair, 690,770 pounds; India-rubber, 11,848,618 pounds; sugar, 228,683,398 pounds; wool, 493,505 pounds, and hides represented by a value of $1,445,541. The total import of Brazilian merchandise was $48,801,878.

The export of domestic goods from the United States to Brazil in the same year comprised the ensuing chief items: Flour, 618,908 barrels, worth $4,546,224; cotton goods, 6,993,979 yards, worth $709,756; iron and steel manufactures, $711,090; petroleum, 5,473,525 gallons, worth $663,575; lard, 3,698,462 pounds, worth $491,252; soap, 2,573,453 pounds, worth $134,783, and lumber and wooden-ware, $355,628, the total domestic export summing up $9,035,452. Re-export of foreign goods thither, $117,110.

The Rise in Coffee in 1883.—Fair Rio coffee stood in the New York market at 8½ cents on January 1, 1883; on November 21st it had advanced to 12½ cents. The gradual improvement in the value of coffee had begun in all consuming countries as early as October, 1882, when good ordinary Java had declined in Holland to the lowest ebb it had reached since 1848, say 25 centimes per half kilogramme; on November 20, 1883, it had advanced in Rotterdam to 33 centimes, the total rise in that market thus having been 32 per cent., while the improvement in Rio coffee in the New York market had been, as shown above, about 50 per cent. This greater advance in Brazil coffee in the leading American markets as compared with the advance in the leading European market in Java coffee, was due to the fact that

Brazil had a short crop in 1883. In part it was also due to a more active speculative movement in New York and Rio than in Holland and Europe generally, in this staple article of consumption.

EXPORT OF COFFEE FROM RIO DURING THE TWELVEMONTH ENDED JUNE 30.

DESTINATION.	1880.	1881.	1882.	1883.
	Tons.	Tons.	Tons.	Tons.
To European ports....	61,719	131,079	94,410	112,031
United States.....	110,435	123,581	134,800	152,557
Total.....	172,154	254,660	229,210	264,588

EXPORT OF COFFEE FROM SANTOS.

	Tons.
1877.....	41,104
1878.....	68,073
1879.....	68,979
1880.....	63,786
1881.....	80,414
1882.....	104,006

In 1882 there were fifty cotton-mills in operation in Brazil, having 2,305 looms and 77,828 spindles, employing 3,082 operatives, and having a capital invested of 8,632,000 milreis. They produced 22,076,000 yards of goods.

Cattle-raising.—The southern portion of the province of Rio Grande do Sul is the best suited for stock-raising. Land in this locality is difficult to obtain, it being generally hereditarily transmitted. Should it, however, come upon the market, the owners of adjoining property will make almost any sacrifice to obtain it rather than have a stranger settle in the neighborhood. Land is worth from $10 to $20 for each braça of frontage by 2,000 braças deep (a braça is 7 feet 2½ inches). Stock-cattle are worth, one with the other, $5 to $6; for butchery they bring from $2.50 to $13. They are generally sold at the breeding-grounds, as the means of transportation are of the most primitive kind and the cost large. The slaughter last year amounted to 260,000 head, against 275,000 the year before.

Rio Grande's Hide-Shipments to New York.—The following tables show the proportion of import of hides and kips into New York from Rio Grande, as compared with other sources of supply:

	1882.	1881.	1880.
Buenos Ayres	153,146	892,013	420,061
Montevideo.....	647,304	1,180,499	932,818
Rio Grande.....	109,558	63,398	144,150
Other ports.....	1,305,741	1,296,961	1,516,559
Domestic ports	358,778	351,728	410,587
Total.....	2,574,527	3,289,599	3,423,675

RECEIPTS OF HIDES AND KIPS IN NEW YORK FROM JANUARY 1ST TO DECEMBER 31ST.

	1883.	1882.	1881.
Buenos Ayres	147,104	153,146	892,013
Montevideo.....	378,877	647,304	1,180,499
Rio Grande	36,152	109,558	63,398
Other ports.....	1,352,745	1,305,741	1,296,961
Domestic ports.....	404,644	358,778	351,728
Total.....	2,319,522	2,574,527	3,289,599

Brazilian Woods.—Some investigations by M. Thanneur show that Brazil is rich in woods for engineering purposes. The "yandubay" is exceedingly hard and durable; the "courupay" is also very hard and rich in tannin; the "quebracho" is, however, more interesting than any, and grows abundantly in the forests of Brazil and La Plata. It resembles oak in the trunk and is used for railway-sleepers, telegraph-poles, piles, and so on. It is heavier than water, its specific gravity varying between 1·203 and 1·333. The color at first is reddish, like mahogany, but grows darker with time. Being rich in tannin, it is employed for tanning leather in Brazil, and recently has been introduced for that purpose into France. A mixture of one third of "quebracho" and two thirds of ordinary tan gives good results.

Diamond-Mining.—The discovery of the first deposits of gold in the province of Minas-Geraes, the most productive in Brazil, led to the search for diamonds as early as the close of the seventeenth century, the first being found at Serro. The fever spread, and moving northward into virgin country founded the village of Tijuco, the Diamantina of to-day, the center of diamond-mining in Brazil. M. A. de Bovet, professor at the School of Mines of Ouro-Preto, Brazil, has recently, in the "Annales des Mines," Paris, published an exhaustive account of a visit to that section. Diamonds are found in the provinces of Minas-Geraes, Bahia, Paraná, Matto-Grosso, and Goyaz. In Minas they are mined at Diamantina, Grão Mogol, Bagagem, Conceição, Cocães, and other points, the first named, however, being the most important. Diamonds are found in a rounded gravel, having peculiar characteristics, which is called by the miners "cascalho." It is a mass of small pebbles, chiefly quartz, mixed with very little clay. If examined with care it will be found to contain a large number of minerals, many of which are present in the cascalho from all the districts.

BRIDGES. See ENGINEERING.

BRITISH COLUMBIA. This, the most western province of Canada, extends from the United States on the south to the Northwest Territories on the north, or from the forty-ninth to the sixtieth parallel of latitude, and from the Pacific ocean on the west to the main ridge of the Rocky mountains, as far north as parallel 54°, and thence to the sixtieth parallel along meridian 120° W. on the east.

Area and Population.—British Columbia is in its infancy. With a territory of 341,000 square miles, it had in 1881 a population of only 49,459, of whom 4,350 were Chinese, and 25,661 Indians. Victoria, the capital, is on the southern end of Vancouver island, on the straits of Juan de Fuca. Its population is 6,000. There are no other towns of note. The chief villages are: Esquimalt, near Victoria; Nanaimo, on the Gulf of Georgia; New Westminster and Port Moody, near the mouth of the Fraser;

Hope, Yale, Lytton, Kamloops, Lillooet, Richfield, Cariboo, and Quesnel, in the Fraser valley, and Cassiar, in the northern part of the province.

Geography.—The Rockies run in three nearly parallel chains, although in some localities they almost unite. Between these ranges are rough valleys, or narrow plateaus containing small tracts of arable land, besides larger areas suitable for grazing. Its timber is chiefly the far-famed Douglas pine, though in many localities, especially along the mainland and Vancouver island shores, the sturdy hard-woods are found growing to a considerable size. Between the Rockies and the Cascades or Coast-range, is a broad, irregular plateau nearly one hundred miles in width, forming another district of "oases." In its valleys are found slopes, openings, and expansions, such that while, on the one side, grass grows luxuriantly, and oats, barley, and wheat ripen, on the other the ice is packed in the gorges throughout the year. But as rain falls very rarely on this plateau, the ice is of value in supplying moisture necessary to mature fall wheat and other grains.

Meteorology.—The following table, illustrating the temperatures and rainfalls of some of these plateau valleys, compared with Esquimalt on the straits of Juan de Fuca, is from official reports of the Canadian Government:

LOCALITIES.	Mean temperature.	Mean summer temperature.	Mean winter temperature — Dec., Jan., Feb.	Mean winter temperature — Jan., Feb., March.	Clouded sky.	Total annual precipitation.	Mean highest temperature.	Mean lowest temperature.	Absolutely highest temperature.	Absolutely lowest temperature.	Mean annual range.
	Deg.	Deg.	Deg.	Deg.	Per cent.	Inches.	Deg.	Deg.	Deg.	Deg.	Deg.
Esquimalt	48·42	57·98	39·46	39·17	53	28·41	80·1	17·2	85	8	62·9
Plateaus, inland	47·79	68·41	26·01	29·84	46	10·10	98·8	−9·4	105	−29	108·2

The cause of the dry climate of the plateaus is found in the wide and high Coast-ranges, which intercept the moisture of the westerly winds. It may rain for several days over the western slope of these mountains, while not a drop falls on the eastern, only fifty miles distant. The clouds fly eastward, but appear incapable of forming rain. However, on the Gold and Selkirk ranges of the Rockies rain falls abundantly.

Along the mainland shore and on Vancouver island are many large tracts of land admirably suited for farming, and toward the head of the Fraser and in the Thompson valley many agricultural and grazing farms are established.

Forests.—The plateau valleys and the plateaus are, as a rule, thinly wooded, although the Douglas pine and various hard-woods afford supplies far in excess of the present or the prospective demands. On the coast, and in Vancouver, however, the trees are of an enormous size, rivaling the giant pines of California.

Metals.—The province abounds in minerals, the most precious and valuable having already been found in paying quantities. It was only in 1857 that the first gold was discovered in British Columbia. The gold is found in nuggets, three brought forth in 1877 being worth $40, $90, and $130, respectively. In other places it is found in thin scales, the rocks in all such cases being igneous. Hitherto gold-mining has been conducted in the primitive way, washing the sand or gravel of the streams, and collecting the proceeds. In places a lucky miner averages $20 to $100 a day; but, as the claims are small, good luck does not last long. From experiments conducted in San Francisco, it seems there are localities where the quartz yields 1·21 ounce of gold, 2·48 ounces of silver, and several pounds of copper to the single ton. Some specimens of silver-ore have yielded $300 a ton, but ordinary specimens furnish 8·25 ounces of silver and ·6 ounce of gold. Native silver pellets have often been found, but in isolated localities. Copper is found in rich veins in several places already, and also in ores. It occurs in a native state in the Thompson river district.

Coal.—Coal is very abundant. The extensive fields of Nanaimo or Vancouver are worked, while many others on the mainland are awaiting development. The following are the exports of coal mined in British Columbia for the year 1882:

DESTINATION.	Tons.	Value.
To United States	188,756	$638,585
To Sandwich Islands	12,170	40,857
To China	5,670	19,845
To Mexico	3,960	13,860
Total	210,556	$718,147

During the same year British Columbia exported to the United States $723,225 worth of gold-quartz.

Education.—The system of free public education was established in British Columbia in 1872. During the first ten years of their existence the total expenditure for public schools amounted to $480,395. Up to the end of 1882 only 50 school-houses had been erected, and provision was made for 64 teachers for 1883. The number of pupils enrolled in 1882 was 2,653, with an average daily attendance of 1,359. There is one high-school in the province, with a registered attendance of 74. The education department is presided over by a chief superintendent, who acts under the direction of the Lieutenant-Governor in Council, through the Provincial Secretary. The individual schools are controlled by school boards, consisting of three members each, who are elected by resident male freeholders and house-

holders. The compulsory clauses of the school law require every child between the ages of 7 and 12, inclusive, to attend school for at least six months in the year. The penalty inflicted on the parent or guardian for non-compliance is $5 for the first offense, and $10 for each subsequent conviction.

BULGARIA, a principality created by the Treaty of Berlin, signed July 13, 1878, out of a portion of the Christian provinces of Turkey. The treaty provided that it should be an autonomous principality, tributary to Turkey, and under the suzerainty of the Sultan, with a Christian government, a prince elected by the people, and a national militia. By unanimous vote of the Constituent Assembly, Prince Alexander of Battenberg, brother of the then Empress of Russia, and grand-nephew of the German Emperor, was elected hereditary prince as Alexander I, April 29, 1879. The Constitution of 1879 vests the legislative authority in a single Chamber, the *Sobranje*, or National Assembly, elected by universal suffrage in the proportion of one deputy to every 10,000 inhabitants, and gives the Prince power to appoint additional members not to exceed half the number elected by the people. The duration of the National Assembly was fixed at four years, but the Prince could dissolve it at any time and order new elections. The Constitution was suspended by Prince Alexander in 1881, who dissolved the National Assembly, and, by despotic use of the military power and falsification of the returns, procured the election of a Grand National Assembly, the body intrusted with the power to make changes in the Constitution, which, by a vote of July 13, 1881, clothed the Prince with autocratic legislative, and executive powers for seven years.

Statistics.—The area of Bulgaria is estimated at 24,360 square miles. The population, as returned in the census of Jan. 1, 1881, was 1,998,983, of whom 1,023,730 were males and 975,253 females. As regards religion, 68·8 per cent. were Christians, 30·7 per cent. Mohammedans, and 0·5 per cent. Israelites; in respect to nationality, 66·7 per cent. were Bulgarians, 30·6 per cent. Turks, 1·3 per cent. Roumanians, 0·5 per cent. Greeks, 0·5 per cent. Israelites, 0·3 per cent. Germans, and 0·1 per cent. of other nationalities. In 1883 the emigration of the Mohammedan element recommenced on a large scale. The capital, Sofia, contained 20,541 inhabitants; Rustchuk, 26,867; Varna, 24,649; Shumla, 22,921. There were nine other towns of over 10,000 inhabitants. The main occupation of the people is agriculture. The exports of grain are about 1,500,000 tons per annum. Other articles of export are wool, tallow, hides, and timber. Coal and iron mines exist, but are almost entirely undeveloped. There is a railroad between Rustchuk and Varna, 140 miles in length.

Army.—The army has been the subject of particular attention on the part of Prince Alexander. In order to increase the reserve army as rapidly as possible, the period of service with the colors is only two years, instead of four. The army was trained by Russian officers, who fill most of the superior commands. Bulgarian officers have been educated at the Military Academy at Sofia to take their places as speedily as practicable. The number of Russian officers in 1882 was 376. In the autumn of 1883 there were 185 Russian officers still on the lists, and 400 of Bulgarian nationality. The total strength of the army was 16,500 men.

Political Review.—Prince Alexander, when by a state-stroke he abolished representative government, placed himself under the direction and tutelage of the Russian court. He soon found that his Russian mentors would give him no chance to exercise his statecraft, but pursued aims which were more in harmony with the ideas of the Radical party which he had expelled than with his own. The *coup d'état* placed it in the power of the Russians to strengthen their grasp upon the country. Alexander had made his cousin, the Russian Emperor, the arbiter between himself and his subjects, expecting when endowed with autocratic power to guide the policy of the country by balancing the interests of Russia and Austro-German interests against each other, and thus secure the independent position guaranteed by the Treaty of Berlin. Instead of the personal government at which he aimed, he was forced to submit to the dictation of Russian guides who sympathized with the Panbulgarian and radical ideas of the popular party which they had aided the Prince in excluding from the seats of government with the bayonet. Zankoff and Balabanoff, the Radical leaders, from their near place of exile in Eastern Roumelia, and in clandestine visits in the country, were able to carry on a lively agitation for the overthrow of the Prince. Hitrovo, the Russian consul-general, who had planned the arrangements of the *coup d'état*, and many of the Russian officers, openly fraternized with the Prince's enemies. Kryloff, the Russian general, who was Minister of War, refused to issue an order forbidding officers of the army to take part in these antagonistic demonstrations. Alexander journeyed to St. Petersburg, and threatened to lay down the crown if he was obliged to submit to such indignities, whereupon the Emperor recalled the obnoxious officials, and gave the Prince for advisers Generals Soboleff and Kaulbars, who were supposed to be free from Panslavistic tendencies, admonishing him at the same time to be sparing in the exercise of his autocratic powers.

The ministry which was formed in July, 1882, consisted of Gen. Soboleff, Premier and Minister of the Interior; Gen. Kaulbars, Minister of War; Natshevich—a Bulgarian, whose appointment as Minister of the Interior a year before in the place of the Russian Lieut.-Col. Remlingen, who was dismissed, had provoked angry menaces from Hitrovo—Minister of Fi-

nance; Vulkovich, Minister of Public Works and Minister of the Exterior *ad interim;* Grekoff, Minister of Justice; and Tesharoff, Minister of Education. The new National Assembly, a simply consultative body, contained 80 members, elected by the indirect system.

The Conservative party became gradually imbued with the same jealous distrust of Russian supremacy which the Liberals professed. The latter represented the sentiments of the bulk of the population, among whom gratitude toward their Russian deliverers, and affinity for the popular ideas agitating Russia in contradistinction to the ideas of liberty and reform which prevail in Western Europe, co-existed with a jealous spirit of resistance to the domination of the Russian Government.

The Russian generals worked for a time in harmony with their Conservative colleagues. But in January, 1883, a difference arose regarding the projected line of railroad from Sofia to Rustchuk. On their insistance, Vulkovich retired from the ministry, being succeeded by Stoiloff, a man of similar patriotic Bulgarian sentiments. The pretext for the dismissal of Vulkovich was the action of the Government in the matter of a Radical demonstration, for which action Soboleff was himself chiefly responsible. Zankoff, who had been kept in prison for many months, was a few weeks before allowed to leave the country. He returned to Rustchuk, and was received with public manifestations of sympathy. The demonstration was suppressed by the prefect. The Government, trying to satisfy all parties, dismissed the prefect and reimprisoned Zankoff. Other subjects of dispute arose, particularly the question of employing the civil power to execute a disciplinary decree pronounced against Miletius, Archbishop of Sofia, by the Bulgarian Synod. Soboleff acquiesced in the forcible seclusion of the prelate, but fearing the effect in Russia, where the act might be construed as an indignity committed upon a high dignitary of the Holy Orthodox Church, threw the blame upon his colleagues. In March, Stoiloff, Gregoff, and Natshevich sent in their resignations. A working Cabinet was formed, in which a Russian, Prince Hilkoff, was given the Ministry of Public Works, and other Russians or partisans of the generals the other posts. The rupture between the Conservatives and the Russian ministers became complete. When the Prince went to Moscow to attend the coronation of the Emperor, after first visiting the Sultan at Constantinople and stopping at Athens, he found there a deputation from the National Assembly, a deputation of Liberals, and his two Russian ministers, all desirous of laying their grievances before the Emperor. When, after the ministerial crisis in March, the Russian generals took the government of the country entirely into their own hands, they found themselves isolated. The contracts which they distributed among Russians rendered them unpopular. They rejected the authority of the Prince, and represented at St. Petersburg that constitutional government ought to be restored. They approached the Radicals, who demanded the restitution of the constitution of Tirnova. The Prince, who submitted tamely to the open insubordination of the Russian ministers, resisted the return to regular government, because he would not govern with a Radical ministry and Assembly.

The only hope of emerging from the lawless condition under which the country suffered, with no sovereign power capable of exercising authority, was by a compromise and fusion of the two warring political parties. The Russian emissaries were under standing orders to bring about a return to a constitutional *régime* as the chief part of their task. The Liberal leaders were recalled from exile, and in August they held consultations with the chiefs of the Conservative party. Their demand for the convocation of a Grand Sobranje, for the re-establishment of the constitution of Tirnova, was inacceptable.

The Russian Government sent M. Jonin as extraordinary embassador to direct the settlement of the question of the Constitution. Prince Alexander quarreled outright with his chief minister, and attempted to dismiss him and form a ministry of Bulgarian Conservatives. The Russian generals thereupon showed the Prince orders from the Emperor not to leave the country, even at the Prince's command. Jonin then presented an ultimatum, demanding that the Prince should lay down his autocratic powers, call a Great Sobranje within six months, for the adoption of a Constitution, and in the mean time leave the administration entirely in the hands of the two generals. Alexander finally complied with the demand by issuing a manifesto on Sept. 11th, announcing the appointment of a commission to elaborate a Constitution which would be laid before a Great National Assembly.

The Prince, in order to avoid the humiliation of resigning the sovereignty to the Russian agents, made up his mind at last to come to terms with the Liberal party. Zankoff and Balabanoff, on behalf of the Liberals, and Natshevich and Grekoff, the Conservative leaders, effected a compromise, whereby the constitution of Tirnova was restored by proclamation, subject to revision by the Great Sobranje, but the legislative powers were to be exercised by the extraordinary Sobranje elected in December, 1882, as to some extent they virtually had been all along, instead of by a new Sobranje elected under the old Constitution. This course was urged in a resolution of the National Assembly in which both parties united their votes. By this turn of affairs, General Soboleff was taken by surprise, and rendered powerless. The entire episode was prearranged by the Prince and the political leaders, all parties suddenly sinking their differences for the purpose of escaping the dictation of the obnoxious Russian agents. Giving the anomaly of gov-

erning under the Constitution with a National Assembly not constitutionally elected as their ground, the Soboleff-Kaulbars ministry, consisting of the two generals, Burmoff, Agura, Prince Hilkoff, and K. Zankoff, handed in their resignation, Sept. 19th. Stoianoff, whom the Prince had insisted on placing in charge of the Ministry of Justice, in opposition to the Russians, did not sign the paper. A Bulgarian ministry was formed, with Drogan Zankoff at the head, the man who had passed the last two years in prison and in banishment, and had visited Bulgaria only by stealth to agitate for the deposition of the Prince. Stoiloff received the portfolio of Justice.

Over the nomination of a Minister of War, Prince Alexander was again involved in strife with the Russian diplomatic representative. With both the political parties at his back, their fierce rivalries reconciled by the national danger of sinking into a Russian dependency, he was emboldened to refuse both the officers given to him to choose from, and select Gen. Lessovoy for the position. But the admonitions of M. Jonin caused him to yield the point, and accept Lieut.-Col. Rediger. A spirited contest over the control of the army ensued. Soboleff and Kaulbars had succeeded in gathering a party with Panslavistic tendencies, a part of whose programme was the confederation of the Balkan states. This party was now stronger, and carried on an active opposition to the Prince under the encouragement of Jonin and the leadership of Karaveloff, a more extreme and consistent Radical than Zankoff and his associates.

Alexander, in his disputes with the Russian agents, had several times received the hint that he might lose his throne. Suggestions had been thrown out to the people that Prince Waldemar of Denmark, brother of the Empress of Russia, would make a popular ruler. The Russian agents succeeded in throwing Prince Alexander into a dangerous passion by the recall to Russia, without warning, of Adjutant-Gen. Lessovoy, and another officer. The Prince discharged every Russian officer on his staff, and, when Col. Rediger refused to carry out the order, he took away his commission and demanded the resignation of his portfolio, threatening, in case he refused, to have him conducted across the frontier. The Russian Government did not resent it, but secured a more definite control over the Bulgarian army. The Bulgarian Government arrived at an understanding with Baron Kaulbars, the Emperor's aide-de-camp, and accepted a convention, signed for three years, whereby the Bulgarian Minister of War is to be appointed by the Prince, subject to confirmation by the Emperor. Russian officers are not allowed to accept civil appointments, nor to take part in political affairs, and are subject to the Minister of War, who is answerable to the Russian diplomatic representative.

Legislation.—The Sobranje, after receiving legislative authority, immediately applied itself to the settlement of the debt to the Russian Government for the cost of the occupation, and to the railroad convention with Austria. This convention (see AUSTRIA), though opposed by the Russian representatives, could not well be avoided, as it was an affair of the European concert. The terms for the payment of the indemnity for the Russian occupation in the Turkish War, amounting to 10,618,250 paper rubles, were settled by a treaty entered into with Russia.

C

CABLES, INTERNATIONAL PROTECTION OF SUBMARINE. When the first attempt to lay an Atlantic cable was made in 1864, France, Brazil, Hayti, Italy, and Portugal entered into an agreement recognizing the neutrality of the cable, and accepting the obligation not to injure or destroy it, even for military purposes, in the event of war. This treaty fell through with the cable project. In 1869 the United States Government called a conference at Washington, to consider the international relations of the ocean telegraphs and their regulation in war and peace. The American Government prepared a project which provided for the protection of the cables and their neutrality in war-time; but the outbreak of the Franco-German war prevented the meeting of the conference. In 1871 Cyrus W. Field submitted a similar proposal to the conference in Rome, and the Italian ministry undertook to lay it before the European governments. Only one answer was received, a favorable one from the Austrian Government. Confidential inquiries proved it to be out of the question to expect the majority of the powers to agree to the inviolability of the cables in time of war. The Institute of International Law accepted the situation, in discussing the matter at their meeting at Brussels, in 1879, and proposed a treaty to provide for the arrest and punishment of persons who injure cables on the high seas, and the neutralization of cables running between neutral countries. They proposed that persons suspected of injuring a cable should be subject to arrest by naval vessels of any of the powers, but that they should be brought to trial in the country of the vessel on which they are taken. They also suggested that measures taken to interrupt cable communication in war-time should not extend, unless it should be unavoidable, to the injury of the cable; and if it does, that the same government should repair the damage when peace is restored.

In 1881 several cables were badly injured

in the North Sea. The English subjects who were interested appealed to their Government to secure reparation, but their request was received coldly. The conference held at the Hague in 1881 for the regulation of the North Sea fisheries, in which the Netherlands, Germany, France, Great Britain, Belgium, Sweden, and Denmark took part, adopted a resolution recommending the governments to take measures to prevent the injury of submarine cables by fishermen.

When this question came up at the Electrical Congress at Paris, in 1881, the French Government proposed a conference for the discussion of the subject. The conference met Oct. 16, 1882, in Paris. Representatives of France, Austria, Germany, Great Britain, Italy, Russia, the Netherlands, Belgium, Denmark, Switzerland, Turkey, Norway, Sweden, Spain, Portugal, Greece, Servia, Roumania, the United States, Colombia, British India, Japan, China, Mexico, Nicaragua, the Argentine Republic, and Costa Rica were participants. The conference confined itself to the subject of the protection of cables in time of peace. After long deliberations, a compromise project was adopted. Any person who intentionally or through criminal negligence injures or breaks a submarine cable, is declared an offender against the law. The courts of the country to which the vessel belongs upon which the illegal act is committed, are to have jurisdiction of the offense.

CALIFORNIA. State Government.—The State officers during the year 1883 were the following: Governor, George Stoneman, Democrat; Lieutenant-Governor, John Daggett; Secretary of State, T. L. Thompson; Treasurer, W. A. January; Comptroller, John P. Dunn; Superintendent of Public Instruction, W. T. Welcker; Attorney-General, C. E. Marshall; Surveyor-General, H. I. Willey. Judiciary: Supreme Court—Chief-Justice, Robert F. Morrison; Associate Justices, M. H. Myrick, E. W. McKinstry, E. M. Ross, J. D. Thornton, J. R. Sharpstein, S. B. McKee.

Legislative Session.—The Legislature, consisting of 30 Democrats and 10 Republicans in the Senate, and 58 Democrats, 21 Republicans, and one Independent in the House, met on the 8th of January and adjourned on the 13th of March. Among the measures passed were the following:

Bills in aid of the State University; the road law; concerning tax-sale redemptions; classifying municipal corporations; providing for a preparatory course for the university in the common-school system; a new and good street law; in aid of decrepit veterans of the Mexican War; in aid of foundling asylums; in aid of viticulture; in aid of horticulture and the destruction of fruit insect-pests; protecting food-fish; settling contests as to preferred labor claims; providing for a wall at the Folsom Prison; a fair municipal government bill; giving boards of health control over drainage-fittings for houses; a county government bill, about equally balanced between good and ill provisions; in aid of silk-culture; to prevent the introduction of contagious diseases into the State; providing additional accommodations for the insane; requiring the insane with sufficient estates to pay for their care; giving a fit salary to the Clerk of the State Board of Equalization; providing for better investment of school moneys; aiding the State Agricultural Society; aiding the Mining Bureau; paying some just claims; aiding the industrial education of the deaf and dumb and the blind; providing for the care and repair of State buildings, and aiding State normal schools; and submitting the text-book question to a vote; some few amendments to the Code, of no particular significance, the best being a new provision for authentication of marriage; the repeal of the Sunday law; the oleomargarine bill; the Statistical Bureau bill; the street railway-ticket bill; the Lake Tahoe forestry bill, limited to a small region, and hence tending to prevent general remedies being applied; the legislative and congressional partisan apportionment bills; the bill legislating out of office Republican Harbor Commissioners; vacating a judicial office in Mono instead of impeaching the incumbent; the hair-cutting bill for county prisoners; for the destruction of wild animals; as to refunding the indebtedness of cities; auditing the accounts of the Insurance Commissioner; the jurisdiction of justices; as to juvenile offenders; as to the method of submitting constitutional amendments; as to drawbridges in cities; purchasing portraits of Governors; as to the manner of assessing railroad property.

The following are the new congressional districts: 1st—Del Norte, Humboldt, Trinity, Siskiyou, Shasta, Modoc, Lassen, Plumas, Sierra, Tehama, Colusa, Mendocino, Lake, Sonoma, and Napa counties; 2d—Butte, Sutter, Yuba, Nevada, Placer, El Dorado, Amador, Calaveras, San Joaquin, Stanislaus, Merced, Tuolumne, and Mariposa; 3d—Yolo, Sacramento, Solano, Contra Costa, Marin, and Alameda; 4th—part of San Francisco; 5th—part of San Francisco, and all of San Mateo, Santa Cruz, and Santa Clara; 6th—San Benito, Monterey, San Luis Obispo, Santa Barbara, Ventura, Kern, Los Angeles, San Diego, San Bernardino, Alpine, Tulare, Fresno, Mono, and Inyo.

The Governor's Views.—Gov. Stoneman was inaugurated on the 10th of January. In his address he expressed the following views regarding the regulation of freights and fares, the Sunday law, the Chinese question, prison reform, and irrigation:

Three years have now elapsed since the people solemnly expressed their views upon the subject of the regulation of fares and freights, and delegated to a commission, chosen under the new organic law, the authority to execute their expressed will. It is to be deeply regretted that the retiring Railroad Commission has entirely neglected and refused to take any positive steps toward enforcing its powers. It is to be earnestly hoped that the incoming Commission will prove to be composed of men of sufficient courage and sagacity to meet this issue in a spirit of fairness; to deal justly by the transportation companies and candidly by the people. I wish it to be distinctly understood that all the power and influence of the Executive department of the government will be cheerfully exercised on behalf of the commission to bring the issue between the people and the transportation companies to a final and satisfactory termination. The question of the regulation of fares and freights is the great living issue of the day, and no postponement of its solution to a future time will prove satisfactory either to the people of this State or the Union. The question of the power of the State to fix and regulate the charges for fares and freights upon transportation lines within the State has passed beyond the line of

legitimate argument. As to the policy of enforcing the power of the State to regulate fares and freights there can not, since the result of the late election, be further doubt.

Sumptuary laws are and ever have been opposed to Democratic teachings, and find no support among liberal-minded people. For many years sections 299, 300, and 391, of the Penal Code, commonly called the "Sunday law," have been on our statute-books. Under slightly varying forms this law has been in existence in this State during the major portion of the past quarter of a century. Now and then spasmodic efforts have been made to enforce it, but without success. In every contest before the courts the condition of public opinion has been shown by the fact that the law has been practically placed on trial, and not the particular defendant at the bar. In cases where the testimony adduced has been conclusive that the alleged offense has been committed, juries have almost uniformly refused to convict—a state of facts never before observed with reference to any other portion of our criminal jurisprudence. Such is the condition of the sections above cited. It is unwise to encumber the statute-books with an enactment which experience has proved can not be enforced. The result at the late election is an emphatic indorsement of the attitude of the now dominant party on this important subject, and our duty in the premises is perfectly clear. We all concede that those sections of our Codes which provide for certain holidays and non-judicial days are essential to happiness and health. The repeal of the "Sunday law" will in no wise interfere with the permanency or effect of our civil legislation in the matter of a day of rest. Nor is there any disposition to disturb those penal enactments which are intended to protect religious assemblages from all unseemly interference.

Within the past year Congress has granted to the people of this coast partial relief from the much-deplored evil of Chinese immigration. There are some who affect to believe this important question finally settled by the statute referred to. There are those who evince a desire to nullify its effect by a loose construction of its terms and an inefficient execution of its provisions. The law had hardly taken effect when another bill was introduced into the Senate of the United States, and I believe is now pending in that body, under which many thousands of Chinese now serving under labor contracts in the West India islands might be permitted to cross the territory of the United States to their homes in the Chinese Empire. Considering that we have no power to deport the Chinese, if they were once permitted to land in this country, they might remain here permanently. Against this new danger the people of this coast will depend upon their representatives in Congress to guard.

The congregate system of imprisonment, which, owing to the peculiar construction and want of cell-room in our prisons, is necessarily in vogue therein, is, in my opinion, not conducive of the moral well-being of the prisoner. The most important object of penal confinement ought to be to effect a reformation of the prisoner. I would respectfully recommend that, if practicable, a system of isolation and solitary confinement be instituted among those of the most vicious character. In the absence of such a system of isolation, San Quentin Prison, from its geographical position, might be made a distributing prison. All convicts should be sentenced to that institution in order that they may be registered and graded, the prison directors selecting those for distribution to Folsom and any other branch prison hereafter established. After careful study and examination of past records, the comparatively good should be retained and the vicious and incorrigible confined at another prison, so far as the interests of the State may permit. This system, strictly carried out, would form a perfect record of the antecedents and disposition of all convicts within the State. This system is not only essential for the good of the prisoner and for the guidance of the directors, but would enable the district attorneys of each county to be always able to procure a complete record to embody in their information or indictments the number of convictions of each defendant, if any such there be, as they are now compelled by law to do under what is known as the "Prior-Conviction Act."

In a large portion of the State, agricultural interests are being developed by the aid of irrigation. The history of all countries dependent upon irrigation shows that this practice has necessitated the enactment of laws especially designed for the protection and regulation of irrigation, the maintenance of order, equity, and economy in the appropriation and use of waters, and that the subject has been one of the most difficult to deal with in legislation. Our own experience, limited though it be, is sufficient to establish this fact, as our courts are crowded with litigation growing out of irrigation practices, which constitute a serious drawback to our prosperity.

Finances.—The receipts for the thirty-second fiscal year (1881) were $4,751,573.66, and for the thirty-third fiscal year (1882), $4,698,654.41. Of these, for the thirty-second year, $3,636,008.23, and for the thirty-third, $3,685,367.60, came from property-taxes; and from poll-taxes, for the thirty-second year, $316,869.48, and for the thirty-third year, $248,816.30.

During the two years the disbursements on account of the State were:

FUNDS.	Thirty-second fiscal year.	Thirty-third fiscal year.
General	$2,243,567 88	$1,528,826 23
School	1,797,312 51	1,858,579 98
State school land	28,690 56	8,825 51
Interest and sinking	314,745 00	310,555 83
University	71,800 25	81,496 59
Consolidated fund, University	33,500 00	12,000 00
State Library	11,859 88	5,980 47
Supreme Court Library	2,878 40	1,914 35
Election reward	200 00	.....
Condemnation	8,000 00	.....
State drainage construction	287,943 61	.....
Harbor improvement	482,884 79	165,248 07
Mining Bureau	11,780 00	10,700 00
Indian War bond	213 73	.....
Construction fund, Drainage District No. 1	76,046 45	.....
Levee District No. 5	14,740 00	10,240 00
Funded debt of 1873	.....	99,000 00
Total	$5,385,612 56	$4,418,862 13
Less general fund warrants issued and canceled during the thirty-second fiscal year	721 00	.....
Total	$5,384,891 56	$4,418,862 13

For the thirty-second year the disbursements exceeded receipts $633,317.90, but for the thirty-third year the receipts exceeded disbursements $280,292.28. The Comptroller says, "The natural inference to be drawn from the fact that in any one year the disbursements exceeded the receipts, is that the finances of the State were not in a healthy condition, but this would be unjust, as such disbursements were made from not only incoming moneys, but from moneys accrued in previous years to the funds where the discrepancy occurs."

It cost $16,101.90 to carry convicts to prison in the thirty-third fiscal year, and $22,500 for transportation of insane patients to the asylums.

The following tables show the assessed values of the several classes of property in the State for the years 1881 and 1882 respectively:

ASSESSED VALUES OF PROPERTY FOR 1881.

Value of real estate	$348,869,810
Value of improvements on real estate	115,218,041
Value of personal property, exclusive of money	146,180,978
The amount of money	18,597,566
Value of railroads operated in more than one county	34,829,664
Total	$658,691,059

TAX-RATE FOR 1881.

For general fund	37·7 cents—	$2,190,084
For school fund	22·4 cents—	1,300,000
For interest and sinking fund	5·4 cents—	315,000
Total	65·5 cents—	$3,805,084

ASSESSED VALUES OF PROPERTY FOR 1882.

Value of real estate	$331,808,193
Value of improvements on real estate	114,516,747
Value of personal property, exclusive of money	120,848,458
The amount of money	12,702,056
Value of railroads operated in more than one county	27,602,813
Total	$607,472,262

TAX-RATE FOR 1882.

For general fund	27·8 cents—	$1,488,735
For school fund	24·8 cents—	1,300,000
For interest and sinking fund	7·5 cents—	398,000
Total	59·6 cents—	$3,186,735

The counties paid to the State for taxes in 1881, $4,230,075.68, and in 1882, $4,144,659.93.

From other sources the State received, for 1881, $52,497.98, and for 1882, $553,994.48, making a total of all receipts from all sources for the thirty-second year, of $4,751,573.66, and for the thirty-third year of $4,698,654.41.

The amount of outstanding warrants, June 30, 1882, was $286,749.69; balance in Treasury, $1,016,021.77. On the financial condition of the State, Gov. Perkins, in his valedictory message, says:

The State has taxable property of the assessed value of about $610,000,000. Her interest-bearing debt amounts to $3,293,500. Of that debt the State owns, holding in trust for educational purposes, $2,690,000. This leaves only $603,500 of her bonds in private hands; and there is now in the Treasury, and provided for by taxes already levied, something more than $500,000 applicable to their purchase or redemption. That showing is a good one for a Commonwealth that has expended within the past ten years more than $4,000,000 upon public buildings, more than $4,500,000 for charities, and more than $2,000,000 for public education.

Within fifteen years our expenditures for educational purposes have increased from the annual average of $275,000 to that of the current fiscal year—$2,029,974; expenses, ordinary and extraordinary, have been met; permanent improvements of great value have been made; taxation has not been excessive, comparatively speaking, and the public debt has been steadily reduced.

During the present administration the ordinary expenses of government have been light, the extraordinary ones great. The public institutions have been ably and economically managed. The various offices have been efficiently filled and prudently conducted. The expenditures for all purposes have averaged $4,244,038 annually. For the five years preceding, the annual average expenditure was $3,633,902. The increased average expenditure yearly has been $610,136. Such increase is owing in part to extraordinary appropriations made—and, in my opinion, wisely made—for various purposes; but is owing mainly to our growth as a community, which has naturally necessitated greater outlay.

For charities, the annual expenditures were, for five years preceding this administration, $433,870. The average for the past three years has been $623,262. For public education, the average yearly outlay for the five fiscal years immediately preceding my inauguration was $1,380,628. During my term of office, the average annual outlay for the same purposes has been $1,733,948. The increased annual average, therefore, for these two items alone, amounts to $592,865—which is within $17,000 of the total increased average.

The State Board of Equalization was provided for under the Constitution for the purpose, in part, of effecting an equalization of the assessment of the property of the State. From the report of the board it would appear that it has not been able, through defects in the law, and decisions of the Supreme Court, in raising the assessment of the State to the true standard of value in money. Thus, while, exclusive of railroads, the assessment of 1880 exceeded that of 1879 in the sum of $103,068,642, the assessment of 1881 and 1882 did not increase in the proportion which was expected from the known progress of the State in material wealth and industrial pursuits. The assessment of 1881 was below that of 1880 $36,278,541. The assessment of 1882 shows a decrease below that of 1880 of $55,158,105, and below that of 1881 of $18,879,564.

I entered upon the duties of my office with deficiency bills amounting to more than $218,000. A part of this sum was for increase in salaries of the judiciary, and expense of Railroad Commission and Board of Equalization, that were created by the new Constitution, and began life the middle of the fiscal year. The Legislature of 1880 appropriated $414,000 more than it levied a tax to raise. Hence resulted the tax levy for 1881 of 65·5 cents as against that for 1880 of only 59 cents. The last Legislature paid all these accumulated debts; there was a falling off in the assessed value of property of $51,000,000, and yet, as the result of prudent economy in outlay, the tax levy for 1882 was reduced to 56·6 cents; and to-day our public buildings are all in a most excellent state of preservation; and one of our prisons almost placed upon a self-sustaining basis.

California contributes $190,000 annually to twenty orphan asylum societies toward the expense of caring for the children. The insane asylums cost $458,000, and the State prisons $450,000.

Viticulture.—The Board of Viticultural Commissioners has performed its labors with credit to itself and profit to the State. Established but three years, it has seen the increased plantation of from 50,000 to 60,000 acres of land in vines, which plantations were made mainly through the encouraging influence of this board, it being also instrumental in choice of the vines planted and the locations selected. The actual present value of these new plantations is over $15,000,000, and the increased value by this reason given to the surrounding properties must be fully as much more. The impetus thus given to the plantation of vineyards still continues. The present plantations will yield the producers after the next vintage not less than six and a half million dollars per annum. There are now planted not less than 100,000 acres of vineyards, of which, probably, 7,000 are planted with the choicest of imported vines.

Election Returns.—The result of the election in November, 1882, was as follows: For Governor, Stoneman, Democrat, 90,724; Estee, Republican, 67,175; McDonald, Prohibitionist, 5,765; McQuiddy, Greenbacker, 1,020. All the State officers elected were Democrats. The Democrats also elected two Congressmen-at-large, four district Congressmen, three Railroad Commissioners (one in each district), and three members of the State Board of Equalization (first, third, and fourth districts). In the second district the Republicans elected the member of this board. The following is the vote for district Congressmen:

DISTRICT.	Democratic.	Republican.	Other.
First	22,738	14,847	656
Second	20,229	19,246	556
Third	21,807	19,473	1,266
Fourth	23,105	18,387	710

CANADA, DOMINION OF. The Dominion of Canada, the largest and in many respects the most important colony of Great Britain, comprises the greater portion of the North American continent lying north of the United States.

Geography.—Its boundaries are: on the south, the United States and the Great Lakes; on the west, from the Straits of Juan de Fuca, latitude 48°, to Dixon Entrance, latitude 55° N., in the Pacific ocean, and from Dixon Entrance to the Arctic ocean, in latitude 70°, the United States Territory Alaska; on the north lies the Arctic ocean; while on the northeast and east are Baffin bay, Davis straits, the Atlantic ocean, Labrador, Straits of Belle Isle, and the Gulf of St. Lawrence. Labrador, though part of the mainland, is under the administration of Newfoundland. Included within these boundaries are 3,370,000 square miles of land.

Notwithstanding the great breadth of Canada, when considered in degrees of longitude, its breadth in miles is only 3,200 from extremity to extremity, and from ocean-port to ocean-port, only 2,200. From Port Nelson, on Hudson bay, to the mouth of the Skuna river, in British Columbia, is only 1,360 miles.

The physical features of Canada, considered as a whole, are very regular. The northeastern coast-line is deeply indented by Hudson and James bays, while its eastern one is broken irregularly by the Gulf of St. Lawrence and the Bay of Fundy.

The lakes of Canada are detailed in the following table:

NAME.	Area in miles.	Depth in feet.	Latitude of center.
Nipigon	1,650	850	50°
Simcoe	300	704	44° 25′
Nipissing	550	684	46° 15′
Temiscamingue	350	650	47° 15′
Champlain	567	93	44° 30′
St. John	500	50	48° 30′
Great Bear*	14,000	230	66°
Great Slave*	20,000	580	62°
Athabasca*	5,000	600	59°
Wollaston*	2,000	600	58°
Deer*	3,000	500	57°
Winnipeg	10,000	700	52° 30′
Winnipegosis	2,300	728	52° 30′
Manitoba	2,000	720	51°
Woods	500	977	49° 30′

The provinces of Canada are:

NAME.	Area in miles.	Population in 1881.	Capital of province.
Ontario	220,000	1,923,228	Toronto.
Quebec	188,000	1,359,027	Quebec.
New Brunswick	27,000	321,233	Fredericton.
Nova Scotia	20,000	440,572	Halifax.
Manitoba	123,000	65,954	Winnipeg.
British Columbia	341,000	49,459	Victoria.
Pince Edward	2,000	108,891	Charlottetown.

* Great Bear, Great Slave, Athabasca, Wollaston, and Deer are not properly surveyed yet, hence the areas, etc., are only approximate. They are all shallow.

(For details concerning the various provinces, see the articles under their respective names.)

Territories.—To the east of British Columbia lie the four new Territories of Canada, viz., Athabasca, Alberta, Saskatchewan, and Assiniboia. By an Order in Council, dated May, 1882, these were erected out of the Northwest Territories, for the convenience of settlers and for postal and other purposes.

Assiniboia.—The District of Assiniboia, about 95,000 square miles in extent, is bounded on the south by the 49th parallel; on the east by the western boundary of Manitoba, meridian 101½; on the north by the southern boundary of Saskatchewan, the 52d parallel of latitude; and on the west by the eastern boundary of Alberta, near meridian 111½.

Saskatchewan.—The District of Saskatchewan, about 114,000 square miles in extent, is bounded on the south by Assiniboia and Manitoba; on the east by Lake Winnipeg and the Nelson river; on the north by the 55th parallel of latitude; and on the west by Alberta, meridian 111½.

Alberta.—The District of Alberta, about 100,000 square miles in extent, lies between the 49th parallel on the south and the southern boundary of Athabasca, the 55th parallel, on the north; and between the western boundaries of Assiniboia and Saskatchewan, meridian 111½, on the east, and the eastern boundary of British Columbia on the west.

Athabasca.—The District of Athabasca, about 122,000 square miles in extent, lies between Alberta on the south and the 60th parallel of latitude on the north; and between the eastern boundary of British Columbia, meridian 120, on the west, and the meridian forming the eastern boundary of Alberta, continued north until it intersects the Athabasca river, thence that river, Lake Athabasca, and Slave river, to the 60th parallel.

TERRITORIES.

NAME.	Area in miles.	Most important places.
Assiniboia	95,000	Regina, Qu'appelle, Moose Jaw, Livingstone, Chesterfield, Wood Mountain, Forts Walsh and Pelly, Broadview, Medicine Hat, and Touchwood.
Saskatchewan	114,000	Battleford, Cumberland, Prince Albert, Saskatchewan, Forts Pitt, Carlton, and La Corne.
Alberta	100,000	Fort Macleod, Edmonton, Victoria, Rocky Mountain House, Forts Calgary, Saskatchewan, Old Bow, and Assiniboine.
Athabasca	122,000	Dunnegan, Vermilion, Peace River, Athabasca, Forts Macleod, and Lesser Slave.
Keewatin	360,000	Fort York, Fort Churchill, Norway, and Oxford.

The remaining portions of Canada, unofficially named Northwest, North, and Northeast Territories, include nearly one half of it. The capital of the organized Territories is Regina. Formerly it was Battleford, but it was changed in 1882 to its present site.

Population.—The official census shows that Canada contained, in 1881, 4,324,810 souls. The following table exhibits the countries in which these were born, with the number from each:

England	169,504	Russia	6,876
Ireland	185,526	Spain	215
Scotland	115,062	Sweden, Norway	2,076
Canada	3,715,492	United States	77,758
Other colonies	8,143	Other places	14,169
France	4,339		
Germany	25,328	Total	4,324,810
Italy	777		

The following table gives the population according to origin or nationality of parents:

African	21,394	Jewish	667
Chinese	4,383	Russian	1,227
Dutch	30,419	Scandinavian	4,214
English	881,301	Scotch	699,868
French	1,298,929	Spanish	1,172
German	254,319	Swiss	4,583
Icelandic	1,009	Welsh	9,947
Indian	108,547	Others	43,586
Irish	957,403		
Italian	1,849	Total	4,324,801

In this table Canadians and Americans are classed under the various headings, English, French, Irish, Dutch, etc.

By provinces, the following is the classification of the population:

Ontario	1,923,288	Prince Ed. Island	108,89
Quebec	1,359,027	Manitoba	65,954
Nova Scotia	440,572	British Columbia	49,459
New Brunswick	321,233	Territories	56,446

NOTE.—This is the census of 1881. Since that date Manitoba and the Territories have increased by immigration over 150,000 (1883).

The following statement shows the total number of the adherents to the various churches in Canada. (For more extended information concerning the leading denominations, see the articles under their respective titles.)

Adventists	7,211	Methodists	742,981
Baptists	296,525	Pagans	4,478
Brethren	8,881	Presbyterians	686,165
Roman Catholics	1,791,989	Quakers	6,558
Anglican	574,818	Unitarians	2,126
Congregational	26,900	Universalists	4,517
Disciples	20,193	Not given	110,191
Refor'd Episcopal	2,596		
Jews	2,393	Total	4,324,801
Lutherans	46,350		

Indians.—There are nearly 108,000 Indians in the Dominion, distributed as follows:

Ontario	15,780	Athabasca District	2,398
Quebec	11,071	British Columbia	35,052
Nova Scotia	2,219	Rupert's Land	3,770
New Brunswick	1,416		
Prince Ed. Island	290	Total	107,722
Manitoba & N. W. Ter.	35,726		

Of the above, 46,962 reside on reserves, and cultivate 75,365 acres of land.

Schools are maintained for the children of Indians chiefly at the expense of the Dominion Government. The attendance at them is as follows:

Ontario	1,907	N. W. Territories	971
Quebec	404	British Columbia	652
Nova Scotia	107		
New Brunswick	67	Total	4,126
Prince Ed. Island	18		

History and Government.—The Dominion of Canada was founded on the 1st of July, 1867, by the federal union of the provinces, Nova Scotia, New Brunswick, and the Canadas, Upper and Lower. By the act of Union the Canadas were named Ontario (Upper), and Quebec (Lower). The "British North America Act" is the name given to the Imperial statute creating the Dominion. In that statute authority is given to create the province of Manitoba. By virtue of that, and succeeding imperial and Canadian statutes amending it, that province was admitted into the Dominion in 1870, being formed out of that part of the Hudson Bay Territory known as Assiniboia Colony, or earlier as Selkirk Settlement. This Assiniboia was not the same as the present Territory of Assiniboia, but more nearly corresponded to the present Manitoba. In 1871 British Columbia was admitted into the Dominion, and in 1873 Prince Edward Island. The Territories were acquired in 1870, by transfer from the Hudson Bay Company.

The form of government in Canada is in theory monarchical, but in practice republican. It consists of a legislative and an executive power. The legislative power is a Parliament composed of a House of Commons, a Senate, and a Governor-General. The members of the House of Commons are elected by popular vote. At the time of the Confederation, this House consisted of 181 members, of whom 82 were elected from Ontario, 65 from Quebec, 19 from Nova Scotia, and 15 from New Brunswick. These numbers are readjusted according to each decennial census, subject to the following rules: Quebec has the fixed number of 65 members. There shall be assigned to each of the other provinces such a number of members as will bear the same proportion to the number of its population (ascertained at such census) as the number 65 bears to the number of the population of Quebec (so ascertained). In the computation of the number of members for a province, a fractional part not exceeding one half of the whole number requisite for entitling the province to a member, shall be disregarded; but a fractional part exceeding one half of that number shall be equivalent to the whole number. On any such readjustment the number of members for a province shall not be reduced unless the proportion which the number of the population of the province bore to the number of the aggregate population of Canada at the then last preceding readjustment of the number of members for the province is ascertained at the then latest census to be diminished by one-twentieth part or upward. Such readjustment shall not take effect until the termination of the then existing Parliament.

After the census of 1881 the readjustment stood as follows: Quebec, 65; Ontario, 92; Nova Scotia, 21; New Brunswick, 16; Manitoba, 5; British Columbia, 6; Prince Edward Island, 6; total, 211.

The members continue in office for a period of five years from the day of the return of the writs, subject, however, to an earlier dissolution by the Governor-General. The meetings of the House of Commons are presided over by one of its own members, elected Speaker. To become a member of Parliament no property qualification is necessary, but every member must be either a native-born or legally naturalized British subject. In 1874 voting by ballot was introduced, and the law for the prevention of bribery and other corrupt practices at elections was made more stringent than formerly. The elections, except those for British Columbia, Manitoba, and some of the remote or thinly settled districts of Ontario and Quebec, take place, according to law, on the same day throughout the Dominion.

The Senate of Canada, at the time of confederation, was composed of 72 numbers, 24 being appointed from Ontario, 24 from Quebec, 12 from New Brunswick, and 12 from Nova Scotia. The present (1884) status of the Senate is: Ontario, 24; Quebec, 24; Nova Scotia, 10; New Brunswick, 10; Manitoba, 3; British Columbia, 3; Prince Edward Island, 4; total, 78. By the British North America Act, the number of Senators is limited to the present number 78, unless Newfoundland should enter the Dominion, in which case provision is made to allow the number to reach 82. The chief qualifications to be a Senator are: to be thirty years of age; to be either a native-born or a naturalized British subject; to hold, over and above all mortgages or charges of any kind, property valued at $4,000; to be a resident in the province for which he is appointed; in Quebec, to be resident in the electoral district for which he is appointed. Senators are appointed for life (subject to certain conditions) by the Governor-General in Council, or practically by the Premier or leader of the government of the day, who recommends the appointment. A Senator is disqualified by non-attendance in the Senate for two consecutive sessions. The Governor-General is appointed by the Government of Great Britain and Ireland, and represents the Queen. Wherever the Governor-General is named it is clearly understood, and is so stated in the British North America Act, that it refers to the Governor-General acting by and with the consent of the Queen's Privy Council for Canada. His special or independent functions are few. He has the privilege of declaring "according to his discretion, but subject to the provisions of the British North America Act, and to instructions from the British Government, either that he assents in the Queen's name to a bill that has passed both the House of Commons and the Senate, or that he withholds the

Queen's assent, or that he reserves the bill for the signification of the Queen's pleasure." When the Governor-General, in the Queen's name, assents to any bill, he sends by the first opportunity an authentic copy of the act to one of the principal Secretaries of State for the Government of Great Britain and Ireland, and if the Queen in Council within two years after the receipt thereof thinks fit to disallow the act, such disallowance, being signified by the Governor-General, annuls the act from and after that day. The salary of the Governor-General is £10,000 sterling ($50,000), payable out of the Consolidated Revenue Fund of Canada. The legislative jurisdictions of the Canadian and the Provincial legislatures are clearly defined—in this, as indeed in the general plan of confederation, much has been modeled after the general Constitution of the United States. The provinces stand nearly in the same relation to the Dominion that the individual States do to the Union. But there is one very important difference, that all matters not specifically mentioned as coming under the exclusive jurisdiction of the various provinces, belong exclusively to the Dominion.

This division of legislative jurisdiction has been the subject of considerable controversy between the province of Ontario and the Dominion. One point of dispute, the control of the liquor-traffic, was finally settled by appeal to the Privy Council of Great Britain in the autumn of 1883. The Government of Canada claimed that the powers exercised by the provinces of not only raising a revenue from the sale of liquor-licenses, but also of limiting the hours and modes of such sale, were in excess of their privileges, and consequently in the session of 1883 the Dominion Parliament passed a general liquor law. This law did not in itself interfere with the provincial laws, but while asserting the right of the federal authority in such matters, imposed double liquor laws on the provinces. A test case was submitted to the Privy Council of Great Britain and Ireland, with the result that Ontario, and hence all the provinces, is confirmed in the right of limiting the hours and modes of selling, as well as of levying the revenue on shops, saloons, etc.

Another subject of contention was in the matter of escheats. The province of Ontario claimed, on the death without heirs of a person named Mercer, that his property reverted to the province. The Canadian Government claimed it as reverting to Canada. As in the former case, the Privy Council sustained the province of Ontario. Several questions involving disputed jurisdiction are still pending, so that before many years the relative duties and powers of both federal and provincial legislatures will be definitely settled.

Viscount Monck was Governor-General when the Dominion was established. He was succeeded in 1868 by Sir John Young. Lord Dufferin was appointed in 1872, and retained the office for nearly seven years. The Marquis of Lorne was Governor-General from 1878 to 1883, when he was succeeded by the Marquis of Lansdowne. The administration of justice is intrusted to judges appointed for life, i. e., during good behavior, but removable by the Governor-General on address of the Senate and House of Commons. The Governor-General in council appoints the judges of the Superior, District, and County Courts in each province, except those of the Probate Courts in Nova Scotia and New Brunswick. These judges must be selected for the provinces of Ontario, Nova Scotia, New Brunswick, Prince Edward Island, British Columbia, and Quebec, from the bars of those provinces. There is a Supreme Court of the Dominion, which is a general Court of Appeal.

Militia.—The militia of Canada are under the control of a Minister of Militia and Defense, who is responsible to Parliament. The militia consists of all male inhabitants of Canada of the age of 18 years and upward to 60, not exempted or disqualified by law, and being British subjects; but the Government may require all male inhabitants capable of bearing arms to serve, in case of a levy *en masse*. The militiamen are divided into four classes, as follow: 1. Unmarried men and childless widowers from 18 to 30 years of age. 2. Unmarried men and childless widowers from 30 to 45 years of age. 3. Widowers with children and married men from 18 to 45 years of age. 4. Those from 45 to 60 years of age. These shall serve in order as above. The militia is divided into active and reserve land force, and active and reserve marine force. The active land force is composed of corps raised by voluntary enlistment; corps raised by ballot; corps composed of men raised by voluntary enlistment and of men balloted to serve. The active marine force is similarly raised, and is composed of seamen, sailors, and persons whose usual occupation is upon any vessel navigating Canadian waters.

Canada is divided into 12 military districts, each under the supervision of a deputy adjutant-general assisted by brigade-majors. These districts are subdivided into brigade divisions, and these still further into regimental and company subdivisions. The militia is to be enrolled each year by the officers of the reserve militia.

The active militia consists of cavalry, artillery, engineers, mounted infantry, infantry and marine corps, a total number (all volunteers) of about 36,000 men.

The term of service is three years. These turn out annually for twelve days' drill, as a rule, in brigade camps, where they undergo a fairly good training (under canvas) in their duties. The strength of the regiment is usually from 6 to 10 companies of 42 men and 3 officers each. There is an officer commanding the militia, selected from the regular army of Great Britain, and holding rank therein of colonel or a superior rank. He ranks as ma-

jor-general in the militia, and receives a salary of $4,000.

There is a permanent college, the Royal Military College of Canada, at Kingston. Its objects are to impart a complete education in all branches of military tactics, fortification, engineering, and general scientific knowledge.

Finances.—The total debt of Canada, which in 1867 was $93,046,052, in 1882 was $205,865,252, and bore an average interest of 3·82 per cent. The amount of debt payable in Canada was $73,242,377, consisting of provincial debts assumed, savings-bank deposits ($14,229,000), Dominion stock, etc., and $15,807,910 of Dominion notes. The debt payable in London, which in 1867 amounted to $67,069,116 and bore an average interest of 5·55 per cent., had grown by 1882 to $132,122,875, the rate of interest having been reduced to 4·39 per cent. Where, in the first year of confederation, the major portion of the foreign debt bore 6 per cent. interest, the portion paying so high a rate had, by 1882, been reduced to $9,254,000, and the large sum of $89,060,000 bore only 4 per cent., the remainder bearing a rate of 5 per cent. No less than $4,000,000 of debt was retired in the year last named.

The Consolidated Fund of Canada is composed of her public works, such as canals, water-power, railways, railway debts, harbors, and river and lake improvements, together with all securities, cash, bankers' balances, lands, mines, and royalties, as well as the revenues from customs, excise, and public lands. The receipts on account of this fund, in 1882, were $33,883,000, of which $21,581,000 were from customs, and $5,884,000 from excise. The further receipts were $23,000,000, consisting of Dominion notes, savings-bank and other loans. The expenditure on Consolidated Fund account was $27,067,000, otherwise, $29,000,000, of which $12,000,000 went in redemption of debt. The sum of $7,351,000 was expended in 1882 on capital account, two thirds of which was for railways, the remainder on canals, telegraphs, and Dominion lands. The post-office savings-banks show an increase during 1882 equal to $2,260,000 over 1881. The number of accounts is 25,633 greater (51,463 is the total number), and the average amount at the credit of each depositor has grown from $97 to $184 in fifteen years.

Banking.—Canadian banks resemble most closely the joint-stock banks of Scotland, which first came into existence early in the last century; with, however, the important difference that where each individual proprietor in the latter is liable to the full extent of his property for the obligations of the bank, the Canadian shareholder is, like the American one, liable only for double the amount of his shares. In some particulars, both of banking and currency, the United States model has been followed. The decimal currency system of dollars and cents, used for a hundred years by their American neighbors, was adopted by Canadians twenty years ago.

The banking system of Canada is not, certainly, a copy of the cash-credit or personal security system of Scotland, where one can get credit from a bank if sureties will vouch for him. Nor is the system closely allied to what may be described as the mortmain or funded security plan of English bankers, under which one must either deposit title-deeds to land or hand over Government or other stock, to obtain a loan. Loans are freely made by Canadian banks on stocks and bonds, but lending upon real estate is left to the loan societies. The largest item by far among the assets of the banks is their discounts of promissory notes bearing two or more names. The rate of interest charged has ranged of late years from 7 to 9 per cent.; to-day it ranges from 6 to 8, 7 per cent. being the legal rate.

Early in 1870 the banks ceased to issue notes of a smaller denomination than $4, and in the next year the $1 and $2 notes were issued by the Government, as they have since continued to be. Offices of the Receiver-General and Government savings-banks were opened in various cities, for the issue and redemption of the small notes and for the sale of Dominion stock. Assimilation of the currency of the various provinces was provided for by Hincks's act of 1870, and the British silver coins, which up to that time had circulated in Canada, were arranged to be withdrawn.

By the act of 1871 banks were required to hold not less than one third of their cash resources in Dominion notes, which are procurable in exchange for gold at all times. The Government was constituted the chief specie-reserve-provider and comptroller. An amendment of April, 1882, provided that any excess over $9,000,000—to which amount the issue of Dominion notes was at that time limited—may be held by the Receiver-General partly in specie and partly in deposits in chartered banks, the proportion being 20 per cent. in specie and 80 per cent. in deposit receipts. By the act of 1871 banks were exempted from tax upon their circulation.

Among the twelve heads of departments who administer the affairs of Canada at Ottawa, not the least important is the Minister of Finance, a minister of the Crown, who is charged with the direction and control of the public accounts, revenue and expenditure, and financial affairs generally of the country, excepting customs and inland revenue, which have separate ministers. The banks and the currency are under the control of this department.

The paid-up capital of the twenty-seven banks of Canada at the date of confederation (1867) was under $30,000,000; their circulation, $10,000,000; deposits, $38,000,000; and discounts, $53,000,000. The number of banks had grown by 1883 to forty, whose aggregate capital exceeded $61,000,000; circulation, $34,-

000,000; deposits, $106,000,000; and discounts, $145,000,000.

The following is a list of the chartered banks of Canada, with the amount and value of their shares, their capital, and reserve funds in March, 1883:

BANKS.	When chartered.	Amount per share.	Capital paid.	Rest.	Yearly dividend.	Cash value per share.
					Per cent.	
Bank of British North America	1836	£50	$4,866,666	$1,215,000	6	$273 50
Canadian Bank of Commerce	1867	$50	6,000,000	1,650,000	8	68 25
Commercial Bank of Windsor, Nova Scotia	....	40	260,000	78,000	8	.....
Dominion Bank	1871	50	1,500,000	750,000	10	100 87
Eastern Townships Bank	1859	50	1,397,659	270,000	7	60 00
Exchange Bank of Canada	1872	100	500,000	250,000	8	170 00
Federal Bank of Canada	1874	100	2,691,610	1,300,000	7	158 25
Halifax Banking Company	1872	20	500,000	80,000	6	21 60
Bank of Hamilton	1872	100	852,580	135,000	7	116 00
Imperial Bank of Canada	1875	100	1,472,000	504,000	8	144 00
La Banque du Peuple	1855	50	1,000,000	240,000	5	4 00
La Banque Jacques Cartier	....	25	500,000	125,000	7	.....
La Banque Nationale	1860	100	2,000,000	.....	..	.....
Maritime Bank	1872	100	697,800	.....	..	55 00
Merchants' Bank of Canada	1864	100	5,698,696	750,000	7	.....
Merchants' Bank of Halifax	1869	100	1,000,000	180,000	7	180 00
Molson's Bank	1855	50	2,000,000	425,000	7	.....
Bank of Montreal	1818	200	11,999,900	5,500,000	12	.....
Bank of New Brunswick	....	100	1,000,000	400,000	8	140 00
Bank of Nova Scotia	1832	200	1,000,000	325,000	8	150 00
Ontario Bank	1857	100	1,500,000	225,000	6	.....
Quebec Bank	1818	100	2,500,000	325,000	7	.....
Bank of Ottawa	1874	100	600,000	60,000	6	.....
People's Bank of Halifax	1864	20	600,000	50,000	6	110 00
People's Bank of New Brunswick	....	50	150,000	.....	..	.....
Picton Bank	1873	40	200,000	32,000	6	108 00
Standard Bank of Canada	1875	50	762,510	80,000	7	.....
Bank of Toronto	1855	100	2,000,000	1,000,000	8	.....
Union Bank of Halifax	1864	50	500,000	80,000	6	114 00
Union Bank of Lower Canada	1865	100	2,000,000	.....	7	.....
Union Bank of Prince Edward Island	1863	...	500,000	.....	..	120 00
Bank of Yarmouth, Nova Scotia	1864	100	383,970	20,000	8	110 00
St. Stephen's Bank, New Brunswick	1836	100	200,000	.....	..	.....
Western Bank of Canada	1882	...	161,439	.....	..	.....
Bank of British Columbia	....	...	.....	.....	..	.....
Exchange Bank, Yarmouth, Nova Scotia	1869	70	245,021	35,560	6	.....
La Banque Ville Marie	....	...	464,250	.....	..	.....
La Banque de St. Jean	....	...	226,090	.....	..	.....
La Banque de St. Hyacinthe	....	...	257,850	.....	..	.....
La Banque d'Hochelaga	....	...	685,200	.....	..	.....
Total	....	...	$60,873,241	$16,084,560	..	.....

Building and Loan Societies.—The loan companies of Canada play an important part in her money-lending system. They were established as building societies after the English plan, the design being to assist investors to acquire land or to build houses by making payments in regular installments to that end; but they have for the most part changed their method of late years, and now lend upon the security of real estate the money which they receive from depositors in Canada, and debenture-holders in the United Kingdom, in addition to their paid-up capital. In 1846 legislation was granted in Upper Canada favoring such societies. About 1847 very similar acts were passed by Quebec and New Brunswick, and in 1849 by Nova Scotia.

The growth of societies of this kind, both in number and extent, has been remarkable, especially in Ontario. In the first return of their operations made to Government in 1863, only eleven permanent building societies were included, having a total capital of $1,208,000, deposits of $365,000, and mortgage loans of $1,500,000. There were, besides, at this time terminable building societies whose aggregate capital was $873,000. By 1873 the number of societies shown in this yearly return had grown to twenty-three; their capital to 6,876,000; deposits to $2,869,000, while the value of the mortgages they held exceeded $9,500,000. It was soon found possible to borrow money in Britain, however, at lower rates and in larger sums than was possible at home; and in 1874 a Dominion act was passed granting power to such societies to issue debentures. Several of the leading companies at once became borrowers in the Scottish and English money-markets, and the additional capital obtained gave a decided impetus to the working of such leading corporations. By a return to Government for the calendar year 1880, it appears that at least eighty such societies were then in existence in the Dominion; capital, $24,495,975; deposits, $11,713,633; loans secured on real estate, $56,612,200.

Insurance Companies.—There are in Canada sixty-nine insurance companies, some of which do more than one kind of insurance. The nature of the business done by them is as follows: companies doing life-insurance, 39; fire, 29; inland marine, 6; ocean, 3; accident, 5; guarantee, 2; plate-glass, 1; steam-boiler, 1. The deposits for the protection of policy-holders, held by the Receiver-General in trust for these companies, according to the last official report, amounted to $7,032,377.53.

The total net amount insured by fire-policies

in force in Canada at the end of 1881 was $462,-210,968. The premiums received by all companies for fire-insurance during 1881 amounted to $3,827,116. Of this amount Canadian companies received $1,206,476; English companies, $2,353,258; and American companies, $267,388.

The total amount received in premiums by marine companies during 1881 was $3,131,-925.97. Of the 39 life companies, 9 are Canadian, 18 British, and 12 American. The total amount of life-insurance in force at the end of 1881 was $103,290,932. Of this amount $46,-041,591 is in Canadian companies, $20,983,092 in English companies, and $36,266,249 in American companies. In all 62,857 persons are insured. The following was the surplus of assets over liabilities of the Canadian companies in existence at the end of 1881: Canada Life, $451,752; Citizens', $20,518; Confederation, $235,916; Mutual Life, $42,107; North American, $59,831; Ontario Mutual, $27,495; Sun, $127,324; Toronto, $37,510.

Agriculture.—The total value of the agricultural exports from the Dominion for 1881 was $21,268,327. The several provinces exported these products as follows: Ontario, $11,426,-692; Quebec, $8,242,024; Nova Scotia, $526,-004; New Brunswick, $141,772; Manitoba, $21,367; Prince Edward Island, $910,222.

The agricultural products were sent almost entirely to England and the United States; $9,490,890 to the former, and $10,631,374 to the latter. Fourteen countries in all shared in these exports. The chief productions of the soil exported were as follow:

ARTICLES.	Bushels.	Value.
Barley	8,800,579	$6,621,183
Beans	108,923	117,708
Oats	2,926,582	1,191,573
Peas	4,245,590	3,478,008
Rye	870,296	758,840
Potatoes	2,295,307	830,218
Wheat	2,523,678	2,592,820
Fruit (green)	334,588 bbls.	645,658
Flour (of wheat)	439,728 "	2,173,108
Hay	168,881 tons.	1,813,208
Malt	25,515,754 lbs.	649,557

ACRES OF LAND OCCUPIED, AND NUMBER OF OWNERS AND OF TENANTS.

PROVINCE.	Total occupied.	Total improved.	Under crops.	In pasture.	Gardens and orchards.	Total owners.	Total tenants.
Ontario	19,259,909	11,294,109	8,870,266	2,619,088	804,805	169,140	36,690
Quebec	12,625,877	6,410,264	4,147,984	2,207,429	54,858	128,982	12,844
New Brunswick	3,809,621	1,258,299	849,678	392,160	11,452	83,901	2,786
Nova Scotia	5,396,882	1,880,644	942,010	917,010	21,624	51,710	3,929
Prince Edward Island	1,126,658	596,731	467,211	126,935	2,585	12,736	842
British Columbia	441,255	184,885	88,657	98,457	2,955	2,410	318
Manitoba	2,384,337	250,416	230,264	17,197	2,771	8,742	301
Total	45,358,141	21,899,181	15,112,284	6,385,562	401,335	408,491	57,245

Forest Products.—The total value of the productions of the forest exported in the year 1881 was $24,960,012. The several provinces exported as follows: Ontario, $6,576,332; Quebec, $12,785,228; Nova Scotia, $1,325,-280; New Brunswick, $4,068,241; British Columbia, $162,747; Prince Edward Island, $42,189.

Mineral Products.—The total value of the mineral products exported from Canada in 1881 was $2,767,829. The following statements show the amount of each mineral exported:

ARTICLES.	Tons.	Value.
Coal	420,055	$1,123,091
Gold-bearing quartz	....	767,318
Gypsum	130,961	119,399
Mineral oils ... gallons	2,456	631
Antimony-ore	46	3,991
Copper-ore	19,802	150,412
Iron-ore	44,677	114,850
Manganese-ore	2,101	38,738
Silver-ore	....	34,494
Phosphates	15,601	239,493
Salt ... bushels	253,555	39,566
Sand and gravel	55,860	12,511
Stone and marble	28,189	81,924
Other minerals	....	41,481

Fisheries.—The exports of fish and articles produced from fish and other marine animals, amounted in 1881 to $6,867,715. The value exported from the various provinces was as follows: Ontario, $128,839; Quebec, $747,-549; Nova Scotia, $4,278,731; New Brunswick, $786,400; Manitoba, $3,930; British Columbia, $400,984; Prince Edward Island, $521,282.

Manufactures.—A great impetus has been given to manufacturing interests throughout the Dominion by the protective act known as the National Policy. In addition to supplying the demand of Canada itself with a very large part of the articles necessary in every department of life and labor, the manufacturers are now able to compete successfully in some important lines with other countries. The amount of capital invested was $165,302,623; hands employed, 254,935; total value of products, $309,676,068. Manufactures were exported from Canada in 1881 to twenty-seven other countries, the total value being $3,075,095.

The value of the principal articles manufactured for export was as follows:

Agricultural implements	$31,269
Biscuits	17,228
Carriages	46,442
Clothing	9,959
Cordage, ropes, and twine	12,031
Extract of hemlock-bark	150,068
Furs	8,228
Grindstones	35,755
Gypsum or plaster, ground	13,888
Iron: Stoves	3,309
Other castings	14,887
Scrap	191,210
Other, and hardware	84,718

Junk and oakum	35,177
Leather: Sole and upper	416,902
Boots and shoes	101,727
Liquors: Ale, beer, and cider	20,824
Whisky	2,598
Other spirits	3,264
Machinery	40,201
Oil-cake	39,474
Organs	27,612
Rags	49,044
Sewing-machines	165,452
Ships sold to other countries	348,018
Starch	32,691
Steel, manufactures of	142,656
Stone and marble, wrought	18,802
Tobacco	44,808
Wood: Furniture	100,857
Doors, sashes, etc	22,280
Other manufactures of	291,657

Shipping.—The total number of vessels registered in the Dominion, Dec. 31, 1881, was 7,394, measuring 1,310,896 tons, register tonnage. The total estimated value of these vessels was $39,326,880. Three hundred and thirty-six new vessels were built in the Dominion during 1881, measuring 74,060 tons, register tonnage, and valued at $3,332,700.

The merchant shipping of the Dominion is now exceeded by that of three other countries: Great Britain, the United States, and Norway.

Exports.—The exports from Canada amount annually to about $100,000,000. They consist chiefly of the products of the forest, the mine, agriculture, and animals.

The rapid increase in the export trade of the Dominion during the years 1880 and 1881 is shown by the following table:

COUNTRIES.	1879.	1880.	1881.
Great Britain	$36,295,718	$45,846,062	$58,751,570
United States	27,165,501	33,349,909	36,866,225
France	714,375	812,529	662,711
Germany	112,090	82,237	84,932
Spain	50,596	60,727	46,653
Portugal	185,748	165,885	108,594
Italy	148,472	163,787	145,997
Holland	9,718	102,592	215,754
Belgium	40,490	638,811	258,433
Newfoundland	1,641,417	1,510,300	1,528,469
British West Indies	1,955,584	1,906,053	1,787,818
Spanish West Indies	1,237,598	1,319,588	1,167,612
French West Indies	219,121	223,978	111,175
Other W. India islands	88,367	94,439	80,769
South America	741,442	789,940	732,111
China and Japan	56,551	37,546	19,761
Australia	290,762	139,901	146,363
South Africa	45,515	82,178	81,644
Other countries	541,755	534,651	499,297
Totals	$71,491,255	$87,911,458	$98,290,823

In 1882 the largest share of Canadian exports went to the United States, while the greater portion of the imports came from Great Britain. Thus:

COUNTRIES.	Exports.	Imports.
	Per cent.	Per cent.
United States	46·94	42·86
Great Britain	44·33	44·91
Other countries	8·73	12·33

Railways.—Although the railway system of Canada is yet in its infancy, immense and rapid strides have been made in recent years, as the following statistics show. The total mileage on June 30, 1882, was:

	Miles.	Increase during year.
Railways in operation	7,530·44	269·98
Railways having the track laid	589·00	203·70
Railways being graded, etc	3,139·16	279·16
Total	11,258·60	.....

The nominal capital on June 30, 1882, was:

Ordinary share capital	$142,936,524 63
Preference share capital	71,531,940 40
Bonded debt	92,487,932 42
Aid from Government and municipalities	108,655,412 85
Total	$415,611,810 30

This shows an increase of $26,326,109.99 over the previous year.

The number of passengers carried during the year ending June, 1882, was 9,352,335, an increase of 2,408,664, or 34·68 per cent. The freight handled was 13,575,787 tons, an increase of 1,510,364 tons, or 12·51 per cent.

The earnings of the railways for 1881–'82 are:

		Increase for year.
Passengers	$10,018,478	$1,795,224
Freight	17,729,945	*
Mails and express	1,087,460	91,301
Other sources	235,557	90,525
Earnings of roads not detailed	6,049	267
Totals	$29,097,789	$1,977,317

The operating expenses are:

Maintenance	$4,614,041	Increase,	$498,943
Working and repairing of engines	6,834,530	"	850,810
Working and repairs of cars	2,219,015	"	158,801
General operating expenses	8,643,939	"	896,428
Expenses of roads not detailed	79,183	Decrease,	138,692
Total	$22,890,708	Net inc'e,	$2,269,290

Thus the earnings show an increase of $1,040,280, and the working expenses of $2,269,290, over the previous year.

The net profits were:

Receipts	$29,097,789
Expenses	22,890,708
Net profit	$6,687,081

The construction of the Canada Pacific Railway was one of the conditions under which British Columbia entered into the union of provinces. It was at first the intention to make the work a Government enterprise, and as such it was begun. In 1881, however, the road was transferred to a company. By the terms of contract, this company was bound to complete the line through Canadian territory, from Callander in Ontario to Port Moody in British Columbia. As the most difficult parts of the road were not at that time completed, it was only on receipt of great privileges and subsidies that the company undertook the work. An important privilege granted to the company is that "for twenty years from the issue of the charter (1881), no line of railway shall be authorized by the Dominion Parliament to be constructed south of the Canada

* Though the increase in freight in tons was 12·51 per cent., yet the receipts for freight show a decrease of $937,037 as compared with the previous year.

Pacific Railway, from any point at or near the Canada Pacific Railway, except such line as shall run southwest, nor to within fifteen miles of latitude 49. And in the establishment of any new province in the Northwest Territories provision shall be made for continuing such prohibition." This clause was intended to bar the entrance into the United States of any other road; in other words, to force trade through Canada *via* the Canada Pacific Railway, or, if through the United States, over their lines. The province of Manitoba claims that, as it was organized as a province before the passage of that act, the clause is of no effect in its territory; therefore rival lines are being projected to the Dakota border from Manitoba.

The lands of the company in the Northwest are offered on terms as favorable as the Government's, and already some millions of acres have been disposed of.

Recent investigations, coupled with the experience of 200 years, have proved that Hudson bay is navigable, and its ports are open for at least six months each year. This route is attracting attention among capitalists and business men in Great Britain, and two railways are in course of construction from Winnipeg to York Factory. The distance from Liverpool to York Factory, or Fort York, is a little less than to Montreal.

Canals.—The canal system of Canada is extensive, locks being required to overcome the rapids on the St. Lawrence river as well as Niagara Falls. These are the important canals of Canada, but minor ones are in use to render navigable the Ottawa, the Rideau to Kingston, the Trent river and lakes, the Richelieu to Lake Champlain, and thence to Albany, and other waters. The Trent valley, the Georgian bay and Ontario, or the Huron and Ontario canal, is intended ultimately to connect the Georgian bay waters with those of Lake Ontario.

The following table indicates the cost of the canals from the outset, as well as their earnings for the year 1882:

CANALS.	Total cost.	Earnings for 1882, including tolls, rents, etc.
Lachine	$8,163,718 09	$114,578 00
Beauharnois	1,624,682 01	
Cornwall	2,522,519 81	
Williamsburg—i. e., Farrar's, Rapide, and Galops	1,826,312 54	
St. Lawrence river below Montreal, dredging, etc.	187,404 08	
Welland	20,309,365 09	116,350 88
St. Ann's	532,248 66	58,511 05
Carillon and Grenville	2,885,858 92	
Culbute	812,577 28	
Rideau	4,182,670 10	7,882 26
Chambly	651,745 01	24,022 20
St. Peter's	585,747 19	926 74
Burlington Bay	.....	8,807 90
Survey of Baie Verte	9,992 78	.....
Total	$43,418,602 87	$326,029 03

Art Education.—Industrial drawing finds a place in the programme of school studies of every province of the Dominion. The object aimed at is practical drawing. Nothing of a purely artistic nature is taught in the public schools, but only such drawing as can be done by all who attend school. Teachers are compelled to pass an examination on this subject before obtaining their certificates.

Art education, in the strictest sense of the application of the term art, is not neglected. In both Ontario and Quebec the Government makes a liberal grant in aid of art-schools. In Ontario there are three of these special schools of art—in Toronto, London, and Ottawa. In Quebec there are a number of smaller institutions aided by the Government grant, which is made through the Society of Arts and Manufactures. The Marquis of Lorne and the Princess Louise did a great deal for the encouragement of painting in Canada, and it was through their interest in the subject that the Royal Academy of Artists was established. This society holds an annual exhibition in some of the large cities of the Dominion, and has done much to develop the taste of the people, and to direct general attention to the subject of art.

Medical Education.—The various medical colleges throughout the Dominion are in a very efficient condition as regards the theoretical part of the work, but not quite so fully up to the present requirements of complete medical education in a practical point of view. In all the universities and colleges a full four-years' course of study is required, and in some of the colleges there is a summer session. On the more important subjects—as medicine, surgery, and anatomy—there are two courses of six months each. The degrees and licenses granted by the different universities and colleges in Canada are accepted by licensing bodies of Britain, and admit the holder of such degree or license to examination for a qualification to practice in Britain without further attendance upon lectures. A student who obtains the degree of M. B. or M. D. from a Canadian university, is not eligible for practice until he has also obtained the diploma of the licensing body for the province in which he intends to practice. On account of this regulation, nearly all the students take the examinations of the university with which their college is affiliated, and also that of the Council of the College of Physicians and Surgeons, for the necessary license to practice. Students must spend at least three winter sessions in hospital work, and at least six months of a summer term with a regular physician in practical compounding and dispensing, in order to be admitted to the final examination of the council. No qualification whatever from the United States admits to practice in Canada; and only such from Britain as can be registered there as a qualification in medicine and surgery.

CAPE COLONY AND SOUTH AFRICA. The Cape of Good Hope is a British colony at the southern extremity of the continent of Africa. It was first settled by the Dutch, and passed into

the possession of Great Britain during the Napoleonic wars. It has had a responsible government since 1872. The Parliament consists of a Legislative Council of 21 and a House of Assembly of 68 members, both elected by voters qualified by a certain amount of income. The Governor is Sir Hercules G. R. Robinson, appointed in 1880. The Prime Minister is T. C. Scanlen.

Area and Population.—The area of Cape Colony proper is estimated at 199,950 square miles. Its population in 1875 was 720,984, of whom 236,873 were of European origin. The great majority of the European population are descendants of the original Dutch, French, and German settlers. The colored population consists chiefly of Kaffirs and Hottentots. The rest are half-breeds and imported Malay laborers. Cape Colony includes a large extent of annexed native districts, some parts of which contain a considerable white population. Including Basutoland, which was placed under the administration of the colonial authorities in 1875, but again detached in 1883, the total area of Cape Colony was 441,750 square miles, and its total population 1,618,211. These dependencies and annexed districts comprise Griqualand West with an area of 17,800 square miles and a population of 45,277; the Transgariep, or Damara and Namaqua Lands, having an area of 200,000 square miles, and a population of about 250,000; and the Transkeian districts, otherwise called Kaffirland proper, with an area of 17,000 square miles, and a population of 475,000. The area of Basutoland is 7,000 square miles, and its population 127,000.

Commerce.—The commerce of Cape Colony in 1881 consisted of exports to the value of £4,220,706, and imports to the value of £9,227,171. Wool is the only important export article, constituting nearly nine tenths of the total exports. Minor articles of export are copper-ore, ostrich-feathers, and sheep-skins. The quantity of wool shipped to England in 1881 was 47,165,019 pounds. The number of sheep in the colony in 1875 was 9,836,065. There were 961 miles of railway open on the 1st of January, 1882.

Finance.—The revenue of the colony in 1881 was £4,835,189, including money borrowed; the expenditure, £5,472,263. There was a debt in 1882 of £15,441,700.

Natal.—Natal, formerly a part of the colony of the Cape of Good Hope, was detached and made a crown colony in 1856, administered by a Governor with the assistance of an Executive Council and a Legislative Council, the latter consisting, since 1879, of 13 official and 15 elective members. The area is estimated to be 21,150 square miles. The population in 1881 was computed to be 408,280, comprising 25,271 of European descent, mostly English, 362,477 natives, and 20,536 coolies. There was a decrease in both the white and native population since 1877. The exports in 1881, chiefly wool, amounted to £474,934; the imports to £1,194,992. The revenue of the colony amounted in 1881 to £518,924; the expenditure to £492,338; the public debt to £1,631,701. The Governor is Sir Henry Ernest Bulwer.

Transvaal State.—The Transvaal State, or South African Republic, independent since 1852, was annexed to the British crown in 1877. After the Transvaal war complete autonomy was restored by the convention of Aug. 3, 1881, but suzerain rights were preserved with respect to foreign affairs, giving the British Government supreme control over the relations of the republic with the native races. The area is 110,183 square miles. The white population is from 40,000 to 45,000, descendants of the original Dutch and Huguenot settlers of the Cape. The native population numbered, in 1879, 774,980. A triumvirate, composed of S. J. P. Kruger, M. W. Pretorius, and P. J. Joubert, was elected, Dec. 13, 1880, and invested with extraordinary powers. Kruger was elected regular President in 1883.

Orange River Republic.—The Orange Free State achieved independence in 1854. It has an area of 41,320 square miles. The white population, according to the census of March 31, 1880, was 61,022; the native population, 72,496. The Orange Republic has no debt, but possesses a considerable estate in lands, buildings, and accumulated funds. The imports in 1881 amounted to £2,583,738, the exports to £4,001,658. Wool is the chief product; the quantity exported in 1881 was 30,353,025 pounds.

Separation of Basutoland from Cape Colony.—The principal question of the year at the Cape of Good Hope was the rearrangement of the affairs of Basutoland. The Basutos are a tribe of the Bechuana race which inhabits the eastern part of the South African elevation. In the beginning of the century they possessed, besides the present Basutoland, a large part of what is now the Orange Free State. There Mosele, with his Matabele warriors, fell upon them and annihilated the whole tribe, except those who escaped to the inaccessible region in which the Orange river takes its rise. The Boers moved into the deserted plains in the third decade of the century, broke the power of the Matabeles, and formed a bulwark for the Basutos, behind which they grew again into a numerous people. They were reminded by the needs of their now redundant population that the Free State Boers were settled upon lands which had once been their own. The circumstance that no boundary had ever been agreed to between the Free State and Basutoland left the way open for disputes. The Basutos began an aggressive course, as usual, by cattle-stealing. The Boers retaliated, and a long border war followed, in which forays for the capture of cattle and the destruction of crops, rather than the taking of life, were the distinguishing feature. The Basutos, under the tuition of French missionaries, had made astonishing progress in civilization, and possessed in their chief, Moses, a leader of char-

acter and ability. When the war had lasted six years, and both sides suffered severely from the losses of property, a peace was concluded between Moses and the Free State in 1858. The cause of the war remained, and in 1865 the Basutos felt strong enough to attempt another incursion. The Boers mustered in force and, driving Moses and his people into the mountain stronghold of Thaba Bosigo, laid waste the whole country. Thousands of the Basutos perished of hunger. In April, 1866, Moses signed a new treaty of peace which transferred to the Boers a large section of Basutoland. The Basutos, however, remained on the ceded tract, on the pretext of gathering the harvest, until the Boers, perceiving that they intended to break their engagement, again took up arms in August, 1867, and would have totally annihilated the Basuto tribe if the Governor of Cape Colony had not interfered. The Boers were informed that the Basutos had been at their request received as British subjects, March 12, 1868. Baffled and indignant, they were obliged to accept the treaty of Aliwal, in February, 1869. This deprived them of the compensation for their losses and the fruit of their victories, but on the other hand took from the Basutos a strip of land of which they had been in undisputed possession prior to 1865.

As long as the Governor's agent was the only British authority in the newly annexed Basutoland, all went smoothly. When six magistrates were sent to supplement and restrain the authority of the six sub-chiefs, signs of dissatisfaction appeared. The discovery of diamonds in the northwest part of the Orange Free State in 1869, and the annexation of this district by Great Britain in November, 1871, gave another turn to the fortunes of the Basutos. High prices were paid in Kimberley for all the maize, oats, and barley they could raise, and the young men who went to work by thousands in the diamond-fields returned in a few months with breech-loading rifles and with money in their pockets. Reduced to a mere remnant, impoverished and degraded, the Basutos increased in numbers to nearly 130,000 in 1875, and in wealth in an astonishing progression, possessing in that year 35,000 horses, 217,000 head of cattle, 300,000 sheep, 215,000 goats, and paying as much as £16,500 in direct and indirect taxes.

By the action of the Cape Parliament in 1871, the annexation of Basutoland was approved; but upon the adoption of responsible government in the following year the question whether the colony should accept the incorporation or repudiate the act of the Governor and cut loose from Basutoland was reopened. The colonists were not inclined at first to refuse the responsibility, as the Basutos were not only increasing rapidly in wealth, but through the efforts of the French, and now of English missionaries, advanced rapidly in knowledge and refinement. In 1877 the war with the Gaikas and Gulaekas of British Kaffraria broke out. The circumstance that a large portion of the hostile Kaffirs were armed with rifles, opened the eyes of the British to the mistake of allowing the sale of fire-arms in Kimberley to colored persons. The Cape colonists, remembering that they were surrounded by unfriendly natives, and that the blacks outnumbered them two to one within their own borders, were carried away with the mingled feelings of panic and arrogance which any collision with the natives awakens in English settlers. The Cape Parliament passed a law which not only restricted the sale of arms to natives, but required a large portion of them to deliver up the rifles which they already possessed. Soon after the close of the Gaika war the Basutos were commanded to comply with the disarmament. To require these peaceable and faithful subjects to give up for a nominal compensation the arms which were their proudest possession, which they had earned with months of toil in the scorching sands of the diamond-diggings, and which they had official permits to purchase and keep, was to them both an injustice and an indignity. Some of them delivered up their fire-arms to the half-dozen officials, for which they were rewarded with the epithet of "loyal," but the great majority paid no attention to the proclamation, and were dubbed "rebels." Negotiations with the recalcitrant Basutos, in part carried on in person by the Prime Minister without result, made their refusal appear in a more serious light, so that the Cape Government felt driven to compel obedience by military force. The British Government had taken a stand against lending English troops to fight any more "little wars" for the colonists in South Africa. The Cape Colonists had an opportunity, therefore, of putting to the trial their new conscription laws. Every citizen between 20 and 45 years of age owes military service, those between 20 and 30 being subject to the first, and the rest to a second levy. The magistrates were directed to select the quotas by lot. The law was very loosely administered. Many of the substantial citizens were exempted on a specious excuse of corporal disability, and most of those who were drawn sent purchased substitutes. An army of from 8,000 to 10,000, lacking training and military experience, and without the first notion of discipline and obedience, was thus collected and sent into Basutoland. The rain fell incessantly in the summer season of 1880–'81, fuel was not obtainable, and, except raw meat, all food was very scarce. The Basutos harried them, but avoided a close engagement. Under the privations and the wearying guard duty the army began to melt away, whole companies deserting and returning to their homes without penalty or disgrace. Despairing of chastising the Basutos with such troops, the government, sustained by a growing sentiment in the country against the disarmament

act and the war, concluded a peace with the Basutos by which everything was left as it was before the war.

The triumphant Basutos felt a natural contempt for the poor-spirited or treacherous members of the tribe who had sided with the British. Toward the end of 1882 one of the rebel chiefs fell upon a loyal Basuto, took his cattle, and put to death his women and children. In this condition of affairs, the presence of British resident magistrates and police whose authority was despised was only a sign of impotence. The Parliament was summoned to an extraordinary session in January, 1883, for the consideration of a ministerial proposition to recall the resident authorities and leave the Basuto nation complete independence in the management of its internal affairs, reserving simply the control of its external politics, that is, its relations with the Orange Free State. With a slight modification the act was passed by a bare majority. The cost of the inglorious Basuto war of 1880–'81 was about £4,000,000. The sub-agents were not recalled. The policy of the Government was defined by the Premier, T. C. Scanlen, to be to build up a government by which the people would be able to manage their own affairs. He admitted that, if they failed in the new experiments, there was no course left but abandonment.

Mr. Scanlen had many conferences with the chiefs, ending with a *pitso* or assembly at Matsieng, on the 24th of April. Letsea and the friendly natives accepted the Government proposals, but Masupha and other malcontents angrily refused to accede to the new scheme of modified supervision. At a conference called by the agent of the Cape Government only about 2,000 persons were represented. Convinced that the Basutos desired to have no further connection with the colony, the Cape authorities concluded to terminate relations with them, and hand over the responsibility for the future management of the troublesome dependency to the British Government. As Cape Colony thus laid down the task of governing Basutoland, which had cost more than £3,000,000, and since the Basutos were not able to stand alone, the Imperial Government announced its willingness to take them again under its control and protection, as prior to 1869, on the conditions that the great majority of the Basutos desired it; that they and Cape Colony should bear the principal part of the expenses, and that the Orange Free State should co-operate in keeping order along its boundaries. The British Government did not propose to establish a costly administration of Europeans and govern Basutoland as a crown colony, but to guide and protect the natives in governing themselves in accordance with their own customs. Cape Colony undertakes to pay £20,000 a year toward the expenses of administration. The bill ratifying the arrangement passed the Cape Legislature in July, after a prolonged discussion. In order to be further relieved of its financial embarrassments, the Cape ministry would be glad to transfer to the crown the Transkei also, with its large population of Kaffirs.

Natal Legislation.—A change was made in the Constitution of Natal, approaching self-government. The number of members in the Legislative Council was increased from 20 to 30. The elected members bear nearly the same proportion to the nominated members as before, being 23 to 7, as against 15 to 5. The franchise, which was confined to holders of real estate of £50 value, or £10 rental, is liberalized, the limitations being a residence of three years and the possession of an income of £96 a year by male British subjects or naturalized aliens. From natives an educational test is required in addition.

Zululand.—Cetewayo was reinstated in his kingdom on Jan. 29th, in the presence of a concourse of Zulus, but he was only given a segment of the territory over which his rule formerly extended. The chief Usibepu was left in possession of the district allotted to him. It was left free to all the chiefs and people to return to their allegiance to Cetewayo, or to receive lands outside of his kingdom. For such a large section, called the Zulu Native Reserve, was set apart.

The restoration of a portion of his former dominions to Cetewayo turned out to be as great a blunder as the other acts of the British Government in connection with Zululand. Instead of leading to the tranquilization of the country—which the British by splitting it up into petty dominions under thirteen different chiefs, had involved in chronic guerilla warfare—the result was an internecine conflict between Cetewayo on the one part, and Usibepu, in league with all the adversaries of the restored monarch, on the other. Cetewayo was anxious to avoid fighting, but the English in Natal and his rivals in Zululand were determined to destroy, while his hot-headed partisans were not averse to the struggle.

Not many weeks after the return of Cetewayo the Usutu party, composed of the younger and more ardent partisans of Cetewayo, marched in a large body, mustering 80 companies, against Usibepu in the northeastern corner of Zululand, the chief who, under the Wolseley settlement, received the wives of the imprisoned king. Usibepu withdrew before the superior force into the bush in the heart of his country, where he prepared an ambush for the invaders. While he lay in waiting with 20 companies and his picked guard of five companies, called the Mauhlagazus, small bands flying before the Usutus led them on, flushed with victory and burning the abandoned kraals, into the ambuscade at Baugonono kraal. Usibepu fell upon the advancing column without warning. In accordance with Zulu tactics, he closed in on half of the army, and cut it to pieces. The remaining portion fled in a disorganized

rout, followed for a long distance by the Mauhlagazus. Cetewayo denied all knowledge and responsibility as to the ill-fated expedition, but he immediately began to drill soldiers for another conflict with Usibepu, until he had about six thousand. When he was moving forward with his force, Usibepu and Oham fell upon him with all their warriors and defeated him with great carnage.

After some preliminary fighting, in which Oham and his warriors were hard pressed by Cetewayo's bands, a decisive battle occurred on July 21st, in which the king's newly organized military force was crushed. Usibepu, with an army equipped with the aid of the people of Natal and partly led by white men, descended upon Ulundi, Cetewayo's capital. The king's army was cut to pieces, all his possessions captured, his town destroyed, and he himself severely wounded. He was carried away into concealment by his people, and was long supposed to have been killed. Umnyamana and the Usutus kept up the struggle until they were reduced by Usibepu and acknowledged his supremacy. Cetewayo kept out of the way of his enemies, and entered into communications with the British relative to surrendering himself into their protection. Finally, when assured of the safety of such a course, he delivered himself up and was taken to Natal in October.

Border War in Bechuanaland.—The Transvaal Boers have severely tried the Liberal Government, which rendered back to them their independence, by continuing their encroachments in Bechuanaland and assisting the chiefs who were friendly to them to drive the allies of the British off their lands. The troubles in Bechuanaland,* which lies on the west and southwest of the Transvaal, date back to 1872–'73. After the discovery of diamonds in 1871, Great Britain, which had recognized the independence of the two Boer republics in 1852 and 1854, and by the Sand River Convention had bound itself never to encroach north of the Vaal river, broke the treaties by annexing the diamond-fields, and began its interference in the affairs of Bechuanaland. The Bechuana nation was divided into two parties, one headed by the chiefs Montsiva and Mankoroane and the other by Moshette and Massouw. Mankoroane, chief of the Batlapins, and Massouw, chief of the Korannas, laid claim to the same territory, while Montsiva disputed with Massouw the position of paramount chief of the Baralongs. The South African Republic recognized the claims of Moshette and Massouw, and by virtue of having subdued Moselekatsie, the Matabele conqueror of the country, and of a cession executed by the chief of the Korannas, the most ancient inhabitants, took the country under its protection by annexing it to the Transvaal state. The British Government, by the Keate award, refused to recognize the annexation, gave a portion of the country to Mankoroane, and acknowledged Montsiva as paramount chief of the Baralongs. This award, if not made in the interest of white land-speculators, had the effect of delivering the country over to their machinations and prolonging the tribal disputes. Bechuanaland was to have been reunited with the Transvaal upon its annexation, through Sir Theophilus Shepstone, to British South Africa.

In the Transvaal war which resulted from this act, Montsiva and Mankoroane sided with the British and aided them by furnishing shelter and supplies, although the direct military assistance of the blacks was refused by the English. Moshette and Massouw sympathized with the Boers. In the convention of 1881, by which the British under the auspices of the Liberal party withdrew from the Transvaal, a new boundary-line was drawn. This line cut off a large portion of the annexed territory from the Transvaal and even separated from the Boer state a number of farms and settlements belonging to its citizens. It was objected to and declared impracticable at the time of signing the convention, and has been the subject of frequent reclamations since. The British Government paid no attention to these diplomatic representations. Bechuanaland was at once plunged into warfare and anarchy by the boundary settlement insisted upon by the British Government for the sake of their native allies and the white abettors and advisers of the latter. Montsiva ordered Moshette and Massouw to vacate their lands and find homes within the new boundary-line of the Transvaal. In league with Mankoroane he made war upon them in May, 1881, to compel them to give up the disputed territory. The white volunteers and speculative fomenters of the war who were engaged on both sides were to be paid in farms in the rich pasture-lands of the disputed territory. There was a brief cessation of hostilities; but when the war broke out again in October of that year the Boer filibusters or volunteers took an important part in the operations on the side of chiefs who were in possession.

The Boer Government agreed to place a guard on the frontier, to prevent Boer volunteers from crossing, but their efforts to preserve neutrality lacked earnestness or efficiency. Montsiva and Mankoroane were defeated and forced to sign a treaty, in 1882, which

* The Bechuanas are the negroes among whom Moffat and Livingstone labored. They are akin to the Basutos in race, and are more intelligent and far more advanced in civilization than the other Kaffir races. They have schools and churches, are clothed, and many of them are to some extent educated. They have separate property in land, and had made considerable progress in industry and agriculture before the Trek Boers arrived in the country north of the Vaal. The chiefs, unless they led the people in the arts of peace, lost their power and influence. Many of them, including all of the four leaders in this intestine conflict which was provoked by white adventurers, have at various times requested the British Government to take their country under its protection. Nearly all of the internal quarrels of the Bechuanas are over disputed claims to chieftainship. They are not of a predatory disposition like the Kaffirs in the east, and have never committed cattle-raids in the Transvaal.

placed their territory under the protection of the Transvaal, and granted lands to Boers who had taken part in the war. This treaty lacks the ratification of the suzerain power. The frontier war did not cease. English filibusters rushed in, on the pretext of supporting the cause of the worsted party. The white participants increased, until Bechuanaland was occupied by adventurers from the Transvaal, the Orange Free State, and the English colonies. The cattle and the lands adjacent to the streams were taken away from the natives belonging to the defeated party. Many of the Bechuanas were reduced to starvation. The Transvaal Government excused the aggressions of the Dutch on the ground that the boundary-line fixed by the Pretoria convention was unfair and injurious to the Boers. When Mr. Fox, their Secretary of State, was called to account for signing a treaty, he replied that his action was not in violation of the convention, but was the consequence of a defect in the convention.

In February, 1883, Lord Derby, British Colonial Secretary, proposed that the Cape Government should organize a police to prevent the incursion of British subjects into Bechuana-land. Sir Hercules Robinson replied that the only remedy would be to send a military force to occupy the country and clear it of white filibusters. The lands which were seized by the Boers, and from which Mankoroane and Montsiva and their people were expelled, were those which they had formerly held, but of which the Pretoria convention had deprived them. The pretended volunteers of Moshette and Massouw who retook the lands by force, had the approval of the Transvaal Government and people, and the sympathy of all the Dutch in South Africa. When Sir Hercules Robinson proposed that the disturbed district should be guarded by a mounted police, the expense of which should be divided between the British Government, the Cape of Good Hope, the Orange Free State, and the Transvaal Republic, the Cape Government were unwilling, the Orange Free State declined on the ground that its Constitution forbade such a use of its forces, and Triumvir Kruger answered for the Transvaal that his colleagues were absent, at the same time expressing his surprise that a remedy should be proposed that was worse than the disease, and saying that the cause of the difficulty is the boundary-line fixed by the convention. A commission constituted by the Volksraad, the 3d of June, 1882, to put an end to the controversy, was instructed to regard the boundary as established in the disallowed treaties with Moshette and Montsiva.

Mankoroane, no longer lord of his territory, which was in part apportioned out among the white volunteers, made a formal appeal to the British Government to annex his country. On the confines of the Transvaal the marauders, Dutchmen from all parts of South Africa, and English adventurers, many of them deserters from the British army, had set up an independent republic, under the name of Stellaland, and elected a president of their own. This community of outlaws numbered about 2,000 souls.

CARLISLE, John Griffin, an American statesman, born in Campbell co., Ky., Sept. 5, 1835.

JOHN GRIFFIN CARLISLE.

He received a common-school education, and became a teacher. Afterward he studied law, and in 1858 was admitted to the Kentucky bar, where he gradually built up an extensive and lucrative practice. He was elected to the lower house of the Legislature in 1859, and to the State Senate in 1866 and 1869. He was a delegate to the National Democratic Convention held in New York in 1868, he was Lieutenant-Governor of Kentucky from 1871 to 1875, and in 1876 was a presidential elector. He was elected to Congress the same year, taking his seat in March, 1877, and has been a member ever since. He soon became prominent as

a Democratic leader, especially as a member of the Committee of Ways and Means, and attracted attention by an able speech on revenue reform. This and the revival of American shipping he looks upon as the important questions now before the country. In the speech referred to he said: "In the broad and sweeping sense which the use of the term generally implies, I am not a free-trader. Of course, that is understood. At least it should be. I will add that in my judgment it will be years yet before anything in the nature of free trade would be wise or practicable for the United States. When we speak of this subject we refer to approximate free trade, which has no idea of crippling the growth of home industries, but simply of scaling down the iniquities of the tariff schedule, where they are utterly out of proportion to the demands of that growth. After we have calmly stood by and allowed monopolies to grow fat, we should not be asked to make them bloated. Our enormous surplus revenues are illogical and oppressive. It is entirely undemocratic to continue these burdens on the people for years and years after the requirements of protection have been met and the representatives of these industries have become incrusted with wealth. This is the general proposition on which I stand." On the organization of Congress in December, 1883, Mr. Carlisle received the Democratic nomination for Speaker of the House of Representatives, and was elected.

CARPETS. Progress of the Industry.—No better carpets are made in America now than were made twenty years ago. Indeed, as early as 1851 an American inventor—the late Erastus B. Bigelow, of Massachusetts—showed English weavers (who were then making more and better carpets for general use than any other people) that success in weaving body-Brussels carpets by power had been fully achieved in America.

Specimens of Bigelow Brussels carpets were exhibited at the Great Exhibition in London in 1851, but not till after the prizes had been awarded. In a supplement to their report the jury said: "The specimens of Brussels carpeting exhibited by Mr. E. B. Bigelow are woven by a power-loom invented and patented by him, and are better and more perfectly woven than any hand-loom goods that have come under the notice of the jury. This, however, is a very small part of their merit, or rather that of Mr. Bigelow, who has completely triumphed over the numerous obstacles that presented themselves, and succeeded in substituting steam-power for manual labor in the manufacture of five-frame Brussels carpets. Several patents have been taken out by different inventors in this country for effecting the same object; but as yet none of them have been brought into successful operation; and the honor of the achievement, one of great practical difficulty as well as of great commercial value, must be awarded to a native of the United States."

The Centennial Exhibition.—The American Centennial Exhibition gave a great and lasting impetus to carpet manufacture; the exhibit of foreign carpets stimulating our manufacturers, color artists, and weavers to an emulation which, in the brief period since elapsed, has transformed a struggling industry into one of the most stately proportions. This expansion has been evidenced in Philadelphia especially by the remodeling of old and the erection of new factories, the undertaking of hitherto rare and costly fabrics, and the substitution on an extensive scale of power for hand looms.

Looms.—English manufacturers adopted the Bigelow patents, and till within a recent period continued furnishing us with body-Brussels carpets for which we had first provided them a power-loom. At home, meanwhile, the Bigelow Carpet Company held fast to their discovery, and remained, until the lapse of their patent-rights, the principal power-loom body-Brussels weavers in the United States.

It is safe, too, to assert that all looms now employed in England and the United States in the weaving of body-Brussels, Wiltons, and tapestry-Brussels carpets may be traced, in the principles of their construction, to the original Bigelow loom. This is largely true, too, of ingrain-weaving. Mr. Bigelow invented a loom for ingrains, which produces a fabric of great excellence, and is now in general use in the older New England factories. Besides the Bigelow Company, two manufacturing firms, E. S. Higgins & Co., of New York city, and John and James Dobson, of Philadelphia, are entitled to the distinction of first undertaking on a large scale the production of high-grade power-woven carpets in America. Indeed, E. B. Bigelow's patent for weaving body-Brussels and tapestry carpets was first employed by E. S. Higgins & Co. on tapestries only, and subsequently the present Bigelow Company applied the invention to Brussels and Wilton fabrics. In Philadelphia, no carpets other than common ingrains were made prior to 1872.

Since Mr. Bigelow's time but one ingrain-loom has been invented in the United States which has proved wholly free from objection, and been regularly adopted. This is known as the "Murkland loom," the invention of William Murkland, of Massachusetts, who died a few years since. The Murkland loom is noted for its fine shading qualities, for its great productiveness, ease of manipulation, and general adaptation to ingrain-weaving, to which it is confined. It is now used almost wholly by new manufacturers.

Equally ingenious, though less adapted to general use, was the Duckworth ingrain-loom, produced under the patronage of Messrs. E. S. Higgins & Co., by John C. Duckworth, a young inventor who died in 1882.

A signal triumph, and by far the most important, lately achieved in America in mechanism for high-grade carpet-weaving, was the loom

for moquette carpets, invented and patented by Halcyon Skinner, of the Alexander Smith & Sons Carpet Company, at Yonkers, N. Y. A loom capable of such results as the Skinner loom produces, emphasizes strongly our singular success in first furnishing power-looms to makers of fine carpets in other lands.

New Fabrics.—Since the Centennial Exhibition three important additions have been made to our carpets. These are the moquette, chenille-Axminster, and Smyrna fabrics.

Moquette is made by power, the two latter by hand, only. Moquette ranks among the best and most luxurious of pile-fabrics, being singularly receptive to colors, and capable of the most subtile and pleasing color treatment. Upon its introduction, the mystery and glamour which had long attached to the finer carpets manufactured abroad quite vanished.

Chenille-Axminster, long known in England, is made in Philadelphia, but only on the most limited scale. It ranks second to none in many elegant essentials, but can not take its proper rank until made by power. A loom for this purpose has recently been perfected by an English firm.

Smyrna, a very thick, reversible chenille fabric, resembling in texture certain Turkish carpetings shown at the Centennial Exhibition, was easily reproduced here, and has rapidly found favor with American dealers and consumers. It is made almost wholly in Philadelphia, and, though made in lengths for sale by the yard, it is most used in rugs. The Government departments at Washington have adopted this new and useful covering.

Statistics.—Carpet-weaving in America has so advanced within the past few years as to render the exhibit of the census of 1880 wholly insufficient as a basis upon which to estimate the present magnitude of the industry. During the past four years, in Philadelphia alone, numerous extensive carpet-factories, many of them of imposing proportions, have been erected and put in motion, while in New England the Lowell, Hartford, Bigelow, Roxbury, and Worcester companies, the Sanford Mills at Amsterdam, N. Y., and the Alexander Smith & Sons Carpet Company, at Yonkers, have each added very materially to their structures and manufacturing facilities. Vastly more of capital and labor are now employed in varieties of fabric, richness and excellence of texture, and consequent increased value of annual product, than at any period of our history. With this caution, we append for comparison the census statistics of the United States relating to carpets for 1870 and 1880:

CARPET MANUFACTURES (OTHER THAN RAG) OF THE UNITED STATES.

	Factories.		Hands employed.		Capital.		Value of product.	
	1870.	1880.	1870.	1880.	1870.	1880.	1870.	1880.
Connecticut	3	2	1,188	1,654	$1,530,000	$3,085,000	.....	$1,200
Maine	..	1	....	....	.....	.....	.....	.....
Maryland	1	1	12	75	10,000	10,000	$14,000	50,000
Massachusetts	6	7	2,200	3,908	3,250,000	4,637,646	4,487,525	6,887,629
New Hampshire	3	..	170	....	310,000	.....	299,750	.....
New Jersey	2	2	147	248	155,000	108,000	193,656	179,500
New York	13	10	3,424	5,622	4,251,750	6,422,158	4,976,835	8,419,254
Pennsylvania	184	237	4,941	11,043	3,026,500	13,400,000	9,758,171	20,300,445
Other States	3	..	19	....	2,500	.....	4,550	.....
Totals	215	260	12,098	22,545	$12,540,750	$27,657,804	$21,761,578	$37,788,587

Imports.—Government statistics for twelve years past show a steady decrease in the imports of carpets. The following table is from official sources:

IMPORTATION OF CARPETS INTO THE UNITED STATES, 1872 TO 1883 INCLUSIVE.

FISCAL YEARS ENDING JUNE 30.	Square yards.	Value.
1872	5,072,247	$5,797,163
1873	3,915,997	4,388,257
1874	3,122,503	3,649,503
1875	2,314,783	2,643,932
1876	1,118,736	1,521,692
1877	533,589	674,011
1878	278,262	398,389
1879	257,686	367,105
1880	1,443,585	1,237,431
1881	991,947	1,064,076
1882	715,583	949,670
1883	834,989	1,058,912

The increase in the import values of 1880, 1881, 1882, and 1883 is attributable mainly to the sudden demand (begun about 1880) for Oriental rugs and carpet "squares," the "antiques" of which have been eagerly sought for and at prices generally greatly in excess of their intrinsic worth. Present imports are largely composed of these Eastern rugs, the makers of which are striving very particularly to retain America as a permanent market.

Exports.—Excepting desultory shipments to Mexico and South America, the exports of carpets from the United States are as yet small. The two countries named increase their demand each year. In South America our floor oil-cloths are highly esteemed, and the trade with Philadelphia is growing.

Tariff.—The United States tariff act of 1882 reduced considerably the duties formerly imposed on foreign carpets, and has resulted in the formation of a national association of manufacturers, whose object is to deter further legislation of the kind and to look generally to the conservation of the industry. Since the passage of the act referred to, certain English carpets, which had wholly disappeared from

our markets, have again been offered and sold here, but at prices not below those asked for similar goods of American origin.

Location of Factories.—The late A. T. Stewart lived to see the decadence of the trade in foreign carpets (first largely undertaken by him in New York), and, determining on manufacture, built, just prior to his death in 1876, an extensive carpet-factory at Groversville, Dutchess co., N. Y. The first roll of carpet from his looms was finished about the day of his death. The Glenham Carpet-Mills, such being their name, now have a capacity for operating 200 power-looms, and for producing annually 2,000,000 yards. Body-Brussels, Wilton, tapestry-velvet, and tapestry-Brussels carpets, also rugs and mats of the same fabrics, besides ingrain carpets, are produced by the Stewart Mills.

It is noteworthy that while New York city distributes through its jobbing houses the greater percentage of the carpets made in the United States, yet only one carpet-factory of importance—that of E. S. Higgins & Co.—exists in the city proper. This was among the first important factories established in the United States, and has expanded into enormous proportions, covering now several acres of ground, and giving daily employment to more than two thousand persons.

The particular locations of factories comprised in the preceding statistics, also the several carpet fabrics made at each point in the several States, are substantially as follow:

LOCATION.	No. of factories.	Fabrics produced.
Philadelphia, Pa....	237	Body-Brussels, Wilton, tapestry-Brussels, ingrain, and Venetian.
Baltimore, Md.....	2	Ingrain wool carpets and jute mattings.
Little Falls, N. J...	1	Tapestry-velvet, Wilton, and Smyrna.
Paterson, N. J.....	1	Jute carpets and mattings.
New York, N. Y...	1	Body-Brussels, tapestry-Brussels, Wilton, and ingrain.
Brooklyn, N. Y....	1	Jute carpets and mattings.
Yonkers, N. Y.....	1	Moquette and tapestry-Brussels, and rugs of same.
Poughkeepsie, N.Y.	1	Ingrains.
Rifton Glen, N. Y..	1	Ingrains.
Amsterdam, N. Y..	2	Tapestry-Brussels (extensively), tapestry-ingrain, body-Brussels.
Auburn, N. Y.....	2	Ingrains.
Bridgeport, Conn...	1	Ingrains.
Hartford, Conn.....	1	Body-Brussels, Wilton, and moquette.
Roxbury, Mass.....	1	Tapestry-velvet and tapestry-Brussels.
Clinton, Mass.....	1	Body-Brussels and Wiltons.
Medford, Mass.....	1	Tapestry-Brussels.
Palmer, Mass.....	1	Body-Brussels and Wiltons.
Lowell, Mass.....	1	Body-Brussels, Wiltons, and ingrains.
Lowell, Mass.....	1	Ingrains only.
Worcester, Mass...	2	Body-Brussels and Wiltons.

New York city has now one factory making jute carpets.

Advance in carpet-weaving since 1870, at points other than Philadelphia, has been shown more by enlargement of the old factories and the making of new fabrics than by the starting of absolutely new industries. In Philadelphia, not only have these improvements been observed to a most remarkable degree, but new factories, considerably more than the last statistics disclose, and of a most important kind, have been added to the old. The factories, too, reckoned as such in the census of 1870 were, in reality, many of them petty ingrain mills, employing rude hand-looms and producing a low grade of goods. These have largely been transformed into dignified industries, power being used instead of hand-weaving, and better goods produced. In Philadelphia, twelve years ago, only ingrain carpets were made; now there is no fabric known to the art, save the one of moquette and the productions of the East, which does not leave Philadelphia looms.

The annexed table shows the comparative state of the industry in Philadelphia in the two years, 1870 and 1882, according to the United States census and the city census respectively:

COMPARISON OF RETURNS OF CARPET MANUFACTURES IN PENNSYLVANIA (BEING PHILADELPHIA).

	1870.	1882.
Establishments.....	184	237
Number of persons employed....	4,941	11,048
Capital.....	$3,169,500	$13,400,000
Wages.....	1,910,963	4,085,920
Product.....	9,788,787	20,300,445

Rugs.—Notwithstanding the positive revival apparent in the use of rugs, both as accompaniments and as substitutes for carpets, the number of American manufacturers who seriously undertake the production of fine rugs has been surprisingly small. The Glenham Mills (A. T. Stewart's) were, probably, the first regularly to manufacture Wilton, body-Brussels, tapestry-velvet, and tapestry-Brussels rugs, and these to some extent are still continued by them. The Alexander Smith & Sons Carpet Company make successfully moquette and tapestry-Brussels rugs, and this concern and the Glenham Mills are the only houses in America making in variety high-grade, power-loom rugs. Kitchenman & Neall and A. Cameron, of Philadelphia, weave chenille-Axminster rugs of superior fineness by hand.

Carpet-Wools.—Numerous experiments have proved that wools best adapted to carpets can not be profitably produced, if produced at all, in the United States. The grades most employed are from wild and sterile regions in Russia, Turkey, and Asia, where carpet-sheep and shepherd exist in the most primitive manner. Colorado and Texas yield certain wools which find a limited market in our carpet-mills; but as yet we are mainly dependent upon the sources just named. Strong efforts have been made to influence the remission by Congress of the duties imposed upon foreign carpet-wools, and this, if accomplished, would somewhat cheapen our carpet-product, and would also enable us, it is contended, to compete more suc-

cessfully with foreign companies in an export trade.

Rag and List Carpets.—These, the first floor-coverings made in America, have by no means disappeared. The German settlements of Pennsylvania excel in them, and produce rag carpets the texture and colorings of which show of late years a very decided advance.

Wages.—Carpet-weavers, as a rule, earn good wages, and live in as much comfort as journeymen in any other industry. The factory region of Philadelphia is well provided with comfortable brick dwellings, which rent at reasonable figures, and like satisfactory conditions exist around the mills of New England and New York. Practiced weavers earn fifteen to twenty dollars a week. A large percentage of the weavers are of English, Scotch, and north of Ireland origin or descent, and some of the most conspicuous successes in Philadelphia have been by foreigners, who started there as humble toilers on rude hand looms. Not a few such are to-day the owners of factories of great magnitude.

Noteworthy Events.—Certain important changes which have happened within a brief period can best be illustrated by reference to particular industries: The Alexander Smith & Sons Carpet Company, at Yonkers, from being formerly ingrain-makers only, will, during 1884, have 350 looms engaged on tapestry-Brussels, and 218 looms on moquette carpet; the whole having a total daily capacity of 27,500 yards; 500 hands will also be added, in 1884, to their working-force, making the total of persons employed 3,000. Horner Brothers, of Philadelphia, who in 1876 began on Brussels with six looms, have but just finished a factory of vast proportions, and are now among the largest Brussels producers in the world. They have undertaken, also, the weaving of tapestry-Brussels. John Bromley & Sons, noted ingrain-weavers, of Philadelphia, have of late discontinued all but the Brussels manufacture, and have an extensive factory whose foundation was laid in the humblest way. John & James Dobson, at the Falls of the Schuylkill, have now body-Brussels, Wiltons, velvets, and tapestries on their lines, and conduct an industry famous here and abroad for its magnitude and the variety of its products. McCallum, Crease, & Sloan, of Philadelphia, one of the oldest and most successful firms making ingrains only, now weave Brussels and Wilton carpets of the highest standard, and are just completing an extensive factory. Ivins, Dietz, & Magee, Philadelphia, have completed and entered a stately Brussels and ingrain mill, and will reintroduce a costly fabric once made by them, known as tapestry-ingrain. The Lowell Manufacturing Company, at Lowell, Mass., have of late doubled the number of their Brussels-looms, enlarged their mill, and placed themselves in the front rank on this fabric. The Hartford Carpet Company, in addition to Brussels and ingrains, has begun the manufacture of moquette, and alone shares the honor with the Smith Company, at Yonkers, of making this fabric in the United States. Hon. Stephen Sanford (Amsterdam, N. Y.) has reared an industry of great extent, employing 200 looms on tapestry carpets.

These facts indicate, not the movements merely of individuals and firms, but are cited rather to show recent enterprise in directions limited a few years since to the efforts of perhaps a half-dozen firms. The achievements of numerous others, though hardly less signal, must of necessity be omitted here.

Cocoa-Matting.—Floor-matting and foot-mats made in East India from the cocoa-fiber, and formerly imported fully manufactured from that country, are now woven equally well in America, and factories are successfully employed on these goods in Brooklyn, N. Y., Philadelphia, and Chester, Pa. Cocoa-fiber is admitted into the United States free of duty, and the fabrics made from it are found preferable to those produced in India.

Floor Oil-Cloths.—The consumption of floor oil-cloths, which diminished considerably with the cheapening of carpets, has revived very greatly, especially in the South and West, and the annual yield of the medium class of goods is greater by far than at any former period. The floor-cloth industries of the several States are as follow: Maine, 3; Massachusetts, 2; New York, 6; New Jersey, 4; Pennsylvania, 3; total in the United States, 18. There is also on Long Island, N. Y., a factory engaged in making linoleum, a cork floor-cloth, used for like purposes as the ordinary floor oil-cloth.

The jute fabrics, or "foundations," used in the manufacture of floor oil-cloths, are imported mainly from Scotland. The Dolphin Company's jute-mill, at Paterson, N. J., and that of the Planet Mills, in Brooklyn, N. Y., have each successfully made the canvas on which the wide cloths, 18 to 24 feet in width, are prepared. The Chelsea Jute Works, of New York city, for the first time in America, are now about producing power-woven, narrow-width jute canvas or burlap. (See JUTE.)

Fewer factories are engaged in making sheet oil-cloths—goods 12 to 24 feet wide—than existed ten years ago, and the production consequently has been very much lessened. Out of the oil-cloth factories enumerated, three only give particular attention to the sheet-widths. Narrow-width oil-cloths, 3 to 7½ feet wide, on the contrary, are made in vastly larger quantities than ever before, their low price and useful qualities rendering them exceedingly popular. A machine for printing the colors, of recent invention, has been adopted by one or two firms, which secures a more rapid production than by the block or hand method of printing.

CENTRAL AMERICA. The following five independent republics constitute the Spanish-speaking portion of Central America:

STATES.	Area in square kilometres.	Population.	Per kilometre.	Active army.	Militia.	Capitals.	Population.
Guatemala	121,140	1,252,497	10	2,180	33,229	Guatemala	58,456
Salvador	18,720	554,785	30	1,400	18,500	San Salvador	14,059
Nicaragua	133,800	275,815	2	708	9,600	Managua	9,000
Honduras	120,480	350,000	3	843	31,500	Tegucigalpa	12,000
Costa Rica	51,760	185,000	4	500	All men between 18 and 55.	San José	12,000
Total	445,900	2,618,100					

There was a plan on foot in 1883 to reunite the five republics in one confederacy, to be called the United States of Central America. This scheme was started in Guatemala, which, under President Don Rufino Barrios, has a tendency to exercise a sort of hegemony over the remaining states, and the idea probably originated in the mind of Gen. Barrios himself, who has an ambition to be elected President of the Union, should the project meet with the assent of the people at large. For the present the plan has failed, owing, as was supposed, to the avowed or secret jealousy and intrigues of Don M. A. Soto, ex-President of Honduras, while he was the executive of that republic. Don M. A. Soto, however, left his country, and retired into voluntary exile in the summer of 1883, residing in San Francisco, California, where he published some letters provoking replies from Gen. Barrios. Finally, he resigned his office. The alleged main obstacle to the projected union thus seems to have disappeared. (See articles on the several republics.)

CEREBRAL LOCALIZATION. The whole tendency of recent anatomical study has been toward greater accuracy in minute details. Such knowledge as was to be gained by the scalpel and forceps in the way of dissection has long since been acquired. The microscope still remains, however, and much is to be learned of the minute anatomy and functions of parts the gross appearances and relations of which have long been understood.

The theory of "cerebral localization," briefly stated, is this: The brain is not a homogeneous organ, but a mass composed of a certain number of diverse organs, to each of which belong certain definite physiological properties and functions. The object of recent study has been to locate these different functions each in its own portion of the nerve-substance of the brain. In a crude way, the general fact of a certain amount of cerebral localization has long been admitted. For example, the sense of sight has been located in a certain portion of the cerebrum, as has the sense of smell in another. The gray matter of the cerebral hemispheres was supposed to be especially associated with mental power, and the amount of the former to be an index of the amount of the latter. The nerve-fibers of the medullary portion and the large ganglia at the base of the brain were supposed to be especially connected with the act of locomotion. Further than this, paralysis limited to the leg had been connected with disease of one of the large ganglia (the corpus striatum) and the adjacent medullary fibers at the anterior portion of the organ; while paralysis limited to the arm had been similarly associated with disease of another ganglion (the optic thalamus), and the surrounding medullary fibers at the posterior part of the brain. It was known that, when the arm and leg were both affected, the disease would probably be found in the base of the brain, rather anteriorly if the leg were chiefly affected, and posteriorly if the paralysis were greater in the arm. The respective functions of the anterior and posterior tracts of the spinal cord were also known, and the cerebellum or smaller brain, to which the posterior or sensory tracts of the cord were traced, was held to be on this account the especial seat of sensation. In 1863 a still further advance was made in locating the cerebral center of articulate speech. The disease known as aphasia consists either in a loss of the memory of words, so that the sufferer is unable either to speak or write the particular word he wishes to use, or else in a loss of the power to articulate a particular word or words, though the sufferer remembers them perfectly, and can write them correctly. In either of these cases it is evident that the diseased point in the brain must be either at the center controlling the muscles of articulation, or in the center of articulate speech itself. Careful examinations of the brains of such patients resulted in locating the lesion at a certain point in the anterior or middle portion of the frontal lobe of the left side, known as the "island of Reil," and supplied with blood by the left middle cerebral artery. It was at first supposed to follow necessarily from these investigations that the function of speech was confined to the left side of the brain; that as speech is learned by use, in most persons only one side of the brain had been educated for that purpose; and that as a person is right-handed as respects movements, he is left-handed as respects the faculty of speech. More thorough study has weakened the supposed force of the first discoveries, and although it still seems to be a fact that in most cases the center of speech is in the left anterior portion of the brain, there have been several reported cases of aphasia in which the lesion was plainly at the corresponding point on the opposite side.

These and a few other similar conclusions constituted about all that was definitely known as to the functions of the different parts of the brain till within the past few years. The field of study has always been attractive, both for

the anatomist and the physiologist, and their labors have been well repaid. The following account of the experiments of Dr. R. W. Amidon, of New York, may be of interest. They were based upon the following propositions: 1. Marked local variations in the temperature of the cephalic contents may be demonstrated by the use of specially constructed surface-thermometers. 2. Cerebral cortical localization is now sufficiently far advanced to warrant the assertion that the psycho-motor centers for one half of the body occupy a certain area in the cerebral cortex of the opposite hemisphere. 3. Functional activity of an organ implies increased blood-supply and tissue-change, and consequent elevation of the temperature of that organ. 4. Willed contraction of muscles presupposes an increased activity of the volitional motor-center of those muscles in the cerebral cortex. From this it was natural to make the deduction that voluntary activity in a peripheral part would cause a rise of temperature in the psycho-motor center for that part, which might be indicated by thermometers applied to the skull over such center. Numbers of self-registering surface-thermometers were applied to the surface of the skull to be tested, by passing them through holes in rubber straps secured to the head by buckles. The desirable points in the subject to be experimented upon are, a well-shaped head, thin hair, well-developed and trained muscles, power of facial expression, especially of unilateral facial movements, and the ability to contract individual muscles, and moderate intelligence. A man is preferable to a woman, and a European to an African.

The arrangements being completed, the subject of the experiments is made to exercise repeatedly a certain muscle or set of muscles; for example, to move repeatedly the right arm. The thermometer which registers an increase of temperature as a result of the movements is supposed to be placed over the part of the brain controlling such movements, and in this way the cerebral center for movement of the arm is localized.

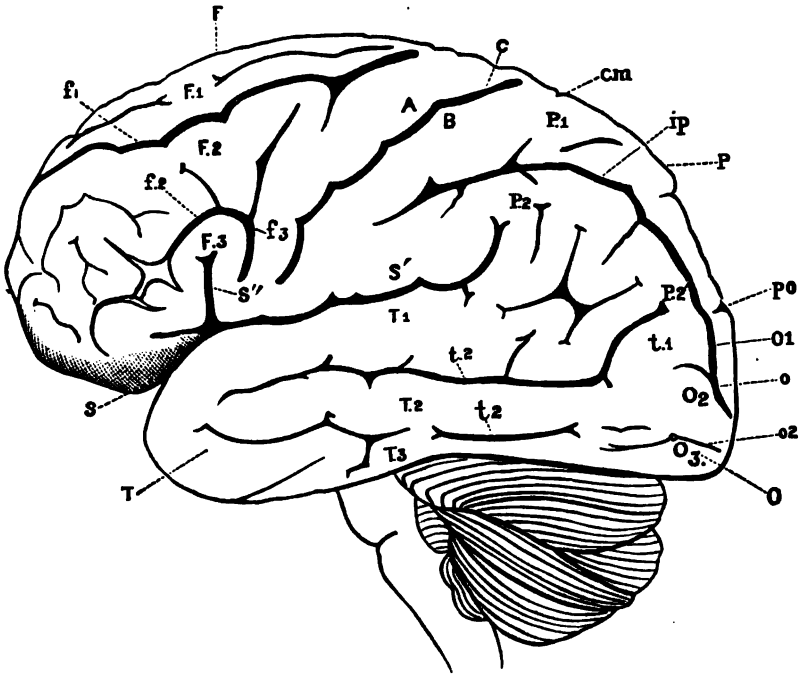


FIG. 1.—LATERAL VIEW OF THE HUMAN BRAIN, SHOWING ITS LOBES AND FISSURES. (After Ferrier.)

F, frontal lobe: P, parietal lobe; O, occipital lobe; T, temporo-sphenoidal lobe; S, fissure of Sylvius; S', horizontal portion; S'', ascending portion of the same; c, sulcus centralis, or fissure of Rolando; A, anterior central convolution, or ascending frontal; B, posterior central convolution, or ascending parietal; F_1, superior; F_2, middle; F_3, inferior frontal convolution; f_1, superior; f_2, inferior frontal sulcus; f_3, sulcus præcentralis; P_1, superior parietal lobule, or postero-parietal lobule: P_2, inferior parietal lobule, viz.: P_2, gyrus supra-marginalis; P_2', gyrus angularis; p, sulcus intra-parietalis; c, m, termination of the calloso-marginal fissure; O_1 first, O_2 second, O_3 third occipital convolutions; po, parieto-occipital fissure; o, sulcus occipitalis transversus; o_2, sulcus occipitalis longitudinalis inferior; T_1 first, T_2 second, T_3 third temporo-sphenoidal convolutions; t_1 first, t_2 second temporo-sphenoidal fissures.

This is but one of the many means of investigation which have been employed in the study of this question. A study of Fig. 1 will show the normal arrangement of a human brain as seen from the side; and Fig. 2 shows what has been accomplished in the way of localization as regards the surface of the organ—what is known in anatomy as the gray matter of the cerebral convolutions, or of the cortex. These

results, as concisely stated by Ranney, may be briefly summarized as follows:

1. The cortex is capable of artificial stimulation, and the functions of certain areas may thus be accurately determined. 2. A well-defined relation exists between the cortex and certain muscular groups. 3. The excitable region of the cortex, where motor effects are chiefly produced, may be said to be localized in the following parts, some of which may be seen by reference to the figure: The center for movements of the lips and tongue lies at the base of the third frontal convolution, near the fissure of Silvius (9 and 10 on figure). On the first and second frontal convolutions there is a center (12) for lateral movements of the head, for elevation of the eyelids, and for dilatation of the pupil. The ascending frontal convolution presents, from below upward, the following centers: for elevation and depression of the corners of the mouth (8 and 7); for movements of the forearm and hands (6); for extension and forward movement of the arm and hand (5); centers for complex movements of the arms and legs when acting together (2, 3, 4). The ascending parietal convolution presents, from above downward, four centers for complex movements of the hand and wrist (*a*, *b*, *c*, *d*), such as the use of individual fingers, etc. The superior parietal convolution presents the center which presides over the movements of the leg and foot, as in the act of walking. The sensory region of the cortex is confined to the parietal, temporal, and occipital lobes of the cerebrum. In it certain centers have been definitely located by Ferrier which are not as yet accepted as fully proved.

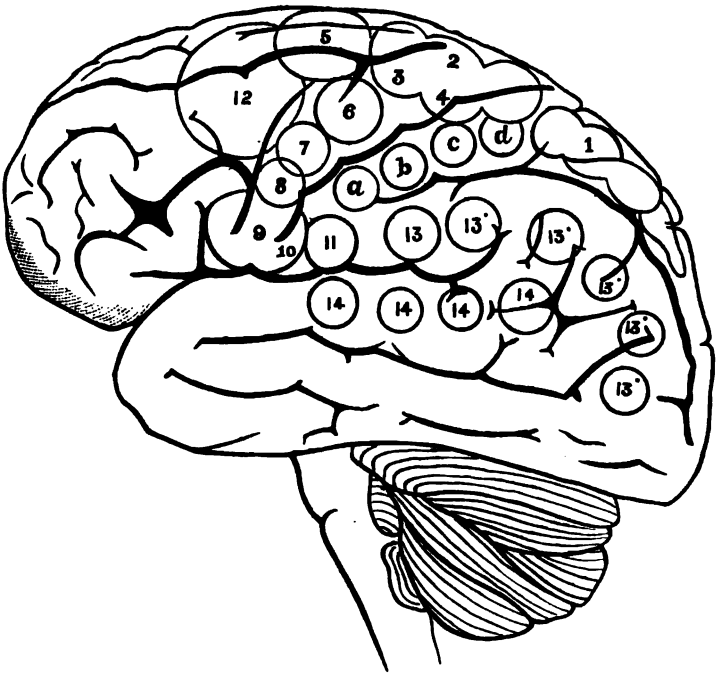


FIG. 2.—SAME VIEW OF THE HUMAN BRAIN, SHOWING THE AREAS OF THE CEREBRAL CONVOLUTIONS. (After Ferrier.)

1 (on the postero-parietal [superior parietal] lobule), advance of the opposite hind-limb as in walking; 2, 3, 4 (around the upper extremity of the fissure of Rolando), complex movements of the opposite leg and arm, and of the trunk, as in swimming; *a*, *b*, *c*, *d* (on the postero-parietal [posterior central]-convolution), individual and combined movements of the fingers and wrist of the opposite hand: prehensile movements; 5 (at the posterior extremity of the superior frontal convolution), extension forward of the opposite arm and hand; 6 (on the upper part of the antero-parietal or ascending frontal [anterior central] convolution), supination and flexion of the opposite forearm; 7 (on the median portion of the same convolution), retraction and elevation of the opposite angle of the mouth by means of the zygomatic muscles; 8 (lower down on the same convolution), elevation of the ala nasi and upper lip with depression of the lower lip, on the opposite side; 9, 10 (at the inferior extremity of the same convolution, Broca's convolution), opening of the mouth with 9, protrusion, and 10, retraction of the tongue—region of aphasia, bilateral action; 11 (between 10 and the inferior extremity of the postero-parietal convolution), retraction of the opposite angle of the mouth, the head turned slightly to one side; 12 (on the posterior portions of the superior and middle frontal convolutions), the eyes open widely, the pupils dilate, and the head and eyes turn toward the opposite side; 13, 13 (on the supra-marginal lobule and angular gyrus), the eyes move toward the opposite side with an upward 13, or downward 13' deviation; the pupils generally contracted (center of vision); 14 (of the infra-marginal, or superior [first] temporo-sphenoidal convolution), pricking of the opposite ear, the head and eyes turn to the opposite side, and the pupils dilate largely (center of hearing). Ferrier, moreover, places the centers of taste and smell at the extremity of the temporo-sphenoidal lobe, and that of touch in the gyrus uncinatus and hippocampus major.

It may be asked whether these facts, which have resulted from physiological experiment and from faradization, are of any practical value at the bedside. Their value may easily be shown. In a case of brain-disease, where

the faculty of speech is affected to any extent, it is safe to conclude that the lesion must be in one of three places nearly connected with each other—the island of Reil, the base of the third frontal convolution, or the white substance lying between the third frontal convolution and the base of the cerebrum. It will also, in most cases, be upon the left side, as already shown. Paralysis of motion affecting only the upper extremity, leads to a location of the lesion on the side of the brain opposite the affected arm, and either confined to or involving the ascending convolutions of the frontal and parietal lobes. In the same way, the affected point may be predicted, with an approach to certainty, in paralysis of the leg, of the muscles of the face, of the eyes, etc. Supposing, now, that a patient affected with certain forms of paralysis, either of motion or sensation, with difficulty of speech, or with a certain variety of strabismus, gives a history of an injury at some time long passed, to the head. The surgeon concludes that as a result of such injury the bones of the skull have become gradually thickened until the pressure of new bone upon the brain-substance is causing the symptoms which he observes. From the muscles and parts affected he is enabled, in some cases with almost absolute exactness, to predict where the thickened bone on the inner surface of the skull will be found, and by the use of the trephine upon this point he may cure the disease —a result which could not be obtained without the accurate knowledge which has resulted from the study of cerebral localization. Abscess in the substance of the brain, following a few weeks after an injury is by no means uncommon. Such abscesses may be treated as abscesses are in other parts of the body, by opening them and allowing pus to escape, provided only they can be located with sufficient exactness, so that the trephine may first be used to remove a portion of the skull and thus allow the plunging of a knife into the brain-substance and reaching the abscess-cavity. Suppose that a person who has been injured on the head develops aphasia, or the loss of words, after a few weeks. The indications are all in favor of the diagnosis of an abscess in the anterior part of the brain on the left side, and an operation at this point may save the patient's life, and has done so.

The surgical importance of these discoveries may be still further exemplified. Thus, if a person receive a severe injury on one side of the head, and there follows a paralysis of the hand and arm on the same side of the body, instead of on the opposite side, any surgical interference is contraindicated; for the reason that, were the injury to the brain confined to the seat of the wound, the paralysis would be on the opposite side of the body; but, being on the same side, it is proved that the brain-injury must be on the opposite side; in other words, that the brain has been extensively damaged, so extensively that the side opposite the point of injury is also deeply affected, and therefore surgical interference is probably useless. Again, the completeness of the paralysis may indicate that the brain-disease is not confined to the surface, but has involved the deeper portions, and that the operation of trephining is likely to do little if any good.

The celebrated "American crow-bar case," which was for a time looked upon with incredulity as a "Yankee invention," has recently been appealed to as an argument against the fact of cerebral localization, and as a proof that the most extensive injury may be done to that portion of the brain supposed to be the center of voluntary motion, without causing paralysis. The case was that of a man, aged twenty-five years, who was tamping a blasting-charge in a rock with a pointed iron bar three feet seven inches long, 1¼ inch in diameter, and weighing 13¼ pounds. The charge exploded prematurely, and the bar entered with its pointed end at the left angle of the patient's jaw, passed through the skull and out at the forehead, and was picked up at some distance, covered with blood and brain. The patient was stunned, but within an hour after the accident he was able to walk up a long flight of stairs, and give an intelligent account of the injury to the surgeon who attended him. He ultimately recovered, after an illness which it was supposed must necessarily end fatally, and lived twelve and a half years, dying of epileptic convulsions, without medical supervision. The skull was subsequently exhumed, and may now be seen in the Medical Museum of Harvard University.

The case is generally cited as one in which the man suffered no permanent damage from the injury, either mental or bodily; but a more careful study of it, made by Charcot, proves quite the contrary, and in fact brings it within the ranks of the proofs of cerebral localization. An examination of the parts of the brain which must have been lacerated by the projectile, proves that the whole track of the bar was in the præ-frontal region, and that the absence of paralysis was exactly what should have been anticipated from experimental research. The outer root of the olfactory bulb may also have been injured, and if such were the case there should have been a partial loss of the sense of smell; but on this point the history is silent. There should have been also more or less intellectual disturbance, and on this point the history by Dr. Harlow is conclusive: "His contractors, who regarded him as the most efficient and capable foreman in their employ previous to his injury, considered the change in his mind so marked that they could not give him his place again. The equilibrium of balance, so to speak, between his intellectual faculties and animal propensities seems to have been destroyed. He is fitful, irreverent, indulging at times in the grossest profanity (which was not previously his custom), manifesting but little deference to his fellows, impatient of restraint

or advice when it conflicts with his desires, at times pertinaciously obstinate yet capricious and vacillating, devising many plans of future aspiration, which are no sooner arranged than they are abandoned in turn for others appearing more feasible. A child in his intellectual capacity and manifestations, he has the animal passions of a strong man. Previous to his injury, though untrained in the schools, he possessed a well-balanced mind, and was looked upon by those who knew him as a shrewd, smart business man, very energetic and persistent in executing all his plans of operation. In this regard his mind was radically changed, so decidedly that his friends and acquaintances said he was 'no longer Gage.'"

CHADBOURNE, Paul Ansel, an American educator, born in New Berwick, Me., Oct. 21, 1823; died in New York city, Feb. 23, 1883. He was graduated at Williams College, at the head of his class, in 1848, and became a teacher in Willis's Academy, Freehold, N. J. From

PAUL ANSEL CHADBOURNE.

Freehold he went to the Theological Seminary, East Windsor, Conn., and after graduation went to Exeter, Mass., where he married. His wife and two children survive him.

Mr. Chadbourne next became tutor in his Alma Mater, and in 1853 was raised to the professorship of Chemistry and Natural History. It is worthy of note that he was also, without giving up his chair at Williams, elected to the same chair in Bowdoin College, and did the duty of both for seven years. He served as professor in the Berkshire Medical College, Mass., and for thirteen years was Chemical Lecturer in Mount Holyoke Seminary.

In 1855 he visited Newfoundland. Two years later he was at the head of a scientific party in Florida; and two years after this he visited Europe. For the purpose of studying the geysers and volcanoes, he extended his tour to Iceland. In 1869 he made a journey to Greenland, for exploration and research.

With all his devotion to science and learning, Dr. Chadbourne was a careful observer of public affairs, and quite as anxious to do his share in this line of duty as in any other. He was elected to the Senate of Massachusetts in 1865, and in 1876 was a delegate-at-large to the Republican National Convention. For the benefit of his health he removed to the West, and was soon after elected President of the University of Wisconsin. He discharged the duties of this post for three years, and then passed two years in examinations and experiments among the Rocky Mountain mines.

At this date (1872) he was chosen to succeed the venerable Dr. Mark Hopkins as President of Williams College. His occupancy of this office may be called the great work of his life. Under his able and skillful oversight the college prospered greatly; the number of its students was increased, and funds were liberally poured in for its support. He held the office for nine years, with unvarying success, after which he resigned, in order to carry out some extensive literary plans which he was very desirous to execute.

Dr. Chadbourne was first President of the Massachusetts Agricultural College, and in 1882 was reelected to that post. He also held it at the time of his death. He was a member of the Massachusetts Historical Society, of the Albany Institute, and of other learned societies abroad as well as at home. Two honorary degrees were conferred upon him by Amherst College, and the degree of M. D. by the Berkshire Medical College. He was the author of several books, among which were "Natural Theology," "Instinct in Animals and Man," and the "Relations of Natural History." He was chief editor of an elaborate work entitled "The Public Service of the State of New York." He was actively interested in manufacturing enterprises, as well as financial operations, and was a marvel to those who knew the

amount and number of works to which he put his hand and carried through successfully, despite the infirmities of body and the perils of uncertain health. He started for a visit to New York on the 13th of February, but, before leaving the cars, he was seized with what proved to be a fatal attack. He was carried to the residence of his brother-in-law, Mr. A. Schenck, peritonitis ensued, and he died on Friday, the 23d.

Dr. Chadbourne was a man of mark in many ways. As a scholar of varied acquirements, and an educator of rare skill and ability, he has had few equals in his day. Activity and zeal were specially prominent in his career, and his experiences of life were multiform. He was born in Maine, fitted for college in New Hampshire, and graduated at college in Massachusetts. He traveled extensively in his own country as well as in foreign lands. His life was full of adventure, of singular vicissitudes, and of noble, memorable work. He served four institutions of learning, three of them as president. He led parties for scientific exploration and research; he managed large and important business enterprises; and he published a number of learned scientific books. He was a theologian, too, of no mean power, and his mind and heart were at rest in possessing and enjoying those truths firmly held by the denomination with which he was connected.

CHAMBERS, William, a Scottish author and publisher, born at Peebles in 1800, died in Edinburgh, May 20, 1883. At the age of thirteen, after receiving the education which the schools of his native town afforded, he was apprenticed to a printer in Edinburgh. Three years later he opened a book-stall, and before 1832, when his brother Robert joined him, he eked out the profits of a small trade by working at case and press, and in 1830 published his "Book of Scotland," an elaborate and comprehensive account of the usages and institutions, the schools, social system, and civil and religious organization of that country. Previous to this time the brothers united in preparing a "Gazetteer of Scotland," which was written in the intervals of business and published in 1832. In February of that year appeared the first number of the "Edinburgh Journal," designed "to supply intellectual food of the best kind, and in such a form and at such a price as must suit the convenience of any man in the British dominions." It almost immediately attained a circulation of 50,000, whereupon the brothers united their business (Robert having also carried on a small book-store) into one establishment. The "Journal" has remained for fifty-two years one of the most widely circulated of British periodicals, and is at present conducted by Robert Chambers, son and nephew of the original founders. In 1834 W. & R. Chambers began the publication of a series of scientific and historical treatises, written in a popular style, under the title of "Information for the People," the average sale of the numbers of which was more than 100,000 copies. They were followed by the "Biographical Dictionary of Eminent Scotsmen" (1835); "Cyclopædia of English Literature" (1844); the "Popular Edition of Standard English Works," "Papers for the People," "Miscellany," "Repository of Instructive and Entertaining Tracts," and other similar collections — all of which were in a cheap form, and were widely read. "Chambers's Educational Course," which has been completed by degrees, includes works in almost every branch of knowledge, and was followed by "Chambers's Encyclopædia" (10 vols. 8vo, 1860–'68; new edition, 1871–'72)— all of which were in whole or part edited by William Chambers and his brother. The former contributed numerous essays to the "Journal," of which he was for many years after his brother's death the editor, and gave his impressions of the United States in a work entitled "Things as they are in America" (republished in New York in 1854). He was also the author of "Slavery and Color in America," "Peebles and its Neighborhood," "About Railways," "Wintering at Mentone," "Youth's Companion and Counselor," and "Improved Dwelling-Houses for the Humble and other Classes in Cities," suggested by his experiments in improving the dwellings of his tenantry on his estate of Glenormiston, near Peebles. He presented to his native town, at a cost of $150,000, a substantial building and an excellent library, known as the "Chambers Institution," and served two terms as Lord Provost of Edinburgh. In 1872 he published his last work, entitled "Robert Chambers, with Autobiographical Reminiscences." The crowning act of his long career was the restoration, at a cost of $150,000, of the interior of the old Cathedral Church of St. Giles, Edinburgh, to its former state of grandeur. Three days before the cathedral was to be reopened with appropriate ceremonies, the restorer was no more. The publishing-house of W. & R. Chambers is the largest in Scotland, employing more than three hundred persons.

CHAMBORD, Comte de (Henri Charles Ferdinand Marie Dieudonné d'Artois, Duc de Bordeaux), the last of the principal line of Bourbons, and, under the laws of the old French monarchy, heir to the throne of France, died at Frohsdorf, in Lower Austria, Aug. 24, 1883. He was born in the Tuileries, Sept. 29, 1820, eight months after his father, the Duc de Berry, son of the Comte d'Artois, afterward Charles X, was assassinated by a political fanatic. The birth of a prince in the continuation of the elder line, the one which preserved, untainted by any compromise with the Revolution, the traditions and principles of the monarchy, was hailed with ostentatious demonstrations by the royalists. The infant received the surname "Child of a Miracle," and was christened Deodonatus, or "God given." A national sub-

scription was opened, and with the proceeds the beautiful castle and estate of Chambord were purchased, and presented to the Prince as a public offering. The title of Duc de Bordeaux was given him out of compliment to the city which was the first to proclaim the Bourbons after the fall of Napoleon. He was now created Count de Chambord by the King, his great-uncle.

The birth of the Prince occurred at the time when a reaction against liberal ideas had set in, the main cause of the revival of royalist ideas being the murder of his father. The Duke of Orleans, who was descended from Philippe of

COMTE DE CHAMBORD.

Orleans, second son of Louis XIV, and was the son of Philippe Égalité of the Revolution, stood heir to the murdered Duke in default of male issue. He was the hope of the party of liberal-constitutional ideas. Between the throne and the Duke of Orleans were, in the regular line of succession, the Comte d'Artois, brother to the reigning King, the infirm Louis XVIII, and the Comte's surviving eldest son, the childless Duc d'Angoulême. It was in the hope of destroying the elder branch of the Bourbons that the saddler Louvel assassinated the Duc de Berry, under the portico of the Opera-House, Feb. 13, 1820. The Liberal ministers were driven from office, and the supporters of the Duke of Orleans were accused of inspiring the crime. When the Duchesse de Berry gave birth to a prince, the report was circulated by the Liberals that the child was a changeling.

The education of Henri was planned to foster in his mind the principles of absolutism and divine right. The chiefs of the ancient nobility, who served him as tutors and governesses, filled his brain with their romantic ideas of the ancient *régime*. When he was in his fifth year his grandfather succeeded the shrewd and prudent Louis XVIII, as Charles X, and the glories of the old monarchy were revived, and, in the exhibitions of royal splendor, the handsome little prince was made a central figure. Dressed in white and blue until he was six years old, in token of his dedication to the Virgin Mary, he reviewed his regiment of hussars, and distributed boons and pardons to suppliant crowds. In 1830 Charles X, with the assistance of his minister, Prince Polignac, attempted to reassume the prerogative of the kings of France. After twice dissolving the Liberal Chamber, he issued an ordinance, on the 25th of July, 1830, abrogating the charter of 1815. At the end of three days of barricade-fighting, the royal troops were beaten by the people of Paris. The Duke of Orleans accepted the crown as King of the French, and the deposed monarch journeyed slowly in royal state to Cherbourg, still expecting to be restored to the throne by an uprising of the provinces, and then set sail with all his family, followed by a frigate, which had orders to sink the ship if she should put back for the coast of France.

The proscribed King set up a court in the palace of Holyrood, at Edinburgh, until the ministry of William IV gave him to understand that there were political inconveniences attending the stay of the royal family in Great Britain. Before settling at Hradjin, near Prague, where they next established themselves, the Duchesse de Berry, a princess of energetic character and adventurous spirit, undertook an expedition into France, for the purpose of heading a movement to place her son on the throne. With her boy she landed secretly in the Vendée. The plans of the expedition were well laid, and the Legitimists formed in a military body without detection. But the Breton peasants did not flock to the white flag as was expected, not understanding the grounds for upsetting one Bourbon King to establish another. In a single engagement with the King's troops the insurgent band was routed. The Duchess was betrayed into the hands of the Government, and, when confined

in the Château de Blaye, was discovered to be pregnant, and declared that she had contracted a secret marriage with an Italian, Count Lucchesi-Palli. This episode not only brought the cause of Henri V into ridicule, but separated the young pretender thenceforward from his mother, as Charles X could never forgive her misalliance. Henri, who was safely brought back from the unlucky expedition by faithful adherents, was placed by his grandfather under the guardianship of the Duchesse d'Angoulême, a woman of strong will and masculine nature, while the Duchesse de Berry, who was a princess of Naples, was banished to the land of her nativity.

Chateaubriand, the celebrated expositor of clerico-royalist theories, filled with ideas similar to those which stirred Disraeli, Bismarck, and other statesmen, made the pilgrimage to Prague, in the hope of taking the direction of the young prince's education and bringing him up to become a democratic ruler, who should realize under the old patriarchal forms the popular aspirations of the Revolution, which the *bourgeoisie*, after becoming the dominant class under Louis Philippe, had selfishly forgotten. But democratic ideas were regarded with dread and aversion by the people surrounding the young Duc de Bordeaux. He was trained by his tutor, the Duc de Damas, in doctrines at variance with the whole movement of the century, and in the hope of simply restoring the old order as he was taught to conceive it by clerical guides, who made him believe that the kings of France were all men of saintly character, and that the dalliance of the aristocracy with Voltairean heresies was the cause of the fall of the monarchy. Henri grew up a religious devotee, completely ignorant of the world, and possessing ideas of the religious nature of the kingly office which created astonishment in the courts of Europe, when in his twentieth year he made a tour by the counsel of Cardinal Lambruschini, who feared the effects of his ascetic devotions upon the mind of the Prince. The family lived for some years at Goertz, or Göritz, in Istria, where Charles X died in 1836. When he was twenty-one years old he was thrown from his horse and sustained a fracture of the thigh, which made him slightly lame for life and unfitted him for robust exercise. The same year the Duchesse d'Angoulême purchased the castle and estate of Froschdorf, or Frohsdorf, forty miles from Vienna. The Comte de Chambord (which was the title that the Prince was called by after the expulsion of his family from France) was not able to leave his bed for two years after his accident. Shortly after his own mishap, the popular Duc d'Orleans, Louis Philippe's heir, was thrown from his carriage and killed, leaving the infant Comte de Paris as next heir, with the prospect of a regency under the Duc de Némours, who was not popular. In November, 1843, as soon as he left his sick-bed, he took up his residence in London, and publicly called upon his partisans to come and take the oath of allegiance. The Legitimist members of the Chamber and the House of Peers, with thousands of others, flocked to his mansion in Belgrave Square to pay homage to Henri V. A vote of condemnation passed by the Chamber on the conduct of these deputies had the effect of exposing the weakness of Louis Philippe's tenure of the throne and the seeming hopefulness of Chambord's prospects. The censured deputies resigned, and were all re-elected. It became the fashion in Paris to praise the Comte, and rave over the glories of the old *régime*. He strengthened his position and augmented his great fortune by marrying Maria Theresa, daughter of the Duke of Modena, in 1847.

With the brilliant Berryer to lead his party, which grew in numbers and importance up to the Revolution of 1848, there was an opportunity, if Chambord had been daring, unscrupulous, and despotic, and willing to sacrifice his principles to expediency, of obtaining the crown after the ignominious overthrow of Louis Philippe, though scarcely of holding it. But Chambord's lack of courage and decision of character kept him from making the attempt. It was necessary that he should pledge himself to rule constitutionally, a condition which he had already accepted in letters and addresses, and in the columns of his organs.

The communistic outbreak of June decided the fate of the second republic. After its rigorous suppression by Cavaignac, a Chamber was elected containing a strong group of Legitimists, and a large number who were ready to rally around Chambord, provided he would issue a manifesto embodying a charter of popular representation. He appointed many meetings with his political friends, and made frequent promises to adopt this course, but whenever the moment for decision arrived he escaped from his political advisers to meditate in some monastery and take priestly counsel. Prince Louis Napoleon canvassed the country, and secured the election to the presidency. The Legitimists voted for him, to keep out Cavaignac. The Comte de Chambord could not bring himself to renounce the absolutist theory of the monarchy by right divine and the re-establishment of the old ecclesiastico-feudal order. He shrank still more from the employment of military force. There was no hope of re-erecting the old Bourbon throne under any compromise or possible concessions without a sharp, sanguinary conflict with the democracy of the cities. While Thiers, Guizot, and Berryer were laboring to bring about a fusion between the Legitimists and Orleanists, which advanced to the point of direct negotiations with the Comte de Chambord at Wiesbaden after the death of Louis Philippe, and while Marshal Bugeaud, the first general of the French army at the time, held 50,000 of the choicest troops ready to strike at the orders of Henri Cinq, Prince Bonaparte strengthened his grasp on the cen-

tralized administrative machinery, and two years later destroyed the hopes of the royalists by himself establishing an absolute monarchy, and subsequently assuming the duty of defending the temporal power of the Pope. The Comte de Chambord still expected that the French people would fall at the feet of their hereditary sovereign, and accept him unconditionally.

His wavering conduct during this crisis disgusted his adherents. Yet many still upheld his pretensions as embodying the principles of Legitimism. In his comfortable retirement at Frohsdorf, where he maintained a stately court as a king in exile, he entertained courteously all who came from France. He enjoyed sport, following the hunt in a carriage, but occupied his mind chiefly with ecclesiastical antiquities, acquiring a remarkable acquaintance with the shrines of all countries and the religious relics they contained. The imperial court of France always treated him with deep respect, as a means of conciliating the old nobility, who kept aloof from the Tuileries, and after a while he seemed to be completely forgotten. When he abandoned the hope of having children, not only was the chief motive for establishing his claim to the throne taken away from him, but a deterrent sentiment took its place. Like all his family, Chambord hated the house of Orleans. The fall of the empire in 1870 drew him from his retirement at the age of fifty to resume the active *rôle* of a pretender. The crown was almost thrust upon him by his energetic partisans, and the dangers threatening the Church gave his cause a political significance which was lacking in 1848–'52, but he performed his part in a more reluctant, vacillating, and half-hearted way than before. After Sedan, he issued from Geneva a manifesto bewailing the fate of France, rather than announcing his candidacy. The royalists were politically active in the midst of the war, and the precipitate election of February, 1871, they turned to their advantage.

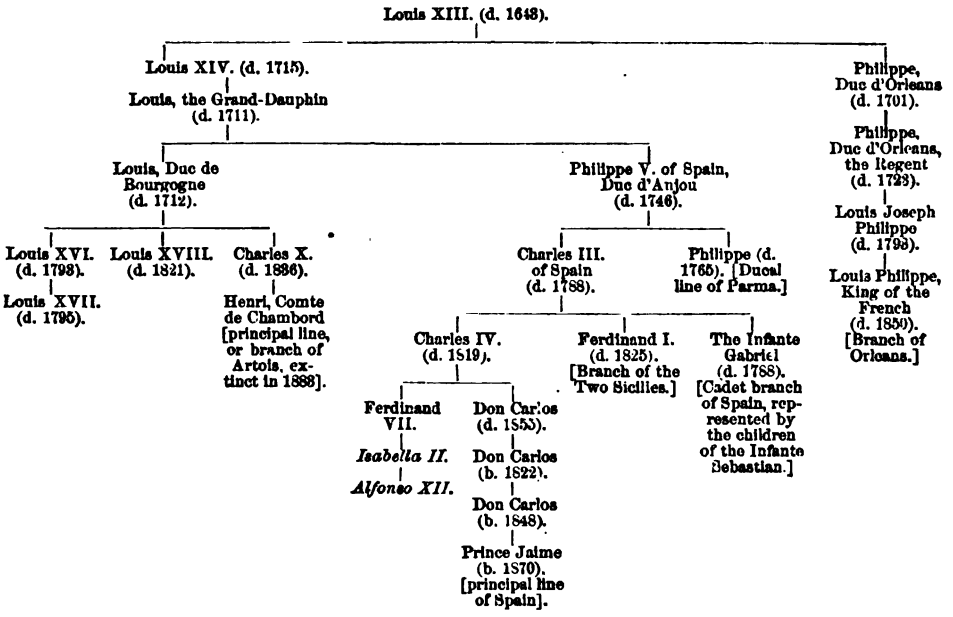
After the suppression of the Commune, the Comte resided for a time in his castle at Chambord. He wrote a series of letters disclaiming any intention of abolishing the tricolor, or representative government, or political equality, or of reviving church tithes. After launching a second manifesto, he withdrew to Marienbad. On the understanding that the Comte de Chambord would accept the crown as a constitutional monarch, and would appoint the Comte de Paris his heir, the Legitimists pursued their efforts to undermine the Thiers republic, and in the winter of 1872 they went to Bruges to pay homage to the pretender. Thiers declared that he would prosecute the actors in this demonstration, and have Chambord escorted across the frontier if he showed himself in France. On May 24, 1873, the royalist cabal overthrew Thiers, and on the 5th of August the Comte de Paris went to Frohsdorf in acknowledgment of the claims of the head of the family. In October the Comte de Chambord was at Versailles, and everything was ready for the *coup de main* which his friends urged upon him. The royalist majority in the Assembly would hail him King by acclamation, if he would only enter the hall and declare himself; while Marshal MacMahon stood ready to uphold his rights with the army. But he shrank from such a course, perceiving that the French people were not in sympathy with the restoration of the Bourbons. A deputation from the Right waited upon him at Salzburg and made a formal offer of the crown in the name of the parliamentary majority. The Prince, racked by the old questions, wavered and vacillated as before. To the delegates he replied that he accepted the crown, and would leave it to the National Assembly to frame a Constitution. His friends supposed that all difficulties were removed, and state carriages and decorations were ready on the 25th of October for the solemn entry of the King. Six days later his official organ, *L'Union*, published a manifesto declaring that he would never disown the white flag of Henri IV, or consent to become "the King of the Revolution."

The Orleanists were indignant. The republicans praised the Prince for his consistency of character and firmness of principle. The slender group of pure royalists clung still closer to the Comte de Chambord.

The Royal Succession.—The legitimate successor to the French throne is now the Comte de Paris, chief of the Orleans branch, who was formally accepted as such in the meeting between the heads of the two houses at Frohsdorf in 1883. Still the question can be raised by the dwindling party which adheres to the principles of feudalism and absolutism, whether the Spanish Bourbons, who are the eldest branch by descent, do not come legally next in the order of succession, since they are cut off from the Spanish throne.

The cadet branch of Orleans is almost as old as the Bourbon dynasty, being sprung from Philippe, Duke of Orleans, second son of Louis XIII, who was the son and successor of Henri IV, the first of the line. All the other living Bourbons are descended from Louis XIV, the elder son of Louis XIII. The appended genealogical table on page 107 exhibits the relationship of the various branches of the Bourbon family.

The house of Orleans has many living members, descended from Louis Philippe. His eldest son, who was accidentally killed, July 13, 1842, left two sons; the eldest, Louis Philippe, Comte de Paris, born Aug. 28, 1838, has a son, Louis Philippe Robert, born Feb. 6, 1869. His brother, the Duc de Chartres, has two sons. His uncle, the Duc de Némours, has sons and grandsons; and of his other uncles, the Prince de Joinville, the Duc de Montpensier, and the Duc d'Aumale, the two former have male issue.



CHANZY, Antoine Eugène Alfred, a French general, died in Chalôns, January 4th. He was born at Nouart, in the Ardennes, on the 18th of March, 1823. His father was a captain of cuirassiers. He entered the navy at the age of sixteen, and a year and a half later joined a regiment of artillery; was then received into the Academy of St. Cyr, and in 1843 was commissioned sub-lieutenant of zouaves, was given a lieutenancy in the line in 1848, became captain in 1851, and was then appointed chief of the Arab bureau in Hemsan. He became chief of battalion in 1856, fought in the Italian campaign, and as lieutenant-colonel took part in the Syrian expedition. Being promoted to a colonelcy, he commanded a regiment stationed at Rome, and in 1864 was transferred back to Algiers, and became general of brigade and commandant, first of Bel-Abbes and then of Hemsan.

At the beginning of the German war he went to Paris, and asked to be assigned to a command, but Marshal Lebœuf ignored him.

After the surrender of the imperial army at Sedan, and the investment of Paris, when the Government of National Defense marshaled the raw bodies made up of the remaining fighting material of the country, in the hope of still redeeming vanquished France, Chanzy was made a general of division, as most of the superior officers of the army were prisoners of war. After the retirement of General d'Aurelle de Paladines he was selected by Gambetta as "the true soldier revealed by events" to lead this second Army of the Loire in its stubborn resistance.

He has been spoken of as the one great soldier produced by France in 1870–'71, and the magnificent stand he made against the huge German forces in the region of the Loire gained the respect and admiration of Europe. The quality of his troops at this time was of the poorest, and discipline scarcely existed.

With Chanzy in immediate command under the direction of Gen. d'Aurelle, a new spirit was breathed into this mass. The Sixteenth Corps, joined with the Fifteenth, was now given the name of the Army of the Loire, and, by Nov. 1, 1870, it held the country to the north of the river, between Beaugency, Blois, and Marchenoir. D'Aurelle now resolved to march on Orleans, which had been captured by a raid from Paris, and, if possible, to cut off a Bavarian detachment, which was the only hostile body in his path. For this purpose he advanced his two corps, combining his operations with a French division which was to descend on Orleans from the upper Loire. These movements led to the battle of Coulmiers, the one French victory gained in the war, and though, owing to the delay of the distant French wing, the Bavarians contrived to effect their escape, they were rudely handled and badly beaten. Chanzy was in command of the French left, but, through the mistake of a cavalry leader, his operations were not brilliant.

The apparition of a victorious army perplexed the counsels of the Germans at Versailles; and it is now known that the French commander might have struck with great effect. The Bavarian detachment, not 20,000 strong, was literally the only hostile force between D'Aurelle and the capital of France, and had that general advanced boldly with his 60,000 or 70,000 men, he would almost certainly have crushed Von der Tann, very probably have defeated the Grand Duke of Mecklenburg, who was hurriedly sent off with a

few thousand men to attempt to reach his Bavarian colleague, and might possibly have raised the siege of Paris, for Von Moltke contemplated even this contingency. D'Aurelle, however, fell back on Orleans, his object being to make the position an intrenched camp of formidable strength, and a base for future offensive movements. Chanzy protested against this, urged his chief to advance to the line of the Coulie and be ready to assume the offensive, and especially entreated him to attack in detail Von der Tann, the Grand Duke, and Prince Frederick Charles, as, gathering together from wide distances and presenting their flanks to their collected enemy, these generals slowly converged on Orleans.

By the close of November, the Fifteenth

ANTOINE EUGÈNE ALFRED CHANZY.

and Sixteenth Corps had been reënforced by the Seventeenth, the Eighteenth, and the Twentieth, and the French army, 200,000 strong, filled the region around and in front of Orleans. The purpose of D'Aurelle was to await the attack of the enemy in his intrenched camp. Gambetta, however, believing himself as capable of directing armies as he was of levying troops, having heard that Trochu was about to make a great effort to break out of Paris, insisted upon a general movement in the very teeth of Prince Frederick Charles. For this purpose the Eighteenth Corps was prematurely thrown forward on Beaune-la-Rolande, the Twentieth failing to give it support, while the Fifteenth, the Sixteenth, and the Seventeenth were ordered to make what really was a flank march within reach of a foe at this moment all but concentrated. The Eighteenth Corps was at once defeated; and then the Prince, by a masterly movement, combined with his supports on the left, fell on the French center, the Fifteenth Corps, and shattered it after a brave resistance. This stroke forced Chanzy, who up to this time had gained slight advantages, to fall back with the Sixteenth on the Seventeenth Corps; the German commander followed up his success with energy and skill, and the result was that the Fifteenth Corps was all but ruined as a military force; Orleans and the intrenched camp were carried, and the Army of the Loire was rent in twain, the Eighteenth and Twentieth Corps being driven across the river, while the Sixteenth and Seventeenth and the wreck of the Fifteenth were rallied by Chanzy on the northern bank. A succession of false movements had inflicted a ruinous defeat on France; neither the defensive strategy of D'Aurelle nor the bolder plans of his able lieutenant had had a chance to be carried out.

D'Aurelle was dismissed. The divided parts of the Army of the Loire were separated into two bodies, the first army given to Bourbaki, and the second remaining under Chanzy, whose forces had been strengthened by the Twenty-first Corps, and by a flying column from Tours. By Dec. 6th he had placed the army between Marchenoir, Josnes, and Beaugency, having skillfully chosen a strong defensive line, with his flanks covered by a great forest and the Loire. He was forthwith attacked by Prince Frederick Charles, who, having entered Orleans on the 4th and 5th, turned against the enemy hanging on his flank, no doubt confident of easy success; but his calculations were completely baffled. In a series of stern and sustained engagements, Chanzy for four days repelled his assailant, inflicting considerable loss, and though the Prince was reënforced from Orleans by a detachment under the Grand Duke of Mecklenburg, he made no impression on his heroic enemy, until a demonstration from the Loire and Blois placed a German corps on the French rear.

Chanzy's skill was not more remarkable than his confidence and tenacious energy; his presence electrified his young levies, and from this moment he held absolute sway over the hearts of officers and men. The astonish-

ing efforts which he made once more disconcerted the strategists of Versailles. The great sortie from Paris had, no doubt, failed; but it had cost the Germans thousands of lives, and the proud city still defied its enemy. D'Aurelle had succumbed with Orleans; but a fresh army had arisen from the wreck, and it had found a chief who could make it accomplish feats that seemed impossible to professional soldiers.

While Chanzy was making his heroic stand, exposed to the whole weight of his enemy's force, Bourbaki did nothing, and declared that he could not detach a man from his quarters at Bourges to aid his colleague. This remissness enabled the Germans to make the movement along the Loire which endangered the flank of Chanzy when it had been found impossible to break his front, and it compelled him to leave his position. The great object of the French Government was to direct a relieving force on Paris, already besieged for four months. Accordingly, Chanzy resolved to ascend from the Loire toward the capital by the northwest, and by the 13th of December the French army was in position around Vendôme.

On Dec. 15th Chanzy was attacked again, Prince Frederick Charles having rightly judged that he was the foe to strike down at all cost. The French made a gallant resistance; but on the second day their right wing was turned, and shattered by an attack in flank. Chanzy decided on a retreat to Le Mans, a strong position upon the Huisne, and a strategic point of no little value, his object being still to attain Paris. He drew off his army without difficulty, and having been re-enforced by a Breton detachment, he reached Le Mans on Dec. 20th. During three weeks of incessant fighting he had held the main German army at bay. Having soon established his army on the Huisne, he threw out posts to the Braye and the Loire. Meanwhile Prince Frederick Charles had fallen back, holding a long line from Chartres to Orleans, his worn-out troops being in sore distress. A pause in the contest now occurred.

The position of France was very far from hopeless, but another interference of Gambetta's brought disaster. He rejected the judicious scheme of the general, and adopted the fatal project of detaching the First Army far to the east in order to raise the siege of Belfort and reach the German communications with the Rhine. Bourbaki, thus sent off to destruction amid the snows of the Jura, freed Prince Frederick Charles from an enemy on his flank, and enabled him to turn his whole forces against the one chief he had found invincible. Drawing together his army and that of the Grand Duke, the German commanders in the first week in January began to move toward Le Mans and the Huisne. The advanced posts of Chanzy were gradually driven in, though not without a tenacious resistance; but his trust was in his positions on the Huisne, which he had strengthened with remarkable skill, and he fell back on them with unabated confidence. He had still 90,000 men, against 60,000 or 70,000 Germans; but his troops were not to be compared to their foes. The attack began on Jan. 10th, but the decisive effort was made next day; and the Prince struck home with his full strength. The defense was stern and sustained; Chanzy's tenacity, and his strong positions, made up for the defects of his soldiers, and after ten hours of desperate fighting the French were still in possession of their lines.

A sudden attack, made after nightfall, by a German corps, discomfited the Breton levies, and placed a hostile force on Chanzy's flank. Scenes of confusion and panic followed, an effort to drive away the enemy failed; and Chanzy was compelled to make a general retreat. Although part of the French army disbanded, and several thousand were taken prisoners, it was in tolerable order within two days. By the 20th, having been scarcely pursued, so heavy had been the loss of the Germans, Chanzy was once more in a good position, around Laval and upon the Mayenne, and having been joined by a new corps, he still expected to make, as quickly as possible, good use of his force, and to march to the relief of Paris. But the fall of that city on Jan. 28th, and the catastrophe of Bourbaki's army, prevented him from attempting that march. He received the thanks of the Assembly at Versailles, and held afterward high command.

After the close of the war he was elected deputy to the National Assembly for Ardennes, and became the leader of the Left Center, declaring in favor of the republic from "patriotic and rational" grounds. Gen. Chanzy was reputed to be attached to the cause of the Orleanist monarchists, and it is certain that through his secret protection the Orleans princes entered the army under assumed names, and fought in the final campaign. After he was appointed on the committee of defense, on July 29, 1872, and placed in command of the Seventh Army Corps, he took no further part in political discussions.

On June 15, 1873, he was appointed Governor-General of Algeria, where he had difficulties with his subordinates, and declared a state of siege in the commune of Algiers. On Dec. 10, 1875, he was made a Senator, and in the election for President on Jan. 30, 1879, received 99 votes. On Feb. 18, 1879, he was appointed embassador to St. Petersburg, his political activity and ambition having awakened distrust in France. He was a *persona grata* at the Russian court, and his suspected royalist proclivities led to his recall toward the close of 1881. From Feb. 19, 1882, he commanded the Sixth Army Corps at Châlons.

CHEMISTRY. Chemical research during 1888 can not be said to have exhibited very marked progress in any one department, nor has it yielded much that is particularly striking in the way of new discoveries. There has been clearly apparent, however, on the part of those

devoted to the advancement of chemistry, a disposition to test the later results of investigation, with a view to the elimination of error, and the compacting and strengthening of the foundations of the science. This is seen in the study and discussion, by eminent authorities, of such questions as the variability of the law of definite proportions; the principles that should govern in the simplification and extension of the nomenclature; the revision of atomic weights; and the verification of old and the introduction of new and improved methods of analysis; while much valuable work has also been done in simplifying and perfecting methods and processes in the several departments of practical and applied chemistry.

Chemical Philosophy.—In a paper presented to the Chemical Society of Paris, Boutlerow alluded to the announcement by Schützenberger, that in analyzing some hydrocarbons, the sum of the carbon and hydrogen was 101 for 100 parts of material; the result under other conditions being normal. The question thus raised, as to whether the law of definite proportions may not, like Boyle's and Mariotte's laws, vary within small limits, Boutlerow has undertaken to examine by a series of experiments. If we disregard the physicist's theory that atoms are definite indivisible particles, the atomic weight of an element represents merely that weight of matter which carries a fixed quantity of chemical energy. The quantity of forms of energy other than chemical is not determined by the mass of the portion of matter in which they reside. The energy may increase while the mass remains the same, as when the velocity of a moving body increases, and it is supposable that chemical energy varies similarly to a very slight extent. This would make possible a variation in the composition of compounds, but the varieties would be identical as far as their chemical properties are concerned. The properties of a compound result simply from the reciprocal action of the mutually saturated combined elements, and this state of saturation would remain unchanged in these varieties, since the quantities of chemical energy acting on each side are still the same, only the mass of the carriers changing. This paper was followed by a statement from Schützenberger of his views on the subject. His researches would seem to show that within the very narrow range through which a body may vary in composition, is a ratio which gives the maximum stability, and this ratio represents the normal composition. Crystallization imposes a rigid constancy of combining proportions, but the composition of bodies can generally be varied by varying the circumstances under which they are formed. Among the cases enumerated by Schützenberger are the following: 1. Hydrocarbons, such as are obtained from Caucasian petroleum, or even turpentine, when burned in a combustion-tube with CuO and a current of oxygen, show always a loss of carbon of 1 to 1½ per cent. when effected at a low temperature and under circumstances where no carbonous oxide or empyreumatic products could escape. 2. When diamond is burned at a high temperature in pure oxygen, the carbon dioxide formed has oxidizing properties which it does not possess when produced by the combustion of an organic compound at the expense of CuO. 3. Barium carbonate obtained by precipitating baryta-water pure, boiling, by an excess of CO_2, washing and drying at 100°, then at 440°, contains, as Berzelius showed, 21·7 per cent. CO_2 for 78·5 per cent. BaO. Heated to a red heat in a current of dry oxygen, it increases considerably in weight without losing CO_2; and the product gives 22·0 to 22·05 of CO_2 to 76·6 of BaO. 4. Numerous analyses of metallic oxides show variation in composition within narrow limits, according to their mode of formation. HgO derived from the nitrate produces, in oxidizing formic acid, more carbon dioxide than the precipitated oxide. Ferric oxide obtained from the nitrate gives the atomic weight 54 for Fe, from the formula Fe_2O_3; while the ferric oxide obtained by roasting ferrous oxalate gives 56. The same differences are observed with tin, manganese, lead, cadmium, zinc, and copper oxides.

Prof. A. W. Williamson, in his address at the British Association, on "Chemical Nomenclature," remarked that the chief object sought in the nomenclature had been to state in a name, as briefly as possible, certain important facts. The first condition and requirement of a name was that it should call to mind, without ambiguity, some particular thing or one particular idea. The more a name could be defined and shortened the better it would be for chemistry. In the modern progress of the science—particularly in the department of the carbon compounds—the purpose of obtaining clearness and avoiding ambiguity in the nomenclature had been, with few exceptions, satisfactorily attained; but the chief object of convenience had not been reached to an equal extent in giving names to some of the more complex compounds. Some of the names told their story in a manner really free from any ambiguity, but in a very long and inconvenient word. On the other hand, the systematic process had been adopted to a considerably less degree in the names of common substances, which in the case of the older names were based upon facts indeed, but upon facts which were by no means the only ones to be recalled. Other names had grown up which were purely empirical, which did not recall any particular properties, but seemed with great convenience and without ambiguity to indicate the body. It was sometimes proper to change a name under the sanction of new information, but this should be done as little as possible, especially when a name once given had come to be used in relation to a particular substance. When changes tended to introduce confusion, they were necessarily injurious to the progress of

science. The best way to obtain a name was as the result of experiment, and then there could be no ambiguity. Names intended to indicate molecular constitution had better be avoided, because investigations in this direction had not arrived at finality. The chemists of fifty years ago were as confident as the chemists of the present day in the matter of nomenclature; and therefore the more they could obtain names without ambiguity and without liability to change in the future, the more probable was it that such names would stand and continue to be used.

New Substances.—Jannay, working under the direction of Von Meyer, has produced, by the action of hydroxylamine upon various ketones, a new class of organic bodies which he calls acetoxims. The term acetoxim is applied to a body containing the group CNOH= combined on both sides with carbon. If hydrogen saturates on one side, a body is formed to which Jannay gives the name aldoxim. The simplest acetoxim is dimethyl-acetoxim, $CH_3-CNOH-CH_3$, or acetoxim proper, analogous to dimethyl-ketone or acetone, and is produced by the action of hydroxylamine upon acetone in the cold in aqueous solution. It is easily soluble in water, alcohol, and ether, fuses at 59° to 60°, and boils at 134·8°. Petraczek has studied the aldoxims in the same laboratory, and describes ethyl-aldoxim C_2H_5NO, or $CH_3-CNOH-H$, and others. They are formed by the action of hydroxylamine upon the respective aldehydes.

Von Lippmann has examined the incrustations formed upon the pans in which beet-juice is evaporated. Besides finding in them citric, aconitic, tricarballylic, and malonic acids, he has isolated a new acid, which was obtained by fractional solution in ether and evaporation. The resulting sirup, after standing two years, became a mass of needle-shaped crystals soluble in water, alcohol, and ether, and having the formula $C_6H_8O_8$. The acid is tribasic, and appears to be identical with the oxycitric acid described by Pawolleck as obtained from chlorcitric acid.

Divers and Shimosé have obtained a new oxide of tellurium by heating in a vacuum the compound of sulphur trioxide and tellurium until it decomposes. It is a solid body which, on heating, decomposes into tellurium dioxide and free tellurium, and appears to have neither acid nor basic properties. It is stable in ordinary dry air, is black with a brown shade, has a graphitic luster when pressed, is represented by the formula TeO, or a multiple of it, is decomposed by potassium hydrate on boiling, and by hydrochloric and sulphuric acids in the cold, is oxidized readily by nitric acid, and colors sulphuric acid red as it dissolves it, the solution giving a deposit of tellurous sulphate. The same chemists have also obtained, by the action of sulphur trioxide on tellurium, tellurium sulphoxide, as an amorphous solid, of a beautiful red color, transparent in thin layers, which softens at about 80° without melting, and is quite stable when kept in close tubes. Its composition is represented by the formula SO_2Te, and it is decomposed by water into tellurium, tellurium monoxide, tellurous acid, sulphurous and sulphuric acid. It appears to exist in two modifications, as the red variety is at 90° converted instantaneously into a brown substance of identically the same composition.

Victor Meyer was led by certain observations to the conclusion that some difference existed between the benzene obtained from coal-tar and that from benzoic acid. He continued his experiments, and succeeded in isolating from coal-tar benzene a peculiar substance containing sulphur, which he calls thiophene. It is a light, limpid, very mobile oil, with a slight odor suggesting that of benzene. It does not solidify in a mixture of ice and salt. It dissolves in concentrated sulphuric acid, giving a deep-brown solution. Its derivatives under the action of various reagents resemble the corresponding derivatives of benzene, and their constitution is similar, except that they are derived from a mother-substance containing sulphur. It is stable toward alkalies and even toward the alkali metals. All commercial benzene contains thiophene.

Dr. Albert R. Leeds has formed from the union of œnanthol with the aromatic bases the oils of closely related physical properties, œnantholaniline, a reddish mobile oil of pleasant ethereal smell, œnantholxylidine and œnantholnaphthylamine. The ethereal smell of the latter oil is very pronounced and agreeable, and resembles the odor of pineapple. The processes of the formation of these substances are accompanied by great energy and a remarkable elevation of temperature. The compounds are permanent, and can be sublimed with only partial decomposition. By the sublimation of xylidinacrolein was obtained an oil with an unpleasant smell and very bitter taste, which forms crystalline salts with sulphuric, hydrochloric, and other acids. From the hydrochloric salt was obtained an oil of reddish color and unpleasant smell, having the composition of cryptidine. This is the first attempt to isolate this member of the pyridine series, only its salts having been obtained before, and it is of further interest as being accomplished by a process of synthesis.

New Processes.—Dr. A. R. Leeds has described an actinic method for the determination of organic matter in potable water, which he considers more accurate than any of the other methods in common use. It depends upon the fact that compounds of silver are not decomposed by light when they are in solution in water, unless organic matter is present in the water also; and upon the other fact that stable organic bodies, like sugar, starch, gum, etc., have very little influence, while decomposing substances precipitate the silver very rapidly. The amount of silver thrown down can be readily weighed, and the relative amounts of

organic matter present in the water thus determined.

While the method of testing sugar for the presence of starch glucose by the optical saccharometer is satisfactory, it can be applied only by the very few persons who have such an instrument. Mr. P. Casamajor has described a process which can be applied by using such means as are at the command of every one, and is effective for the detection of adulteration with either anhydrous or hydrated glucose, as follows: Take two beaker-glasses, or two teacups; in one put a quantity of the suspected sugar, and in the other put about the same quantity of a sugar known to be refined sugar, free from adulteration. Add, cautiously and gradually, a quantity of water to each sugar sufficient to make each equally and decidedly moist, and stir the sugar to mix it well and get it uniformly wet. Then place both cups in hot water—at any temperature between 50° and 100° C. In about ten minutes the pure sugar will appear more moist than when cold, while the other sugar, if it contains a sufficient amount of starch-glucose, will have sunk into a pasty, sticky mass, analogous to the fill-mass of sugar-refiners. The application of heat is not indispensable, as a difference may be obtained by allowing the two sugars to stand several hours after being moistened, but with heat the effect is immediate, and is much more marked. If the two samples of sugar are allowed to stand in the cups after they have cooled down, the pure sugar will look drier on becoming cold, while the adulterated sugar will continue in the state of a pasty, sticky mass. This test is founded on the property possessed by cane-sugar of forming viscous, uncrystallizable compounds, of which molasses is an example, when mixed with many organic or inorganic compounds, among which are anhydrous and hydrated glucose. As long as a mixture of cane-sugar and starch-glucose is sufficiently dry, it may look fairly enough, as the elements which form molasses are kept from combining by want of water. Hence adulterators are careful to dry their sugars before mixing with glucose. Indeed, one characteristic of adulterated sugars is, that they are drier than refined sugars of the same grade, which are known as coffee-sugars, and are always sold moist.

Peter Claëson proposes a new method for determining sulphur in organic substances by effecting the complete oxidation of the substance in a current of oxygen and nitric oxide —i. e., nitrogen tetroxide gas. A combustion-tube somewhat longer than the furnace is drawn out at one end and bent at a right angle. Next to the bend is placed a roll of platinum gauze; beyond this a boat containing fuming nitric acid; beyond which follow a second and a third roll of platinum gauze, and beyond this the sulphur-boat and a fourth roll of platinum gauze. The bent end of the tube dips into water in a small flask, and the other end is closed with a stopper admitting the connecting tubes to the oxygen and nitric oxide supplies. After filling the tube with the mixed gases the platinum roll on either side of the nitric-acid boat is heated to low redness, then the boat farthest from the substance. The tube is then heated. The color of the tube between the two boats serves as an indicator; if the red color disappears, the combustion must go more slowly. The nitric acid in the boat acts as a reserve; the hot gases in passing over it always take up enough oxygen compounds to complete the oxidation of any unburned particles. At the end of the combustion the heating is extended forward until all the nitric acid and the sulphuric acid formed in the reaction have distilled over into the flask. After cooling, the contents of the flask and the washings of the tube are evaporated to dryness, and after dilution with water the sulphuric acid is determined as barium sulphate.

C. Böhmer has described a new method of estimating nitric-oxide gas obtained by the reduction of nitric acid. It is based on the fact, which the author had shown in an earlier paper, that chromic acid is an excellent absorbent for nitric oxide. The nitrate or nitric acid is decomposed in the usual way, and the resulting gas, after being dried by calcium chloride, is absorbed in a Liebig's potash-bulb containing chromic acid, and the nitric oxide is determined by the increase in weight.

W. Halberstadt has proposed a new method for the separation of vanadic acid from metals, which is based on the fact that, when a mixture of the acid and metals is heated with ammonium oxalate and acetic acid, the metals are precipitated as oxalates, while the acid sought for remains in solution. The hydrochloric-acid solution of vanadic acid is evaporated to dryness, the residue is heated with a solution of ammonium oxalate in water, and a few drops of strong acetic acid are added till all has dissolved. The liquid is poured into a beaker and heated over a free flame, while acetic acid is added drop by drop—not too rapidly, for then the precipitate is difficult to wash—until the precipitate ceases to form. After filtering off the precipitate and washing with a mixture of equal parts of strong acetic acid, alcohol, and water, the filtrate is evaporated to dryness in a weighed platinum dish, and the residue is heated slowly to expel volatile ammonium salts, and then the remaining vanadium oxide is converted into vanadic acid by heating in a current of oxygen. The method gives good results in the presence of barium, calcium, zinc, or lead, but not with cobalt, nickel, manganese, magnesium, bismuth, copper, or cadmium.

Mollenda determines, volumetrically, the phosphoric acid in superphosphates by finding the amount of a standard solution of sodium carbonate necessary to neutralize the acid phosphate of calcium, which forms the solu-

ble portion of the superphosphate. In order to prevent the precipitation of calcium carbonate from any sulphate of calcium that may be present, the entire amount of calcium is precipitated by sodium oxalate, and the acidity of the resulting mono-sodium phosphate is determined. If free sulphuric or phosphoric acid is present in the superphosphate, sodium carbonate is added before titration, until the liquid becomes slightly turbid.

Mr. L. Marquardt has described a new method for the quantitative determination of fusel-oil in brandy. The oil is extracted with chloroform, and the product is oxidized with bichromate of potash, distilled, and treated with barium carbonate. The chloroform and the excess of barium carbonate are removed, when the baryta and the barium chloride are determined by means of nitric acid. The quantity of amylic alcohol or fusel-oil is calculated from the baryta.

G. Larsen has shown that copper and zinc can be separated by one precipitation with hydrogen sulphide if hydrochloric acid is added to the hydrogen sulphide with which the precipitate is washed. Emil Berglund finds that the method holds good when the amount of hydrochloric acid added to the wash-water is smaller than recommended by Larsen, and further, that zinc is not precipitated with copper if the amount of hydrogen sulphide in the wash-water is small.

Spring has communicated the results of experiments in producing sulphides by exposing various metals mixed with sulphur, both finely divided, to a pressure of 6,500 atmospheres. Magnesium after six pressings, each time being reduced to filings, gave a gray homogeneous mass having a weak metallic luster. Zinc, after three pressings, gave a sulphide resembling the natural blende; iron, after four pressings, gave a block which was hardly touched by the file, and appeared homogeneous under the microscope. Cadmium sulphide was formed easily in three pressings, in a yellowish-gray, homogeneous mass. Bismuth sulphide and antimony sulphide were formed in two pressings, and lead sulphide still more easily; copper and tin yielded the sulphide in three pressings. Silver required from six to eight pressings before a homogeneous mass could be obtained. Aluminum and carbon gave imperfect results. Spring has drawn the conclusion from his experiments that allotropic states are only different conditions of polymerization, in which the chemical activity decreases as the process goes on.

The method almost exclusively employed for estimating the halogens in organic compounds, that of Carius, consists in heating the substance in a sealed tube with fuming nitric acid and silver nitrate. R. T. Plimpton and E. E. Graves propose, in the case of volatile compounds, a method by which the substance is introduced into a U-tube through which illuminating gas and air are passed, as in a Bunsen burner. The volatile substance evaporates and burns with the gas at a tip on one end of the tube, while the halogens are left partly free and partly in combination with hydrogen. The evaporation is sometimes aided by warming the tube with hot water or otherwise. The temperature is raised or lowered so that the substance may always be detected in the flame, yet not in sufficient quantity to make the flame luminous. The products of combustion are aspirated through a bent funnel tube and collected in dilute caustic soda; this is boiled with sulphurous acid to reduce chlorates, etc., and the halogens are then precipitated with silver nitrate. The success of the experiment depends upon the regular volatilization of the compound.

Mr. W. G. Strype, of Wicklow, Ireland, has devised a method of purifying the hydrochloric acid used in the manufacture of chlorine from sulphuric acid before admitting it into the chlorine-stills, by which the difficulties arising in this manufacture from the accumulation of calcium sulphate are to a large extent obviated. His process depends upon the fact that while calcium sulphate is somewhat freely soluble in hot hydrochloric acid, it is only slightly soluble in the cold acid.

Successful experiments have been made by M. J. Garnier at works near Rouen, France, with a new process for removing arsenic and antimony from copper. It comprises the employment of a sole of chalk and tar, over which, for each separate operation, is placed a false sole of limestone and manganese peroxide. With the melting of the copper, a generation of carbonic acid and oxygen begins from the upper sole, which oxidizes the charge. As soon as the metal is sufficiently liquid, the lime and manganese protoxide rise and dissolve the arsenic acid. By this one operation the amount of arsenic, according to M. Garnier, is reduced to one-fifth. Subsequent fusions with basic fluxes are said almost completely to eliminate the arsenic.

Dr. Sidersky bases a method for the separation of calcium from strontium on the statement that on adding a mixture of sulphate and oxalate of ammonium to a solution of strontium, the latter is all precipitated as sulphate; while, if the mixture is added to a calcium salt, only oxalate is precipitated. If it is added to a solution containing both strontium and calcium, the former is precipitated as sulphate and the latter as oxalate. The two precipitates are separated by the solubility of the oxalate in acids.

Otto F. von der Pfordten has published a new method for the estimation of tungstic acid by reduction with zinc and hydrochloric acid to tungsten dioxide. The reduction is best effected by using a 27-per-cent. solution of hydrochloric acid. The solution first becomes blue, then a black-green, and finally a dark brownish-red, the end product being tungsten dioxide, which is determined by titration with potassium permanganate. The method has the disadvantage that only very small quantities of

tungstic acid can be used in the reduction, so that the percentage of error may easily become large.

Industrial Chemistry.—The manufacture of organic coloring-matters from coal-tar has made enormous progress within recent years, but the activity of chemists has been exerted to a much higher degree in developing the application of the direct products of tar-distillation than in bettering the methods of obtaining those products. Several of the coal-tar hydrocarbons have found extensive practical applications in the manufacture of the azo colors. The azo compounds, containing the group—N =N—in combination with two aromatic nuclei, are all colored, but the azo hydrocarbons themselves have no affinity for animal and vegetable fibers, and hence can not be used as dyes. On the other hand, such of their derivatives as contain amido or hydroxyl groups are coloring matters. Some of these have long been known, but, with the exception of aniline yellow and Bismarck-brown, the azo compounds were not made use of until 1876. Since then, a great number of new ones have been made, many of which have been patented and manufactured on a large scale. The oxyazo colors are made from a diazo salt and the combination of a phenol with an alkali metal. The amidoazo colors are made on a large scale by the action of nitrous acid on a free amine, or, when this is not practicable, by the action of a diazo salt on an amine. By means of these reactions the number of azo colors which may be formed from aromatic compounds containing amido and hydroxyl groups is almost infinite. The popularity of these colors has become so great that the demand for the hydrocarbons used in making them has vastly increased, and their price has risen considerably, while attention has been given to means of producing them in greater abundance and in the state of purity in which they have to be to secure perfect colors.

The manufacture of soda by the ammonia process has been greatly increased within a few years past. Tables of the relative amounts of soda manufactured in different countries by the Leblanc and the ammonia processes, prepared by Mr. Walter Weldon, show that out of a total of 708,725 tons, representing the annual products of Great Britain, France, Germany, Austria, Belgium, and the United States, 163,225 tons are manufactured by the ammonia process and 545,500 tons by the Leblanc process. A new enterprise has been begun for the working of the Leblanc process in connection with the extraction of copper and iron from Spanish and Portuguese pyrites, in which the sulphuric acid evolved in that manufacture will be made economically available. The Rio Tinto Company is building factories in France for the exploitation of a combined process in which copper and oxide of iron will be relied upon as the products of chief importance, while soda and hydrochloric acid will be made as by-products. Thus, at first soda was the only product of the Leblanc process that had commercial importance; then in time a demand grew up for chlorine, and the hydrochloric acid formed during the process became valuable; next, soda ceased to be profitable, and became a kind of by-product that continued to be made because chlorine could not be made without it. Now Leblanc soda, says Mr. Weldon, gives no profit at all, and chlorine none to speak of; and both have come to be regarded as secondary products, to be made only incidentally, and only because making them is essential to the application to certain ores of the wet method of extracting copper. The difficulty of obtaining a supply of ammonia commensurate with the extension of the demand, which it was at one time thought would hinder the speedy development of the ammonia process for making soda, has been removed—so completely that, notwithstanding the great increase in the development of the process, the price of ammonia is falling. It is now obtained commercially from coke-ovens; and Mr. William Ferrie has introduced with success a method for collecting it from the gases of blast-furnaces in which raw coal is used. From two of the sixteen blast-furnaces at the Gartsherry Iron Works in Scotland, ammonia and tar are now regularly collected at the rate of twenty pounds of ammonium sulphate per ton of coal consumed. Thus it appears to be possible to collect and utilize as ammonia a portion at least of the nitrogen of nearly all the fuel burned for industrial and domestic purposes. A suggestion has been made that the soda-maker shall entirely cease to use raw coal as fuel, but shall convert all his coal into coke, collecting for sale the oil and ammonia evolved during the conversion, and himself using for heating purposes the gases evolved during the coking operation and the coke itself. It is believed that the soda-maker might by this mode of proceeding obtain his fuel virtually for nothing. In the Leblanc process the chlorine of the salt decomposed is yielded as hydrochloric acid; in the ammonia process it is yielded as a somewhat dilute solution of calcium chloride. This is a matter of small importance in England, where hydrochloric acid is produced in excess; but on the Continent, where the demand for chlorine is greater than the supply, it operates against the Leblanc process. M. Solvay is accordingly about to try at his ammonia-soda works in Dombasle, France, a process for obtaining hydrochloric acid from calcium chloride. Having concentrated by evaporation the mixed solution of calcium and sodium chlorides which is the residual product of the ammonia process, he mixes it with clay into balls, dries the balls and heats them to redness in a current of steam, whereby he obtains a mixture of the vapor of water and the vapor of hydrochloric acid, which he dries by passing through a very strong solution of bichloride of calcium.

The Société de St. Croix at Lisle is manufacturing potash upon a large scale by the trimethylamine process, which is similar in principle to the ammonia process for the manufacture of soda. The latter process can not be used for the manufacture of potash, by reason of the too great solubility of hydro-potassic carbonate in solution of ammonium chloride. Bicarbonate of potash is, however, but very slightly soluble in chloride of trimethylamine. Besides the nature of the ammonia employed, the chemistry of this process appears to differ from that of the ammonia process also in the fact that, instead of using a bicarbonate as in that process, the sesquicarbonate, the highest carbonate of trimethylamine that can be obtained at present in a free state, is employed, and the reactions are more complex. The trimethylamine process is limited in its application, for it is available for the manufacture of potash only from potassium chloride, while the Engel process is efficient either with that salt or with the sulphate.

G. Archibald describes a new industrial method of preparing paper-pulp, which has been patented in the United States and Canada. Wood or straw is cut to pieces, macerated with milk of lime, transferred to a digester after twenty-four hours, and saturated with sulphurous acid, with the simultaneous application of a pressure of five atmospheres for one or two hours. The material is then washed with water and again treated under pressure with three per cent. calcium chloride and half per cent. aluminum sulphate. After these substances have been washed out, the pulp resembles cotton in appearance, and can be employed for manufacturing the finer grades of paper at once. The process requires about three hours after the treatment with milk of lime.

A. Houzeau and Fr. Goppelsroeder have traced the active agency in grass-bleaching, which Schoenbein ascribed to ozone, to peroxide of hydrogen. The proportion of this substance in the air was found to differ, according to a variety of circumstances; and the preponderating influence in its production is believed to be light. Atmospheric precipitations, particularly hoar-frost, contain considerable quantities of it; and the quantity that came to the earth within four months was found to amount to 62·9 milligrammes per square metre. The ordinary processes of open-air and wax-bleaching are attended with so many inconveniences in delays that the production of the effective agent in a concentrated form was suggested as a manifest remedy. The peroxide of hydrogen is superior to all other media for oxidation in bleaching, in that it can be used without inconvenience and without any danger of injuring the fiber. It may be concentrated from its solutions by freezing out, or by evaporation in a vacuum over sulphuric acid, at a temperature of from 59° to 68° Fahr. Diluted solutions of it are equal to solution of chlorine in effect, and will keep for months in a temperature not exceeding 77° Fahr., if protected from the light. All products which are to be bleached by this substance must be submitted to a preparatory treatment, the purpose of which is to render them capable in every part of being moistened with the watery solution.

Dr. Max Schaffner and Mr. W. Helbig, of the Aussig Works, Bohemia, have applied a process for recovering sulphur from alkali-waste, which, while it requires no acid, saves the whole of the sulphur originally contained in the waste, and in addition all of the calcium as carbonate. It includes three operations, the first of which consists in heating fresh waste with solution of magnesium chloride in a closed iron vessel furnished with a mechanical agitator, when two double decompositions take place—calcium sulphide and magnesium chloride into calcium chloride and magnesium sulphide; and a reaction of the last upon some of the water present to produce magnesia and sulphureted hydrogen. The sulphureted hydrogen is evolved in a continuous stream until the charge of waste is completely decomposed, and then there remains in the boiler a solution of calcium chloride holding in suspension an equivalent of magnesia. In the second operation, one third of the sulphureted hydrogen is burned into SO_2 and steam, and these products are mixed with the other two thirds and passed through a solution of calcium chloride, whence is derived a thin magma, consisting of solution of calcium chloride holding in suspension free sulphur. The third operation consists in injecting carbonic dioxide into the solution of calcium chloride, holding magnesia in suspension, which had been obtained as the residual product of the first operation, thereby reproducing the quantity of magnesium chloride which had been begun with, and at the same time regenerating all the calcium carbonate which had been employed for the production of the black ash, of which the waste had been one of the constituents. Mr. Alexander Chance, of Birmingham, has applied a modification of the third part of the process, by which all of the sulphureted hydrogen evolved in the first operation is burned, and the resulting sulphurous oxide is sent into the vitriol chambers, by which the cost of the process is reduced simply to the cost of the operation of reducing the magnesium chloride.

MM. Benker and Lasne have introduced a process for economizing nitrous compounds in the manufacture of sulphuric acid, which consists in the reduction of the nitric peroxide in the chamber gases before they reach the Gay-Lussac tower into nitrous anhydride (N_2O_3), which forms a stable compound with sulphuric acid. This is done by injecting into the conduit conveying the exit gases from the last chamber to the foot of the Gay-Lussac tower, a regulated quantity of sulphurous oxide, accompanied with just the quantity of vapor of water necessary to form, with the SO_2+NO_2, nitro-sulphuric acid. Another plan for accom-

plishing the same object consists in making the gases which have traversed the ordinary Gay-Lussac tower afterward traverse several supplementary towers, supplied with weaker sulphuric acid than is supplied to the Gay-Lussac tower itself.

Domestic Chemistry.—F. P. Hall, of the Massachusetts Institute of Technology, has published in the "American Chemical Journal" the results of some investigations on the corrosion of fruit-cans and tin-foil by the acids of the articles of food inclosed in them. Acetic, tartaric, and citric acids dissolved more tin and lead (in some cases twice as much) from sheets of pure metal than from alloys. In glass-stoppered bottles from which the air was as well excluded as it is from ordinary fruit-cans, the action was less than in loosely-covered beakers, but still considerable. Three cans that had been emptied were let stand two weeks with acid in them, at the end of which time the tinning had been taken off up as far as the acid reached. There was dissolved by

	Tin.	Lead.
	Grammes.	Grammes.
Acetic acid	0·4178	0·0117
Tartaric acid	1·0430	0·0873
Citric acid	0·6828	0·1559

Hence a can once opened should be emptied immediately, as corrosion thereafter takes place very rapidly. Analyses of the "bright plate" of which cans and other tinware are made, showed no admixture of lead in the tinning, and no tinware could be found made of "terne plate," the sort that is understood to be coated with an alloy of tin and lead. The solder of the cans, however, contains a large amount of lead, and vegetable acids act on this as well as on the pure tin of the plate.

Twelve specimens of tin-foil obtained from dealers were analyzed. Only three of these were sold for pure tin, and they proved to be as represented; the others, some of which were called "composition foil," gave from 60 to 95 per cent. of lead. Nine specimens that had been in use gave various results. Two from different kinds of compressed yeast contained no lead, and a piece of foil from a cake of chocolate bought at a street stand was also pure. A piece of embossed foil from a fancy cake of chocolate gave 80 per cent. of lead, and in two specimens from Neufchâtel cheese were found respectively 73·19 and 75·27 per cent. "The use of a foil containing about 75 per cent. of lead for wrapping the so-called Neufchâtel and other soft cheese is certainly reprehensible. Owing to the acid in or developed in the cheese, the foil becomes crumbly, and even when the cheese is first covered with greased paper, particles of the oxidized foil are very likely to become attached to the cheese as it is used."

Mr. William Thomson, F. R. S. E., having investigated a case of lead-poisoning arising from the use of unsuspected water-pipes of lead, was induced to examine the merits of the tin-lined pipes. A pipe, the coating of which was from $\frac{1}{16}$ to $\frac{1}{32}$ of an inch thick, to his surprise, gave evidence of contamination to the water that passed through, and the lining was found to contain a large proportion of lead. A similar pipe from another manufactory revealed the same impurity. These pipes were found to have been made by pouring tin down the side of a strip of lead in introducing it as lining. In the course of the process the tin had dissolved a considerable quantity of lead. Such pipes are used to a considerable extent in drawing beer, and are in danger of contaminating the liquor, particularly that portion of it which, standing in them over night, is sold to the first customer in the morning. In another kind of lead pipe, called "tinned-lead pipe," the inside coating is made by filling the first few inches of the lead pipe, while still very hot, with molten tin, which remains molten and washes the inner surface of the lead tube as it is produced. The quantity of this "tin" increases as the pipe is drawn out, by melting the lead with which it is in contact and carrying it along, and ultimately the lining consists chiefly of lead. Mr. Thomson has observed that aërated waters are contaminated with lead much more often and in many cases to a much greater extent than would be expected, considering the pains which is taken in preparing the articles. Manufacturers admit the fact, but say that it is impossible to procure the substances free from metallic contamination at anything like reasonable cost.

M. Gustave Le Bon has been carrying on investigations upon the action of antiseptics, from which he concludes that the disinfectant power of any antiseptic appears to be the more feeble as the putrefaction is the more advanced. If an aqueous solution containing one tenth its weight of minced meat be taken as the normal solution, it will exhale during the first stages of putrefaction an extremely fetid odor, which, however, can be destroyed by a comparatively small amount of antiseptic. At the end of about two months new bodies with a special odor will be developed, which require for their destruction quantities of the same antiseptic at least twice as great as at first. If the power of antiseptics be measured by taking as a means of comparison their disinfectant properties upon a given weight of the normal solution already mentioned, the most powerful disinfectants will be shown to be potassium permanganate, chloride of lime, sulphate of iron acidulated with acetic acid, phenol, and the glyceroborates of sodium and potassium. There is no parallelism between the disinfectant action of an antiseptic and its action on microbes. Potassium permanganate, which is one of the most powerful disinfectants, exercises no appreciable action on microbes. Alcohol, which checks the develop-

ment of microbes, exerts only a very feeble disinfectant action upon the products of putrefaction. There is likewise no parallelism between the power of preventing putrefaction and that of checking it when it has begun. Phenol and alcohol are excellent preservative agents, but have only a slight action upon putrefaction in progress; with the exception of a very few substances which are powerful toxic agents, such as mercuric chloride, the greater number of antiseptics, and notably phenol, have only a very feeble action upon bacteria. M. Le Bon even regards phenol as one of the best liquids which can be employed to preserve living bacteria for a long time. The experiments made upon cadaver alkaloids can not serve to decide the question as to whether the volatile alkaloids which give to putrefaction its odor are poisonous, for such experiments have generally been made by introducing into the system putrefaction products containing bacteria, to which the effects observed may be attributable. M. Le Bon's experiments were made upon frogs placed in jars, at the bottom of which was a very thin layer of his normal liquid. At the beginning of the putrefaction the liquid, although it emitted a very fetid odor, swarmed with bacteria, and was very virulent if injected under the skin, had no appreciable effect upon the frogs; but the same liquid, two months old and no longer having virulent properties, killed in a few minutes the animals that breathed its exhalations. In fact, the virulent power of a body in putrefaction and the toxic power of the volatile compounds which it gives off seem to be in an inverse ratio to each other. The extremely minute quantity of the products of advanced putrefaction necessary to kill an animal by simple mixture with the air it breathes is a fact that shows these volatile alkaloids to be extremely poisonous.

Atomic Weights.—Nilson has calculated the atomic weight of thorium from the sulphate, which he obtained from Arendal thorite by successive treatment with hydrochloric and sulphuric acids. The purified salt was twice precipitated with ammonia, and washed and dissolved in hydrochloric acid, and then converted into an oxalate and ignited. The snow-white oxide was converted into sulphate, and this was allowed to crystallize by the spontaneous evaporation of its solution. Large, transparent, brilliant crystals were thus obtained, which were permanent in the air and had the composition $Th(SO_4)_2(H_2O)$. For the estimation of the atomic weight a weighed quantity of the pulverized salt was heated to expel its crystal water, again weighed, and then again heated to a full white heat. The sulphuric oxide was entirely expelled, leaving the pure thorium oxide, which was again weighed. From the data thus obtained the atomic weight was calculated. Assuming the quadrivalence of thorium, the means of two series of observations are, respectively, 232·43 and 232·37.

Cleve, taking the mean of twelve experiments upon the synthesis of yttrium sulphate with pure material, proved to be free from terbia, has redetermined the atomic weight of yttrium to be $88·9 \pm ·027$, or, if $SO_3=80$, then $Yt=89·02$. The last figure suggests a fairly close conformity with Prout's law.

Clemens Zimmermann has prepared uranium by reducing a mixture of potassium or sodium with chloride of uranium, by heating in a charcoal crucible. Thus prepared, its atomic weight has been calculated to be 240, or greater than that of any other known metal. Uranium has the color and luster of silver, but is harder, and gives out sparks when struck with a hammer. It oxidizes gradually when exposed to the air, burns when heated on platinum-foil, and is dissolved by nitric acid. Its specific gravity has been determined at 18·7.

Analytic Chemistry.—The properties of hydrogen dioxide as an oxidizing agent have been found useful in a variety of analyses. It oxidizes arsenious acid to arsenic acid, and phosphorous acid to phosphoric acid, and decomposes hydrogen sulphide with the formation of water and free sulphur. If, however, it acts in ammoniacal solution, such as ammonium sulphide or sodium sulphide, the liquid becomes warm, and is gradually decolorized without deposition of sulphur; but that substance is instead oxidized to sulphates and hyposulphates. With sulphide of tin, antimonium and arsenic in ammonium sulphide, the addition of hydrogen dioxide causes oxidation of the ammonium sulphide, with at first precipitation of the other sulphides, ending, on the addition of an excess of the reagent and heating, in their more or less complete transformation into oxides. The conduct of hydrogen dioxide toward ammonium sulphide, or the action of hydrogen sulphide gas on ammoniacal hydrogen dioxide, may be employed in qualitative analysis for destroying an excess of those sulphides, and in quantitative analysis for determining amounts of gaseous or dissolved hydrogen sulphide, or for the determination of sulphur or metals in sulphides. The property of oxidizing hydrogen sulphide easily and completely in alkaline solution may be taken advantage of in the estimation of chlorine, bromine, and iodine in liquids containing hydrogen sulphide. Metallic sulphides which are oxidized directly by hydrogen dioxide may be estimated by the amount of sulphuric acid formed in the solution. Such metals are arsenic, antimony, zinc, copper, and cobalt. The estimation of metals by this means is capable of more extended application than the direct oxidation of the sulphide. Pure metallic sulphides are seldom obtained in analysis, but more frequently mixtures with free sulphur. The amount of free sulphur does not affect the quantity of hydrogen sulphide liberated by an acid, and hence the advantage of determining the latter. It is absorbed in a peculiar apparatus, described by the authors. Foremost among the metals that

may be conveniently determined in this way, are antimony, tin, cadmium, and iron.

A question has arisen in the examination of the various processes for the analysis of water, whether a loss of volatile organic matter may not occur during the evaporation and boiling which are necessary, particularly in the ammonia process. Mr. Charles W. Marsh has made experiments to determine this question, to which attention was more strongly directed, while the investigations were going on, by the observation by Prof. Ira Remsen of such a loss in his analysis of the Farm-pond water of Boston. Out of twenty-six analyses which he performed for this purpose by the Wanklyn process, the sum of the free and the albuminoid ammonias was equal to the "total ammonia" in only four. In one of the four the sum apparently exceeded the "total," betraying probably a slight error in the estimation. These results prove that something in the water escapes conversion into ammonia. To determine whether this was something that escaped condensation, or something that would be found in the distillate, ten other analyses were made, the distillates of which were redistilled with permanganate and nesslerized. It appeared in eight of the last analyses that the excess of ammonia obtained where the whole of the water was distilled with the permanganate directly, over the sum of the free and albuminoid ammonia as usually obtained, was due to some volatile, condensible, nitrogenous compound, from which as much ammonia could be obtained by the action of boiling permanganate after its distillation from the original water as before. A modification of the usual ammonia process is suggested by these experiments.

MM. Ed. Heckel and Fr. Schlagdenhauffen have made analyses of the kola-nut (*Stercularia acuminata*), and found that it is richer in cafeine than the most esteemed coffees, and that this base is all included in a free state, and not combined, as in coffee, with an organic acid; that it contains a very appreciable quantity of theobromine, which operates to augment the action of the cafeine; that a notable quantity of glucose, of which cacao exhibits no trace, is present; that the quantity of amidon is triple what it is in the seeds of theobroma; that fatty matter is much less abundant than in cacao; and that a specific tannin and a red coloring-matter are present.

The difficulties which have hitherto prevented the isolation of levulose in a satisfactory state of purity have been overcome by Messrs. Jungfleisch and Lefranc, who have succeeded in preparing the pure substance in crystalline form, and have studied its properties. Thus crystallized, it consists of fine, colorless, silky needles, which sometimes attain the length of ten millimetres, and usually radiate from a central point, forming spherical groups. When freed from mother-liquor and dried over sulphuric acid, their composition is represented by the formula $C_6H_{12}O_6$. When moistened with alcohol and exposed to the air, levulose is deliquescent, but when perfectly dry it is very slightly hygroscopic. It fuses at about 95°, and at 100° loses water gradually, yielding ether derivatives. Its rotary power varies very rapidly with the temperature, and varies in a still greater degree with the dilution of the solution.

Mr. Clifford Richardson, of the United States Department of Agriculture, has made a series of analyses of grasses of the United States, for the purpose of determining the relations of cultivated and wild grasses to each other, and the variations in composition which one species may present when grown on different soils and in different climates. His analyses embraced 77 of wild grasses, 21 of grasses from one farm in Pennsylvania, 19 of grasses from the grounds of the Department of Agriculture, and 6 of orchard-grass from various localities. Against the results he has placed, for comparison, the averages of those obtained by Wolff from the analyses of German grasses. The analyses plainly show that all our American grasses are strikingly different in composition from similar German varieties, chiefly in that the content of nitrogen is smaller, and the amount of fiber is diminished, while the amount of nitrogen free extract is larger, and the fat is slightly increased. The nutritive range in the American grasses is, then, much wider than in the German grasses. In the American grasses the wild varieties are of much less nutritive value than the cultivated sorts. The average composition of orchard-grass is not equal to that of the better-cultivated grasses, and the quality of the latter is improved as the cultivation is higher — a fact shown by the superior quality of the grasses grown in the highly-fertilized grounds of the department. The tables of the analyses also show that the amount of nitrogen in the non-albuminoid form is larger in the wild grasses than in the cultivated varieties, and that it varies somewhat inversely as the quality of the grass. In the analysis of a single species (orchard-grass), from different localities, it appeared that the amount of non-albuminoid nitrogen does not increase with an increase in the total amount of nitrogen in the grass, for the poorer species had more than twice as much, relatively to the total nitrogen, as the more cultivated ones; and the variations in the non-nitrogenous elements do not show any regularity dependent on climate and surroundings. Analyses of meadow fox-tail at four stages of growth showed that the total nitrogen diminishes regularly from early to late stages; that the albumen diminishes nearly in the same way, but remains constant for quite a long period at the time of blooming; and that the non-albuminoid nitrogenous substances, while decreasing rapidly from the first stage at which the grass was collected, to nothing at full bloom, increase again slightly after bloom. The fiber increases toward maturity, while the fat decreases. The substances making up the

"free-nitrogen extract" vary less regularly. Sugars appear in larger amount in the young plant than in the other stages. The same is the case with the organic acids.

Animal Chemistry.—Accompanying the formation of nitrogenous tissue in the vegetable organism, occurs a corresponding increase of phosphoric acid, and in the excretory products of the animal kingdom a definite quantity of nitrogen has been found to be accompanied by a relative amount of phosphoric acid. Again, when less nitrogen is excreted than is taken in the food, less phosphoric acid is also passed off, and from these data Kossel has inferred the existence of a compound of albuminous matter with phosphoric acid. The nucleins approach nearest to such a composition. Kossel has recently undertaken a quantitative determination of nuclein by estimating the nuclein-phosphoric acid.

His percentages of acid found in various tissues are always largest in the case of organs containing most cell-nuclei; thus, in the spleen of the ox was found ·636 per cent. of nuclein-phosphoric acid, in the liver ·390 per cent., and in the pancreas ·580 per cent., while in ox-muscle was found only ·092 per cent., and in human blood merely a trace. It has been suggested that the amount of nuclein might be determined from the quantity of its decomposition products, viz., guanine, xanthine, and hypoxanthine, but Kossel has found that the quantity of hypoxanthine, though in proportion to the quantity of nuclein in some organs, bears no such relation in the muscles; thus the muscle of the fowl yields much hypoxanthine, but has a very small content of nuclein. He also points out that the organs especially engaged in the nutritive and regenerative processes of the body contain far more phosphoric acid in the form of nuclein than the locomotor apparatus. Two so-called nucleins, those from cow's milk and the yolk of egg, which do not come from cell-nuclei, differ from those found in living tissue in yielding no xanthine, hypoxanthine, or guanine.

The exact chemical nature of the peptones has been much discussed, and no agreement of opinion has been reached upon it. In fact, the numerous results recorded are so strikingly at variance with each other that the theories on the subject have been, from time to time, very much modified. These differences may be partly accounted for by reference to the great diversity of conditions under which the experiments have been conducted. According to Herth's analysis, there is but little difference between albumen (Wurz's formula) and the peptone formed from it. From a great number of analyses of peptones prepared by fractional precipitation with alcohol and ether, Herth has drawn conclusions in favor of the individuality of the peptones, and infers that there is no ground for belief in the theory that they are a mixture of several closely-related bodies. Adamkiewicz concludes from his studies that chemically the peptones are nothing but albuminates which differ from ordinary albumen by containing a diminished content of inorganic salts and a somewhat different molecular formation, but the grounds on which he bases his view are controverted by Maly and Herth, who found no evidences of a materially diminished quantity of salts; and Aronson has shown that the uncoagulability of the peptones—their most striking feature—is wholly independent of inorganic salts. Herth concludes that the analytical data give no idea of the actual alterations which albumen undergoes in its transformation into peptones, and thinks it possible that a rearrangement of the atoms takes place; but he has few supporters. Henninger believes, after a long investigation, with Wurz and Hoppe-Seyler, that the formation of peptones is due to a process of hydration. He has also attempted to produce albumen again from his peptones by a process of dehydration, and has succeeded in forming syntonin, the next modification of albumen. This result has been confirmed by Hoffmeister, who has, by dehydrating fibrine-peptone and dissolving the product in cold water, obtained a flocculent residue showing all the reactions of albumen. Maly holds that there is only one principal product of digestion, one peptone, which differs but slightly from the mother-substance in composition. Kossel inclines to the belief that more than one peptone can originate from a single albumen, and that these bodies which we now term peptones do not actually possess a chemical individuality. As regards the nature of peptone, whether it is an acid or a base, the preponderance of evidence is on the side of its being an acid, while it is capable of acting both as an acid and as a base. Henninger regards the peptones as feeble amido acids, and, as such, capable of acting either as acids or bases. The combination of peptones with acids is formed directly whenever an acid is added to a solution of peptone, and the compound is a salt of the peptone corresponding to the acid employed. Peptones also combine with salts, forming a very loose union.

R. H. Chittenden has given an account of an examination for arsenic of a human body disinterred for the purpose nearly six months after burial, in order to ascertain the actual amount of poison in the whole body, and at the same time to glean all possible facts relative to its distribution. The analysis was performed by oxidizing a weighed amount of the sampled organic matter with nitric and sulphuric acids at elevated temperatures, and ultimately obtaining the arsenic and weighing it in the metallic state, the results being verified when possible by duplicate analyses. From the amount of arsenic found in the portion examined, the content of the entire organ or portion of tissue was calculated. By this method, the internal organs were found to contain 1·1694 grain of arsenious oxide, and the rest of the body 1·9498, making a total of 3·1192

grains for the whole body. A striking feature of the results was the irregular distribution of the arsenic in the muscular tissue, which varied from nothing in the bone up to a quarter of a grain per pound in the muscle of the back, whereas, in cases of chronic poisoning, or where arsenic is habitually used, the distribution is generally quite regular. The irregularity is regarded as indicative of the arsenic having been taken but a short time before death, particularly as the larger proportions of poison in the muscular tissue were observed in the parts nearer to the great vessels and organs. It is usual in cases of chronic poisoning to find a considerable proportion of the poison in the kidneys. In the present case only a small proportion was found there, while the tongue and throat contained nearly three times as much, or nearly as much as was contained in the entire left arm. It has been asserted that the presence or absence of arsenic in the brain is an index as to whether the poison was introduced into the body before or after death. The finding of arsenic in the brain may be regarded as proof that its introduction was not *post mortem*, but its absence can not be held to prove the contrary. The amount of arsenic found in the brain in the present case can be regarded only as indicating that it was taken in a form readily soluble and diffusible.

Passive and Active Oxygen.—Moritz Traube has published a discussion of the circumstances under which oxygen experiences the remarkable change of passing from the ordinary passive to the active condition. Considering the formation of hydrogen dioxide under the influence of the slow oxidation of metals in the presence of water and air, he concludes, from such experiments as he has made, that the process is not one of the oxidation of water, but a reduction process, in which the dioxide is probably formed by the addition of hydrogen directly to oxygen. Oxygen, at the ordinary temperature, is characterized by great passivity, but in the animal body it becomes active, and has the power of effecting oxidations at temperatures below 40° C. (104° F.), which it can otherwise effect only at a red heat. Regarded from this stand-point, the adult animal, which neither loses nor gains in weight, plays the part of a catalytic body, which, without suffering material change in composition, causes at low temperatures, by means of the oxygen of the air, the almost complete combustion of enormous quantities of food. Plants also, or, in general, all organisms down to and including bacteria and fungi, possess the same property, though to a much less extent; and there does not exist an organism which is indifferent toward oxygen. Herr Traube further assumes that he has pointed out, "with conclusive reasons," that the real hearth of the respiratory processes in animals is not the blood, but the tissues of the body, above all, the muscles; that the oxygen taken up in the lungs is set free in the capillaries of the body, and enters as dissolved gas into the tissues of the individual organs; and that in this way each individual organ breathes independently at the expense of the free oxygen. Thus, not only do organisms as a whole have the power to make oxygen active, but each of their organs, indeed each individual cell; or, rather, they contain substances which have the power. Hence the problem of active oxygen is in the highest degree important, as well for physiology as for chemistry.

Constancy of the Amount of Carbonic Acid in the Air.—Very careful determinations of the proportion of carbonic acid in the atmosphere at different places have been made by M. J. Reiset, with a particular view to answering the questions: For a given place is there more or less carbonic acid in the air on a clear day than on a cloudy day? Is there a difference in the proportion between day and night, or between winter and summer? Is there more or less carbonic acid at the bottom of a mountain than at the top? Is there more or less in the air near the sea than in the inland country? etc. His tests were made by the precipitation of carbonate of baryta by passing a known volume of air through a solution of baryta. His investigations have led to the conclusions that the maxima in the proportion of carbonic acid always correspond to cloudy, foggy, or misty weather; that air collected in the night contains more carbonic acid than that collected during the day, and that the minima of the acid correspond to days of fine weather, with bright sunlight and absence of clouds. Investigations to ascertain the effect of vegetation on the proportion were made difficult by the rapid diffusion of the gas in the air, and the variations were hardly appreciable. They indicated, however, a diminution of the proportion over growing fields. The presence of a flock of three hundred sheep near the apparatus on a certain day of fine weather, caused a notable increase in the proportion of the acid. A number of analyses were made near the Parc Monceau in Paris. During the month of May, when fires began to be extinguished, the mean was found to be 30·57 per 100,000 of air. The maximum, 35·16, was obtained on the 27th of January, 1879, during the period of most active combustion; the minimum, 29·13, was obtained May 31, 1875. The normal variations in proportion are generally between 28 and 30 per 100,000 of air, and are more sudden and more numerous during the summer. Determinations made by MM. Muntz and E. Aubin, in the city of Paris and in the open country near Vincennes, gave results substantially agreeing with those of M. Reiset, and indicate that carbonic acid is uniformly distributed throughout the lower strata of the atmosphere, while variations in the proportion occur only between very narrow limits, and are due to local influences. MM. Muntz and Aubin also applied their analyses to the upper strata, fixing their station

on the summit of the Pic du Midi in the Pyrenees, 9,422 feet above the sea. Notwithstanding that during the course of the experiments the direction of the wind and the state of the atmosphere varied frequently, the proportion was found to be constant, and to give as the mean of a large number of observations 2·86 parts by volume of carbonic acid to 10,000 parts of air.

A New Form of Phosphorus.—Messrs. Ira Remsen and E. H. Keifer, by distilling phosphorus in an atmosphere of purified hydrogen and condensing the vapor on cold water, obtained a white phosphorus, differing very greatly in appearance from ordinary phosphorus, which floated on the water in a snow-white layer about a quarter of an inch in thickness, and which was changed to ordinary phosphorus very easily, as by putting it into warm water. The white phosphorus thus obtained is light and plastic. If placed on a piece of bibulous paper, so that the water is absorbed from it, it gives off dense white fumes and melts, but does not take fire, and is then nothing but ordinary phosphorus. It dissolves readily in carbon bisulphide, and melts at exactly the same point as ordinary phosphorus, when it is transformed into it. It thus seems to bear the same relation to ordinary phosphorus as flowers of sulphur to roll-brimstone. It is also much less susceptible to the influence of light than ordinary phosphorus. Böttger describes another white phosphorus, which, however, appears to be quite different from this.

CHILI (República de Chile). The area of portions of Patagonia and the Tierra del Fuego, acquired by the treaty made between Chili and the Argentine Republic, at Buenos Ayres, on July 23, 1881, is estimated at 215,725 square kilometres, which would increase the area of Chili to 537,187 kilometres, without counting the province of Tarapacá, ceded to Chili by Peru in the treaty of peace made at Ancon, signed Oct. 20, 1883, and containing the ensuing stipulations:

1. Peru cedes to Chili, forever and unconditionally, the department of Tarapacá to the Quebrada de Camarones.

2. The territories of Tacna and Arica will, for a term of ten years, remain subject to Chilian authority. At the close of this term the vote of the people is to be taken in those localities, and direct suffrage to decide whether the same are to return to Peru or remain Chilian. In either case, the country to which they will thenceforth be definitively annexed engages to pay to the other an indemnity of $10,000,000.

3. Chili solemnly engages to carry out all the clauses in the treaty relating to the guano and nitrate-of-soda trade, and to pay over to the creditors of Peru 50 per cent. of the net proceeds accruing to the Chilian exchequer out of the working of these two products, until either the indebtedness is canceled or the deposits of said products are exhausted. Those discovered henceforward on the territory annexed shall be the exclusive property of Chili. Beyond this, Chili is not responsible for any Peruvian indebtedness.

4. As regards the island of Lobos, Chili is to continue administering the same until the expiration of the contract having reference to the sale of 1,000,000 tons of guano. The island shall then revert to Peru. Finally, Chili engages to cede to Peru, upon ratification of this treaty of peace, the 50 per cent. due the latter out of the net proceeds of the Lobos island guano-sales. The treaty to be ratified, and the exchange of ratifications to be effected at Lima within one hundred and eighty days from date. Till then Chili is authorized to maintain in Peru an army of occupation, toward the maintanance of which Peru engages to pay the general-in-chief $300,000 silver coin monthly.

A cable message, dated Lima, Jan. 8, 1884, stated that this monthly indemnity would be considerably modified in view of the financial condition of Peru.

A cable dispatch, dated Dec. 11, 1883, announced that the Bolivian commissioners had arrived at Santiago, Chili, and that forty-eight hours after their presentation a treaty of peace was signed between Chili and Bolivia. A brief sketch of the vicissitudes of the war in 1883, and its close, will be found under BOLIVIA.

On Jan. 1, 1882, the population of Chili was estimated at 2,228,434; a year later, at 2,239,180.

The capitals of the provinces were counted in 1882, and the number of inhabitants set against each is as follows: Santiago, 190,000; Valparaiso, 95,000; Talca, 19,000; Concepcion, 19,000; Chillom, 16,000; Cauquénes, 13,000; Serena, 13,000; Copiapó, 12,000; San Felipe, 11,500; Curico, 11,000; Linares, 8,000; Angeles, 8,000; Lebu, 7,000; Ancud, 6,000; Valdivia, 6,000; Angal, 5,000; Puerto Montt, 4,000; and Punta Arenas, 1,000.

The President of the Republic is Señor Don Domingo Santa-Maria, inaugurated Sept. 18, 1881, for the usual term of five years.

The Cabinet was composed of the following ministers: Interior, Señor J. M. Balmaceda, in office since April 12, 1882; Foreign Affairs and Colonization, Señor L. Aldunate, since April 12, 1882; Justice, Public Worship, and Instruction, Señor J. E. Vergara, since Sept. 18, 1881; Finance, Señor P. L. Cuadra, since April 12, 1882; War and Navy, Señor C. Castellon, since Sept. 18, 1881.

The Chilian Envoy Extraordinary and Minister Plenipotentiary to the United States is Don Joaquin Godoy, accredited June 23, 1882; the Chilian consul at New York is Señor D. de Castro.

The United States Envoy Extraordinary and minister at Santiago is Dr. C. Logan, accredited in 1882; the United States consul at Valparaiso is Mr. Lucius P. Foote.

Army.—Don Benjamin Vicuña Mackenna introduced a bill into the Senate creating one general of division and two brigadier-generals, for

the reason that, prior to the war, on Sept. 12, 1878, the force of the army did not exceed 3,122 men, that during the war the army of occupation alone counted 25,000, and that during the summer of 1883 the Chilian army still numbered 17,408 men, while the number of generals was the same as in 1878 and in 1854, when the army counted only 3,000 men. The regular army comprised, in 1882, 9 generals, 19 colonels, 77 lieutenant-colonels, 114 majors, 198 captains, and 562 lieutenants, together 979 officers; ten battalions (9,040 men), three regiments (1,500 men) horse, and two regiments (2,214 men) artillery; total strength of army, 12,921. The National Guard counts 31,113 men enlisted, 17,912 of whom perform service.

Navy.—The navy, in 1883, embraced two iron-clad frigates, one monitor, two corvettes, two gunboats, and two cruisers, carrying, together, 53 guns, having a joint tonnage of 10,611, and 3,260 horse-power—the whole equipped by 1,728 sailors.

The navy furthermore comprises two steamers, one transport, five pontoons, five small steamers, and eleven torpedo-boats.

Navy officers: One vice-admiral, four counter-admirals, eleven captains of ships-of-the-line, fourteen captains of frigates, twenty-two of corvettes, forty lieutenants, and forty-two enrolled cadets.

Finances.—The President, in his annual message, remarked with reference to the depreciation of the paper money in circulation in Chili, and the low ruling of it as compared with the exchange on Europe, that this unfavorable feature must be due in part to the general trade relations between Chili and foreign countries, the outstanding amount of paper money being comparatively small.

The latest report of the Minister of Finance renders an account of the actual workings of the Treasury in 1882. According to this document, the ordinary revenue reached the aggregate of $40,107,209, being an increase of $3,672,488 over that of 1881. The extraordinary revenue amounted to $1,849,825, thus increasing the income of the nation in 1882 to $41,957,035. As, at the same time, the ordinary and extraordinary expenditure did not exceed $41,620,137, there was an excess of receipts of $306,897. The budget for 1884 estimates the income at $44,365,000, and the outlay at $46,536,550.

Foreign Debt.—On Dec. 31, 1882, the foreign debt of Chili amounted to $34,878,000. The amount set aside toward the sinking fund for 1884 is $1,567,000. These sinking-fund operations have at no time, according to what the minister states, been less than 2¼ per cent. in a year, but in some years they reached 14½ per cent.

CHILIAN FOREIGN INDEBTEDNESS.

1870	$27,848,000	1877	$37,400,500
1871	27,079,500	1878	35,908,000
1872	26,282,000	1879	34,870,000
1873	36,818,500	1880	34,870,000
1874	25,689,000	1881	34,870,000
1875	30,168,000	1882	34,870,000
1876	35,809,000	1883	34,870,000

As nearly all the foreign loans have been contracted for railroad purposes, the minister appends to his report a statement of the actual value of the Government railroads on Dec. 31, 1882:

Line from Valparaiso to Santiago	$17,878,290
" " Santiago to Curicó	9,298,924
" " Curicó to Angol	8,198,818
" " Chillan to Talcahuano	4,795,904
Total	$40,171,846

The Minister of Finance has appointed a committee of investigation to report on existing mining laws, and a revision of the same. The committee is to give its opinion on the ensuing queries: Whether it is advisable to create a national mining bureau; if so, the committee is to suggest what sphere of action should be assigned to it, and where it should have its seat; whether the export duty on mineral products should be modified, and to what extent the import duty on mining material and sheet-iron, examining at the same time to what extent the public revenue would be affected by such changes; what new privileges may be safely extended to mining industry so as to foster its development; to what extent transportation should be increased and perfected between the mines and the coast. Finally, the committee is ordered to procure complete statistics bearing on every branch of mining industry in all its details. The minister feels confident that great results will be reached if this important branch of the public wealth receives the attention it deserves at the hands of the Government and people of Chili, and for this purpose the bureau is proposed to be created.

Another committee has been appointed to lay down the basis for a revision of the tariff, the members of the committee being merchants of leading nationalities.

National Legislation.—A bill was passed to secularize the cemeteries, which caused a great deal of commotion among orthodox Catholics, especially the female portion thereof, and at Santiago the ladies personally petitioned the President *en masse* to intercede in behalf of threatened faith while the bill was under debate. Other bills elicited almost as much interest among the public at large, among them one reforming public instruction, another legalizing civil marriage, one granting certain privileges to parties building a dry-dock at Valparaiso, one creating the new province of O'Higgins in the department of Rancagua, one ordering a special medal to be struck to reward the soldiers participating in the crowning victory of the war, the battle of Huamacucho, of July 10, 1883; finally, a pension bill in favor of all soldiers who fought on the Chilian side in the late war.

On the other hand, the Senate rejected the bill limiting the coastwise trade to the Chilian flag.

Railroads.—In 1882 the total length of government lines was 949 kilometres (equal to 598

miles), and of private lines 906 kilometres (equal to 571 miles); together, 1,855 kilometres, or 1,169 miles.

Postal Service.—The number of post-offices, in 1882, was 370, forwarding during the year altogether 10,204,097 letters, 19,950 sample packages, 13,786 legal documents, 493,572 government dispatches, and 11,046,534 newspapers; together, 21,777,939 items of mail matter, the gross amount of postage collected being $378,749.

Telegraphs.—The telegraphic service was, in 1882, carried on in 136 offices, 127 of which were under government management; the total length of lines was 9,493 kilometres (equal to 5,981 miles), of which 8,943 kilometres were government lines. The number of messages sent was 433,475; of these 159,999 were government dispatches, and 273,476 private. The gross amount collected for telegrams was $378,749.

Immigration.—To hasten the settlement of Villa-Rica, the new city founded in the center of the Indian territory of Araucania, now being civilized, the Government has made a contract with Don Francisco de B. Echeverria for the introduction from Europe of 2,000 families from the Basque provinces of Spain. Meanwhile the agent of Chilian colonization in Europe has contracted for the immigration into Chili of numerous families belonging to the farming class in Germany.

College Reforms.—The Minister of Public Instruction is elaborating a reform project for the School of Arts and Trades at Santiago, preference to be given to the more practical branches of education in that college, and for this purpose, professors and machinists of note are, if possible, to be engaged abroad, and machinery, etc., is to be procured for practical demonstration.

Trade-Marks in Chili.—Chili provides for the protection of trade-marks both to residents and foreigners. The registry of the marks is inscribed on the register of the office of the National Society of Agriculture. The Chilian definition of a trade-mark is somewhat vague, and is comprised under the two heads, trade-marks applied to articles as products of industry, and marks applied to objects of traffic, the one relative to marks indicating ownership, as concerns the manufacturer, and the other that of distinctive ownership on the part of the dealer. The registry must be renewed every ten years.

New Pass over the Andes.—The recent discovery of a pass across the mountain-chain which divides Chili from the Argentine Republic may possibly exert an important influence upon the future of South America. This pathway has long been known to the Indians of the mountain-region, but they have hitherto kept it a secret. For more than 1,000 miles the Andes extend between Chilian and Argentine territory, at an average elevation of 13,000 feet above sea-level. When the dispute in regard to the possession of Patagonia, a few years ago, threatened to bring the two republics to blows, it was seen that any war between them must be fought out at sea, the passage of the Andes, by any openings then known, being impossible against a hostile force. An Argentine army, to maintain itself at all, would have needed to emerge from the mountains upon Chilian soil somewhere near its objective point —that is to say, Valparaiso and Santiago, which are comparatively near each other, and would be included in any plan of invasion. The practicable passes thus became limited to the Patos and the Cumbre, for those farther north would not only give an invading army a dangerously long line of communication with its base, but are too difficult of ascent, and in some cases are approached over barren regions. The only pass to be seriously thought of, in fact, was La Cumbre, which is almost opposite Valparaiso, or on the same parallel; and yet its height, its extreme narrowness for many miles, its continued windings and abrupt ascents, would make it defensible by 1,000 good men against an invading army from either side.

But the newly discovered Bariloche Pass, being near Lake Nahuelhaspi, puts an entirely new face on the question of transandean communication. It is situated where the continent, narrowing greatly, forms the peninsula of Patagonia; it is approached easily across the pampas, and from the westernmost Argentine post at Nahuelhaspi the distance is only a few score miles to the Pacific coast.

The commercial importance of this pass, however, far outweighs all military considerations. The two enterprising republics have removed their only serious source of dissension by a peaceful division of Patagonia, and henceforth the one can pursue its development as an Atlantic and the other as a Pacific country. Both have long sought railroad communication across the Andes. One such road, in fact, has already been undertaken between Buenos Ayres and Santiago, designed to pierce the mountains by way of Mendoza, through one of the passess already spoken of. The extreme difficulties of this route have impeded its construction; but a road starting from the Gulf of San Matias and crossing northern Patagonia through the Bariloche Pass would have only half the length of the more northerly route, and would traverse a region where the peculiar relations of the mountains to the two oceans cause the storms to be usually of rain rather than snow, the route being in about 42° S. lat., and hence in a temperate climate. The great drawback seems to be that it traverses a region infested with hostile Indians.

Of course, a most important consideration is the exact height of the new pass; but since it is known that the Andes in Patagonia fall off to an average altitude little more than half that of a few miles farther north, the route seems certain to yield advantages in this particular.

Agriculture.—M. A. F. de Fontpertuis writes about the economical condition and agricultural and mineral resources of Chili, in an article published in the "Économiste Français": Out of the 2,200,000 inhabitants more than two thirds are agriculturists; and the eight central provinces, Santiago, Colchagua, Curicó, Talca, Maule, Linares, Nuble, and Concepcion, alone contain a farming population of 1,400,000 souls. While the country between Valparaiso and Santiago resembles the plains of northern Italy, the resemblance is merely superficial, for even in its best portions the soil of Chili is poor; immense plains are uncultivated, and the methods of culture are most primitive, being in this respect the very reverse of those in use in northern Italy. In both countries there is a lack of rainfall, and they have to resort to irrigation. The destruction of forests has been such in Chili that in some regions on the coast there are during a year 335 days of drought, 12 days of a light and 18 days of a heavy rainfall. The plain of Chili, it is true, is traversed by numerous water-courses, such as the Rio-Bio, Chillan, Maule, Nuble, and many more, receiving their water from the snow of the Andes, but their fertilizing action is limited to a restricted area, and the art of irrigation is only properly understood in the more northern provinces, Talca and Curicó. Out of 34,245,500 hectares of land only 7,891,200 are arable, and of these only one seventh is under culture, and even in this portion cultivation is to a notable extent slothful. Democratic economists in Chili attribute this state of affairs to the large land-holdings by descendants of the conquerors, and insist, not without some reason, that these large "hacendados" or landed proprietors have been a calamity for Chilian agriculture. Fortunately, some time ago the law of primogeniture was abolished, and since then landed property gets to be gradually better distributed among the farming population. This change has also had the good effect of causing many of the large proprietors to settle down on their lands and cultivate them, instead of living in luxury at the capital. Yet there have been till now comparatively few small prosperous farmers, and the system of long leases has not even yet been introduced.

Mining.—Copper is found in a great many localities, especially in the provinces of Coquimbo, Aconcagua, Santiago, Nuranco, Chiloe, and in Atacama, although in the latter two gold and silver predominate. Caldera is the chief port of the last-named province. Copiapó, its capital, is in the center of a long, narrow valley, which might be fertile if it were not so badly irrigated, and surrounded by many silver-mines partially abandoned because exhausted. The richest mines were formerly the Charnacillo, turning out, during the comparatively short period of 47 years from 1832 to 1879, no less than $240,000,000 worth of pure silver, but these are now nearly exhausted. They have been worked to a depth of 1,800 to 2,200 feet. The amalgamating of silver-ores is carried on in great establishments at and near Copiapó.

Nitrate.—The belief prevailed for a long time that the province of Tarapacá was the only portion of the Atacama desert producing nitrate enough to make it worth while exporting the same, but the high taxes imposed by Peru caused explorers to prospect the southern portion of the desert in Bolivia and in the northern part of Chili. In this manner the nitrate deposits at Antofagasta were discovered, and a great impulse was given to the nitrate industry there; but the rivalries arising led to the late war.

Commerce.—Chilian foreign commerce nearly doubled during the four years following 1878:

	Total foreign trade.	Increase.	Increase per cent.
1878	$63,929,075		
1879	65,416,184	$1,487,109	2·32
1880	87,195,718	21,779,734	33·20
1881	108,878,163	21,682,245	24·86
1882	124,873,340	15,995,177	14·69

IMPORT.

	1882.	1881.
By sea	$51,441,372	$45,203,868
Overland	2,060,842	1,770,043
Total	$53,502,214	$46,973,931

EXPORT.

	1882.	1881.
Products of the mines	$56,187,670	$47,145,757
Products of agriculture	11,688,418	9,967,780
Sundry merchandise	318,088	370,394
Re-export	997,674	1,459,651
Goods "in transitu"	1,092,779	1,378,373
Specie and bullion	1,194,507	1,582,277
Total	$71,374,126	$61,904,232

Chilian custom-houses yielded in 1882 the ensuing amounts of revenue:

Import duties collected	$11,802,500
Ten per cent additional	689,348
Export duties	609,608
Wharf-dues	182,208
Light-house and tonnage dues	71,907
Seizures and fines	4,581
Difference in exchange collected	1,493,845
Export duty on nitrate of soda	7,592,385
Total	$22,396,272

THIRTY-EIGHT YEARS OF CHILIAN FOREIGN TRADE.

	Average annual import and export.	Per capita of the population.	Increase per cent.
1844–1853, 10 years	$21,000,000	$19	
1854–1863, 10 "	39,000,000	27	90
1864–1873, 10 "	57,000,000	31	46
1874–1881, 8 "	73,000,000	35	28

Anglo-German Competition.—A French merchant reports from Iquique under date of May 15, 1883: "Although French goods are generally very much liked in Chili, the trade between France and this coast has notably declined dur-

ing the past twenty years, while Anglo-German merchants, more active than French, have succeeded in substituting their manufactures for ours. But this is not the only success which English and German merchants can boast of: with abundant means and good European banking connections at their disposal, they have boldly gone into the nitrate industry and exportation, so that the bulk of this article now goes to Liverpool and Hamburg. Nor is this due to any very great superiority of theirs in the way of steamship lines, for we have our fine Havre line of steamers regularly touching at all ports on the west coast. The causes for this decay of French trade in this direction lie deeper, and we have to search for them in France, where both merchants and manufacturers trouble themselves too little about the changes going on in these distant countries on the Pacific, and, instead of establishing branch houses or agencies in them, and thus pushing the export trade to them, they cling to time-worn methods, and are thus ousted from connections once valuable."

EXPORT OF NITRATE OF SODA DURING THE FIRST TEN MONTHS.

	1883.	1882.	1881.
	Quintals.	Quintals.	Quintals.
To the north of Europe....	8,339,898	7,299,715	4,548,264
" Mediterranean.....	167,206	120,074	85,126
" United States, Atlantic coast.....	769,194	909,778	879,437
" United States, Pacific coast.....	157,390	140,289	125,985
Total.....	9,433,678	8,469,856	5,588,812

Chilian Trade with England, France, and the United States.—The import from Chili into the United States in 1881 was $1,435,970 worth of goods against $13,288,071 from Chili into England, and $5,478,793 into France, while the export from the United States to Chili was $1,614,836, from England $13,075,526, and from France $6,364,464. In 1882 the import from Chili into the United States was $1,810,487, and the export from the latter to the former $1,774,-645 worth of goods.

During the fiscal year ended June 30, 1883, the United States imported from Chili only $435,584 worth of goods, specie, and bullion, and exported thither $2,837,551 worth of domestic goods and $22,945 foreign ditto. This shows an extraordinary increase of domestic exportation from the United States to that country in a single twelvemonth.

During the fiscal year ended June 30, 1882, the United States imported from Chili 67,018,-386 pounds of nitrate of soda, and 2,534,219 pounds of wool, and exported thither of domestic goods 5,259,858 yards of cotton goods; $304,335 worth of machinery and hardware; 1,188,700 gallons of petroleum; 567,560 pounds of lard; 373,585 pounds of refined sugar, and $263,687 worth of lumber and wooden-ware, besides numerous other articles.

Merchant Marine.—There were sailing under the Chilian flag, in 1883, 131 sea-going vessels, of a total tonnage of 53,070, comprising 27 steamers, which aggregated 12,512 tons.

CHINA, an empire in Asia, officially called Chung Kwoh ("The Middle Kingdom"). The Government is organized on patriarchal principles laid down in the books of Confucius and other ancient sacred writings. The supreme power is vested in the Emperor. There are two high advisory bodies which guide the policy of the Emperor. One is the Neko, or Inner Council, consisting of four members and two assistants, who see that the enactments are in harmony with the laws of the sacred books. Two of the active members and one of the juristic assistants must be chosen from the Manchu, and the other half of the Council from the Chinese race. Under the supervision of the Neko are the six boards of government, which have charge respectively of the civil service, finance, ceremonies, the army, justice, and public works. The practical direction of affairs has passed into the charge of a body called the Council of State (Chun-chi-chu), which is free from the rigid constitution and procedure of the Neko. The same men are often found in both councils, and also serving in some of the six ministries or other high charges of state. Besides the six ministries, there is a board of censors, whose duty it is to investigate all the departments of state and review the acts of government; a ministry for the administration of the dependent states; the military administration of Peking, which also superintends the police service; and an office for the administration of foreign affairs. The eighteen provinces have each a governor, who in the case of most of them is subordinated to a governor-general placed over two or three provinces.

The Emperor is Kwangsu, the ninth ruler of the Tartar dynasty which conquered China in 1644. The law of succession prescribes that each Emperor shall appoint his successor from among the sons of the princes of the royal house. Kwangsu was not regularly appointed, the late Emperor having died suddenly, but was by the management of the Empress dowager and his father, Prince Kung, proclaimed Emperor, Jan. 22, 1875, in the fourth year of his age.

The members of the Council of State are Prince Kung, Pao Yun, Li-hung-tsao, Ching-lien, and Weng-tung-ho. The Prince Kung is president of the ministry for foreign affairs.

Area and Population.—The total area of the eighteen provinces is 1,534,953 square miles, and the total population, as given in the latest official returns, 362,447,183, being 236 per square mile. The density of population in the province of Kiangsu is as great as 850 per square mile; in Anhwei, 705; in Chekiang, 671; in Pecheli, the capital province, 475; in Shantung, 444. The least thickly inhabited provinces are Szechuen, with 128 inhabitants per square mile, Kwangsi with 93, Kwei-

chow with 82, Yunnan with 51, and the great province of Shenking with only 10 persons to the square mile.

The dependencies of China, not including Corea, which is practically independent in its internal and external affairs, subject to a suzerain control that is kept almost entirely in abeyance, have an estimated area and population as follow:

DEPENDENCIES.	Square miles.	Population.
Manchuria	362,313	12,000,000
Mongolia	1,288,035	2,000,000
Thibet	642,734	6,000,000
Jungaria	152,953	600,000
East Turkestan	431,800	580,000
Total	2,878,835	21,180,000

The greater part of the Ili, or Kulja, territory in Jungaria was receded to China by the treaty concluded with Russia, Feb. 24, 1881, but 4,340 square miles were annexed to Russia, which received also 8,120 square miles on the Black Irtysh.

The population of Peking, the capital, is estimated variously at from 500,000 to 1,650,000. Several cities in the interior are supposed to contain over 1,000,000 inhabitants. The estimated population of the treaty ports is as follows: Canton, 1,600,000; Tientsin, 950,000; Foochow, 630,000; Hangchow, 600,000; Shanghai, 350,000; Ningpo, 260,000; Takao and Taiwan, 235,000; Nanking, 150,000; Chinkiang, 135,000; Amoy, 95,600; Tamsui, 90,000; Wenchow, 83,000; Kelung, 70,000; Niuchwang, 60,000; Wuhu, 60,000; Kiukiang, 53,000; Chefoo, 35,000; Ichang, 34,000; Swatow, 30,000; Kiungchow, 30,000; Pakhoi, 25,000.

The number of foreigners residing in the treaty ports in 1882 was reported as 4,894, of whom 2,402 were English, 474 Germans, 472 Japanese, 410 Americans, 335 French, 202 Spaniards, and 599 of other nationalities.

Commerce and Agriculture.—The annual value of the foreign commerce for the past six years was as follows, in taels (1 Haikwan tael= $1.50):

YEAR.	Imports.	Exports.
1877	73,233,896	67,445,022
1878	70,804,027	67,172,179
1879	82,227,424	72,281,262
1880	79,293,452	77,883,587
1881	91,910,877	71,452,974
1882	77,715,228	67,336,846

The imports in 1882 from Great Britain, Hong-Kong, East India and other British possessions amounted to 67,640,000 taels; the exports to Great Britain and British dependencies to 40,301,000 taels; the imports from the United States to 3,277,000 taels, as against 3,300,000 in 1881; the exports to the United States to 8,420,000 taels, as against 10,222,000; the imports from Continental countries, not including Russia, to 2,484,000 taels; the exports to Continental Europe to 8,752,000 taels; the exports to Russia by ship to Odessa, 946,000 taels, overland *via* Kiachta, 3,286,000 taels; imports from Japan, 4,442,000 taels; exports to Japan, 1,767,000 taels; imports from and exports to other countries, 1,644,000 and 3,865,000 taels respectively. The main part of the import trade is through Shanghai, which does also the largest export trade, Canton coming next, and after it Foochow and Hangchow.

The following table gives an analysis of the foreign trade of 1881 and 1882, showing the values imported and exported of the different classes of merchandise, in taels:

IMPORTS.	1881.	1882.
Opium	37,590,000	26,746,000
Cotton goods	26,046,000	22,707,000
Woolen goods	5,854,000	4,496,000
Metals, and manufactures of	4,829,000	4,701,000
All other	17,590,000	19,065,000
Total	91,911,000	77,715,000

EXPORTS.	1881.	1882.
Black tea	26,201,000	25,878,000
Green tea	5,107,000	4,091,000
Brick tea	1,468,000	1,804,000
Silk and manufactures	26,868,000	22,837,000
Sugar	2,584,000	3,013,000
All other	9,225,000	10,124,000
Total	71,453,000	67,337,000

Chinese trade has suffered for a year or two from various causes. In 1882, in consequence of excessive speculation in joint-stock enterprises, occurred a financial crisis. Interest rose at times in 1882 to 30 and 35 per cent. Many failures happened in consequence. The imports of gray and white shirtings were less by a million pieces than in 1881, and prices were 10 per cent. lower. Opium imports fell off 9,000 chests. The reformatory efforts of the Chinese Government and the use of the Szechuen product have nearly expelled the Indian drug from northern China. The quantity imported at the northern ports was but little more than a third as much as in 1879. The yield of silk has fallen off to an alarming extent. The cause is supposed to be the ravages of a disease of the silk-worm similar to that which prevails in Europe. The falling off was considerable in 1882; but in 1883 the quantity fit for export was not more than half as much as in average years. The cultivation of the sugar-cane is extending in southern China in the country back of Amoy, Swatow, and Canton, and on the island of Hainan and the southern part of Formosa. The exports of sugar go mostly to Australia and Japan. In certain districts along the East river as much as 40 per cent. of the area is planted to sugar, exciting the anxiety of conservative native economists, who see the more necessary rice-culture neglected for the more profitable new product.

In 1882, notwithstanding the general depression in trade, there was a further development of the tendency which first showed itself a year or two before, on the part of Chinese

native merchants and capitalists, to invest in enterprises carried on by foreign companies. Companies were started with native capital, under purely native management, for the working of coal, copper, and other mines. The numerous projects started in this speculative period include also gold and silver mining, and paper, glass, and cotton manufactories. Chinese capital was invested even in remote enterprises carried on by foreigners in Perak, North Borneo, Selangor, and Colorado, and much of it was consequently lost.

Navigation.—The movement of shipping in Chinese ports is shown in the following table, which gives the number and tonnage of the vessels arriving and of those sailing under each flag, added together:

FLAG.	1881.		1882.	
	Vessels.	Tons.	Vessels.	Tons.
British	13,416	10,332,248	14,337	10,814,779
German	1,632	728,027	1,864	862,856
American	870	224,730	762	167,801
French	103	135,734	192	172,881
Japanese	227	185,892	250	194,534
Chinese	6,297	4,767,188	6,429	4,775,969
Other	642	266,464	895	380,432
Total	23,187	16,640,278	24,729	17,358,852

Of the total number of ships entered and cleared in 1882, 19,607, of an aggregate tonnage of 16,102,574, were steamers, against 18,170, of 15,350,954 tons, in 1881.

Communications.—The only railroad in 1882 was one eight miles long, running to the Kaiping coal-mines. Besides short local lines, there was completed in 1881 a telegraph line from Tientsin to Shanghai, 950 miles. A line from Shanghai to Canton was under construction in 1883.

Finance.—The accounts of the Imperial Government are not made public. The approximate yield of the various sources of revenue is estimated as follows:

SOURCES OF REVENUE.	Taels.
Land-tax	18,000,000
Land-tax paid in kind	18,100,000
Likin (new impost on merchandise)	20,000,000
Customs under Administration of Progress	12,000,000
Customs under native administration	3,000,000
Salt	5,000,000
Sale of titles of rank	7,000,000
Other sources	1,400,000
Total	79,500,000

In 1882 the European custom-house administration collected import duties to the amount of 4,684,007 taels; export duties, 8,068,435 taels; pilotage, 740,078 taels; tonnage dues, 279,799 taels; transit toll, 313,353 taels—total, 14,085,672 taels.

The Chinese Government raised a foreign loan of 13,500,000 taels in 1874. Of this 7,000,000 taels have been repaid. There are domestic debts amounting to 30,000,000 taels.

Army and Navy.—The army has been divided since the Manchu conquest into the Banner army and the Green Flag militia. The former, recruited from an hereditary military class, and constituting the garrison with which the Tartar conquerors long held the country in unwilling subjugation, is the most efficient branch, and may be considered as the regular army of China. Much attention has been paid in recent years to the improvement of its organization, training, and equipment. First American and French, and subsequently British military men, have been its instructors in tactics. The Bannermen are divided into three branches, one recruited from the descendants of the Manchu army, one from their Mongol and one from their Chinese allies who helped conquer China. The Manchus are the most numerous, and are the subjects of the greatest care, as the majority of the officers and of the Board of War belong to this race. Their efficient force is 67,800 men, that of the Chinese or Hankiun Bannermen 27,000, and that of the Mongols, 21,100—making altogether 115,900 men. Of these, about one half are stationed in the Pecheli province, and the rest distributed through the empire to form the Tartar garrisons in the chief cities. The war strength of the Banner army can be largely augmented, since there were five times the present numbers on the rolls thirty years ago. The Chinese Government has further fighting material at its disposal in the frontier tribes and the Mongols of Mongolia, who alone can be levied on for 200,000 men, one third of them mounted. The national militia, or Green Flag troops, have formerly been discouraged by the military caste, and are still kept in a state of military inefficiency through the not groundless fears of the Peking Government of the danger of the dynasty from a powerful national army. For many years Li Hung Chang has devoted great pains to the training of the Tartar force in the capital province by European tacticians. About 70,000 troops have thus been made capable of rapid military movements. The number of troops in the empire who are trained in the European way, and armed with modern weapons, is between 100,000 and 200,000. The forts which guard the approaches to the capital are defended by a large number of Krupp and Armstrong guns.

The Chinese Government some time ago acquired several European naval vessels, and has recently been at great expense to secure others of a more perfect type, which are being constructed at Kiel. In 1880 the fleet contained two frigates, a corvette, and 47 gunboats, with transports and smaller craft—the total armament consisting of 283 guns.

Political Situation.—The diplomatic dispute with France regarding the suzerainty of China over Annam absorbed the attention of the ruling powers in China in 1883 (see TONQUIN). Li Hung Chang, the liberal minister, who has had much to do with guiding the foreign policy of China for several years past, was recalled by the Empress Regent from the three years' seclusion into which he had just entered to mourn the loss of his mother, according to the

national custom. After the failure of the negotiations of M. Tricou at Shanghai, the direction of the Tonquin business passed out of the hands of Li and the peace party into those of Prince Kung and the anti-foreign court party, who opposed a bolder and more resolute resistance to the demands of France.

Canton Riots.—In September serious anti-European riots broke out in Canton. The Chinese are accustomed to see crimes punished with extreme severity, while the foreign consuls are loath to enforce rigorously the laws of their own countries when dealing in the exercise of extra-territorial jurisdiction with acts of violence committed upon Chinamen by Europeans. The populace of Canton were already excited to a dangerous pitch by the news of the French repulses in Tonquin and the warlike attitude of the Peking Government, when two flagrant instances of shielding Europeans from justice wrought them into fury. An Englishman, an official in the Chinese custom-house, fired a gun into a crowd of Chinese who were making a disturbance, killing one native and wounding two others. The Chinese were excited over a rumor that this man, whose name was Logan, was being screened, and, as in many previous similar cases, would escape the consequences of his crime. A day or two later a Portuguese sailor from a British ship killed a Chinaman. In this case the consul refused to arrest. When the embittered people saw the vessel depart with the homicide on board, September 10th, they pushed in a great crowd to the foreign quarter and attacked stores and houses. The merchants armed themselves with rifles, and fired a volley into the crowd, killing five and wounding many others. This rendered the mob more desperate, and they plundered and set fire to fourteen warehouses, English, German, French, and American, and four dwellings, and only ceased upon the arrival of the Chinese troops. Tumultuous crowds gathered the next day, but committed no further acts of violence. The foreign residents had fled on board vessels in the harbor. After the arrival of two British, one French, and five Chinese gunboats, they returned to their homes. The Chinese authorities thereafter preserved order in Canton, but the irritation continued. The condemnation of Logan to seven years' imprisonment for manslaughter was to the minds of the Chinese equivalent to his escape.

Floods.—China suffered in 1883 from inundations which caused great suffering and loss of life. The Yellow river burst through the embankments and overflowed the lower country over hundreds of square miles. The country surrounding Tientsin and lying between that city and the capital was also flooded by the overflow of the rivers. The Government made considerable grants of rice to the homeless and starving peasantry, and encouraged private donations by offers of brevet rank. A scheme for the improvement of the protective works on the Yellow river has been adopted by the Government. The execution of a more thorough system of stream regulation for the Yellow river in accordance with the principles of modern engineering would avoid for the future the periodical disasters in this country which have occurred since early times.

CHRISTIANITY, Growth of.—On the day of Pentecost, the number of converts to Christianity was 3,000. At the end of the first century the number had reached 300,000. In the year 323, when the Emperor Constantine was converted and began to encourage Christianity and suppress heathenism, the number of Christians was 10,000,000; at the latter part of the sixth century, 20,000,000; at the close of the eighth century, 30,000,000. During the next two centuries the growth was 20,000,000, making 50,000,000 at the close of the tenth century. Then from the close of the tenth to the close of the eleventh century the gain was 20,000,000, making the number, at that date, 70,000,000. The next hundred years witnessed a growth of 10,000,000. Thus, for about thirteen hundred years there had been a steady gain, and the number now reached 80,000,000. But during the next century there was a decline of 5,000,000; then followed, for the same period, a similar gain, making the number at the close of the fourteenth century the same as at the close of the twelfth, viz., 80,000,000. In the days of Luther the number reached 100,000,000. Thus, from the tenth to the fifteenth centuries the number of Christians had doubled. At the close of the eighteenth century the number had again doubled, i. e., became 200,000,000. From 1800 to 1880 the number again doubled, reaching 400,000,000. Hence we see that the last three periods in which Christianity doubled were 500 years, 300 years, and 80 years, respectively. These figures include all nominal Christians, comprising the Greek, the Roman Catholic, and the Protestant churches. From 1800 to 1880 it is estimated that the Greek Church gained 25 per cent., the Roman Catholic Church 80 per cent., and the Protestant 170 per cent.

In 1792 William Carey originated the modern foreign missionary movement. He became a great Oriental scholar, and lived to see the Bible, in whole or in part, spread among the people of India in forty dialects. He aroused an active missionary spirit among the English Baptists, and his dictionaries, grammars, and other works, in the Bengalee, Sanskrit, and other tongues of India, not only prepared the way for the rapid spread of the gospel, but also brought him distinguished honor from the British Government. Since the days of Carey, Christianity has advanced in India, China, Japan, Africa, and in other fields, with remarkable rapidity. The number of Christ's followers at this date (1883) is, without doubt, 450,000,000. The converts in foreign fields are now numbered by hundreds of thousands, and are gaining rapidly every year. In 1830 there

were only 50,000 Christians in heathen lands; now there are more than 2,000,000. In 1830 the Bible was read in 50 languages and dialects; now in 250, and 150,000,000 Bibles are in circulation. In 1813 Judson arrived in Burmah, and in 1819 he baptized the first convert. In that province to-day there are 25,000 communicants, and about 76,000 adherents to the faith. In 1850 there were in India about 14,000 communicants, and 91,000 nominal Christians. To-day there are 114,000 communicants and about 420,000 nominal Christians. In the province of Madras, ten years ago, the number of Christian adherents was 161,000; to-day the number is 300,000. And throughout India, China, Africa, and other lands, the gospel is spreading at a rate never equaled since the days of the apostles. According to Gibbon, imperial Rome, at the time of her greatest extent, ruled about 120,000,000 people; but to-day Christian nations govern 650,000,000.

While the progress of Christianity has been very marked throughout the whole world, in the United States, where it has had an open field and perfect freedom, its gain has been greater than in any other land. During the past eighty-three years—and particularly during the past three decades—the growth has been more rapid than in any former period. Eighty years ago students in Yale and Harvard Colleges were accustomed to call themselves by the names of French and German infidels. In Yale College, infidel students used to combat President Dwight with their views in the class-room. Only a very small portion of the students in the colleges of the country at that time were church-members. In 1745 there were only four church-members among the students of Yale. But a wonderful change has taken place in that college since.

From 1870 to 1880 Harvard graduated over 1,400 young men, and only two of the number registered themselves as "skeptics." In 1830 26 per cent. of the students of New England colleges were church-members. In 1880, out of 12,063 students in sixty-five colleges in the United States, 50 per cent. were professors of religion. In 1800, the population of the United States was about 5,000,000, and the number of communicants in the various churches was 364,000, averaging one to fifteen of the population. In 1880, with a population of 50,000,000, the number of communicants was over 10,000,000, averaging one to five of the population. These numbers include the communicants in Protestant churches alone. In 1800 there was about one clergyman to every 2,000 of the population. In 1880 there were 69,870 ordained ministers in the Evangelical churches of the United States, averaging one to every 720 of the population.

From 1850 to 1880 the increase of the Roman Catholic population (not enrolled communicants) was 4,753,000. During the same period the increase in the number of communicants in the Protestant churches was 6,500,000. In 1850, in Boston, Mass., and vicinity, within a radius of ten miles, there were 19,838 communicants in the Baptist, Congregational, and Methodist churches combined. In 1880 the membership of those churches had increased to 45,752, being a gain of 230 per cent.

From the year-books of the principal denominations in the United States we gather the following general summary for 1883:

DENOMINATIONS.	Ministers.	Church-members.
Adventists	107	11,100
Adventists, Second	501	63,500
Adventists, Seventh-Day	167	17,169
Baptists	17,090	2,894,742
Baptists, Anti-Mission	400	*40,000
Baptists, Free-Will	1,258	77,927
Baptists, Christian Order, etc.	600	*33,000
Baptists, Seventh-Day	103	8,611
Baptists, Six-Principle	16	1,450
Baptists, German (Tunkers)	1,578	60,000
Baptists, Church of God	450	45,000
Congregationalists	3,723	387,619
Christians, Northern	1,240	76,000
Christians, Southern	28	8,000
Disciples of Christ (Campbellites)	3,782	591,821
Episcopal, Protestant	3,579	344,388
Episcopal, Reformed	85	6,811
Friends, Orthodox	200	56,000
Friends, Unitarian (Hicksite)	...	*40,000
Lutherans, German Evangelical (State Church of Prussia)	430	80,000
Lutherans, General Synod	847	128,229
Lutherans, General Council	849	235,202
Lutherans, General Synod (South)	141	18,362
Lutherans, Synodical Conference	1,117	288,117
Lutherans, Independent Synods	475	116,077
Mennonites	450	*80,000
Methodist Episcopal, North	11,294	1,799,593
Methodist Episcopal, South	4,045	867,375
Methodist Episcopal, African	2,051	391,044
Methodist Episcopal, African, Zion	2,000	*300,000
Methodist Episcopal, Colored	688	125,000
Methodist, Protestant	1,358	123,054
Methodist, Protestant, Colored	32	2,913
Methodist, United Brethren	1,257	159,547
Methodist, Evangelical Association	926	117,027
Methodist, Wesleyan	250	*20,000
Methodist, Free	289	12,735
Methodist, Congregational	225	13,750
Methodist, Primitive	50	3,837
Methodist, Independent	30	*5,000
Methodist, Union Episcopal, Colored	40	*3,000
Moravian	70	9,923
New Jerusalem (Swedenborgians)	92	3,994
Presbyterians, North	5,218	600,695
Presbyterians, South	1,070	127,017
Presbyterians, Cumberland	1,439	118,750
Presbyterians, Cumberland, Colored	50	5,000
Presbyterians, United	730	55,443
Presbyterians, Reformed	107	10,322
Presbyterians, Welsh Calvinistic	100	11,000
Presbyterians, Reformed, General Synod	30	6,700
Presbyterians, Associate Reformed Synod of the South	90	6,510
Reformed, German	751	168,669
Reformed, Dutch	569	80,156
Roman Catholics	6,546	†6,332,954
Schwenkfeldians	....	*700
Unitarians	434	*20,000
Universalists	713	36,238

* Estimated. † Roman Catholic population.

CIVIL RIGHTS. In 1875 Congress passed an act to secure civil rights to colored citizens. It became a law March 1st of that year. On October 15, 1883, certain of its sections were declared unconstitutional by the United States Supreme Court.

The law was entitled "An act to protect all citizens in their civil and legal rights." Its preamble recited that "it is essential to just

government that we recognize the equality of all men before the law, and hold that it is the duty of Government in its dealings with the people to mete out equal and exact justice to all, of whatever nativity, race, color, or persuasion, religious or political; and it being the appropriate object of legislation to enact great fundamental principles into law, therefore be it enacted," etc. The first sections of the act are as follows:

SECTION 1. That all persons within the jurisdiction of the United States shall be entitled to the full and equal enjoyment of the accommodations, advantages, facilities, and privileges of inns, public conveyances on land or water, theatres, and other places of public amusement; subject only to the conditions and limitations established by law, and applicable alike to citizens of every race and color, regardless of any previous condition of servitude.

SEC. 2. That any person who shall violate the foregoing section by denying to any citizen, except for reasons by law applicable to citizens of every race and color, and regardless of any previous condition of servitude, the full enjoyment of any of the accommodations, advantages, facilities, or privileges in said section enumerated, or by aiding or inciting such denial, shall for every such offense forfeit and pay the sum of five hundred dollars to the person aggrieved thereby, to be recovered in an action of debt, with full costs; and shall also, for every such offense, be deemed guilty of a misdemeanor, and, upon conviction thereof, shall be fined not less than five hundred nor more than one thousand dollars, or shall be imprisoned not less than thirty days nor more than one year:

Provided, That all persons may elect to sue for the penalty aforesaid, or to proceed under their rights at common law and by State statutes; and having so elected to proceed in the one mode or the other, their right to proceed in the other jurisdiction shall be barred. But this provision shall not apply to criminal proceedings, either under this act or the criminal law of any State:

And provided further, That a judgment for the penalty in favor of the party aggrieved, or a judgment upon an indictment, shall be a bar to either prosecution respectively.

These sections were held unconstitutional so far as they apply to the States. The Territories and the District of Columbia are subject to the complete legislative control of Congress. Whether the act of 1875 is valid as applied to cases arising in the Territories and the District of Columbia, is a question which the Court said was not before it, and which therefore it refused to decide. There is room for question whether the act of 1875 being unconstitutional in part—that is, as to the States—will stand as constitutional in part—that is, as to the Territories and the District of Columbia. But there is no doubt of the constitutional power of Congress to enact a civil-rights law applicable alone to the Territories and the District of Columbia. The Court further remarked that whether Congress in the exercise of its power to regulate commerce among the States might or might not enact a law governing civil rights in public conveyances—by land and water—passing from one State to another, was also a question not before it, and it is one on which the Court expressed no opinion. It is believed, however, that Congress has such power.

The third section of the act of 1875 relates to procedure in cases arising under sections 1 and 2. It falls with those sections. Section 4 is as follows:

That no citizen possessing all other qualifications which are or may be prescribed by law shall be disqualified for service as grand or petit juror in any court of the United States, or of any State, on account of race, color, or previous condition of servitude; and any officer or other person charged with any duty in the selection or summoning of jurors who shall exclude or fail to summon any citizen for the cause aforesaid shall, on conviction thereof, be deemed guilty of a misdemeanor, and be fined not more than five thousand dollars.

This section is held constitutional by the Supreme Court on grounds which will be explained farther on.

The constitutionality of the first two sections was tested in five cases brought from the Federal circuit courts in different parts of the country. In two of these cases the accommodations of a hotel had been denied to negroes in Kansas and Missouri on account of their color; in two, admission to seats in the dress-circle of a San Francisco theatre and to seats in a New York theatre had been refused to colored persons; and one was a suit brought in Tennessee against the Memphis and Charleston Railway Company for not permitting a colored woman to ride in a car set apart for white persons. As all of these cases involved the same constitutional question, these were considered together in one opinion by the United States Supreme Court.

It is conceded that before the adoption of the thirteenth amendment to the Federal Constitution Congress had no power to pass a civil-rights law such as that of 1875. If it exists at all, the authority must be derived from the thirteenth amendment or the first or the last section of the fourteenth amendment. This is the thirteenth amendment:

SECTION 1. Neither slavery nor involuntary servitude, except as a punishment for crime whereof the party shall have been duly convicted, shall exist within the United States, or in any place subject to their jurisdiction.

SEC. 2. Congress shall have power to enforce this article by appropriate legislation.

The first and last sections of the fourteenth amendment are:

SECTION 1. All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States and of the State wherein they reside. No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws.

SEC. 5. The Congress shall have power to enforce, by appropriate legislation, the provisions of this article.

Considering these two amendments in their inverse order, the Court holds that the fourteenth prohibits State but not individual action against the civil rights of colored citizens, and that it empowers Congress to protect these

rights when denied or abridged by a State, but not when invaded by individuals. As the act of 1875 was intended to punish persons for violating the civil rights of colored citizens, when these rights were not denied by the State, its enactment was held to be an exercise of power not given to Congress by the fourteenth amendment. The meaning of this amendment and the reasons on which the Court based its decision are set forth in the following extracts from the opinion prepared by Justice Bradley:

The first section of the fourteenth amendment (which is the one relied on), after declaring who shall be citizens of the United States, and of the several States, is prohibitory in its character, and prohibitory upon the States. It declares that "no State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws." It is State action of a particular character that is prohibited. Individual invasion of individual rights is not the subject-matter of the amendment. It has a deeper and broader scope. It nullifies and makes void all State legislation and State action of every kind which impairs the privileges and immunities of citizens of the United States, or which injures them in life, liberty, or property without due process of law, or which denies to any of them the equal protection of the laws. It not only does this, but, in order that the national will, thus declared, may not be a mere *brutum fulmen*, the last section of the amendment invests Congress with power to enforce it by appropriate legislation. To enforce what? To enforce the prohibition. To adopt appropriate legislation for correcting the effects of such prohibited State laws and State acts, and thus to render them effectually null, void, and innocuous. This is the legislative power conferred upon Congress, and this is the whole of it. It does not invest Congress with power to legislate upon subjects which are within the domain of State legislation; but to provide modes of relief against State legislation, or State action, of the kind referred to. It does not authorize Congress to create a code of municipal law for the regulation of private rights; but to provide modes of redress against the operation of State laws, and the action of State officers, executive or judicial, when these are subversive of the fundamental rights specified in the amendment. Positive rights and privileges are undoubtedly secured by the fourteenth amendment; but they are secured by way of prohibition against State laws and State proceedings affecting those rights and privileges, and by power given to Congress to legislate for the purpose of carrying such prohibition into effect; and such legislation must necessarily be predicated upon such supposed State laws or State proceedings, and be directed to the correction of their operation and effect. A quite full discussion of this aspect of the amendment may be found in U. S. *vs.* Cruikshank, 92 U. S. Reports, 542; Virginia *vs.* Rives, 100 Id., 313, and *Ex-parte* Virginia, 100 Id., 339. . . .

Until some State law has been passed, or some State action through its officers or agents has been taken, adverse to the rights of citizens sought to be protected by the fourteenth amendment, no legislation of the United States under such amendment, nor any proceeding under such legislation, can be called into activity: for the prohibitions of the amendment are against State laws and acts done under State authority. Of course, legislation may, and should be, provided in advance to meet the exigency when it arises; but it should be adapted to the mischief and wrong which the amendment was intended to provide against; and that is, State laws, or State action of some kind, adverse to the rights of the citizen secured by the amendment. Such legislation can not properly cover the whole domain of rights appertaining to life, liberty, and property, defining them and providing for their vindication. That would be to establish a code of municipal law regulative of all private rights between man and man in society. It would be to make Congress take the place of the State Legislatures and to supersede them. . . .

An inspection of the law shows that it makes no reference whatever to any supposed or apprehended violation of the fourteenth amendment on the part of the States. It is not predicated on any such view. It proceeds *ex directo* to declare that certain acts committed by individuals shall be deemed offenses, and shall be prosecuted and punished by proceedings in the courts of the United States. It does not profess to be corrective of any constitutional wrong committed by the States; it does not make its operation to depend upon any such wrong committed. It applies equally to cases arising in States which have the justest laws respecting the personal rights of citizens, and whose authorities are ever ready to enforce such laws, as to those which arise in States that may have violated the prohibition of the amendment. In other words, it steps into the domain of local jurisprudence, and lays down rules for the conduct of individuals in society toward each other, and imposes sanctions for the enforcement of those rules, without referring in any manner to any supposed action of the State or its authorities.

If this legislation is appropriate for enforcing the prohibitions of the amendment, it is difficult to see where it is to stop. Why may not Congress with equal show of authority enact a code of laws for the enforcement and vindication of all rights of life, liberty, and property? If it is supposable that the States may deprive persons of life, liberty, and property without due process of law (and the amendment itself does suppose this), why should not Congress proceed at once to prescribe due process of law for the protection of every one of these fundamental rights, in every possible case, as well as to prescribe equal privileges in inns, public conveyances, and theatres? . . .

Civil rights, such as are guaranteed by the Constitution against State aggression, can not be impaired by the wrongful acts of individuals, unsupported by State authority in the shape of laws, customs, or judicial or executive proceedings. The wrongful act of an individual, unsupported by any such authority, is simply a private wrong, or a crime of that individual; an invasion of the rights of the injured party, it is true, whether they affect his person, his property, or his reputation; but if not sanctioned in some way by the State, or not done under State authority, his rights remain in full force, and may presumably be vindicated by resort to the laws of the State for redress. . . .

If the principles of interpretation which we have laid down are correct, as we deem them to be (and they are in accord with the principles laid down in the cases before referred to, as well as in the recent case of United States *vs.* Harris, decided at the last term of this court), it is clear that the law in question can not be sustained by any grant of legislative power made to Congress by the fourteenth amendment. That amendment prohibits the States from denying to any person the equal protection of the laws, and declares that Congress shall have power to enforce, by appropriate legislation, the provisions of the amendment. The law in question, without any reference to adverse State legislation on the subject, declares that all persons shall be entitled to equal accommodations and privileges of inns, public conveyances, and places of public amusement, and imposes a penalty upon any individual who shall deny to any citizen such equal accommodations and privileges. This is not corrective legislation; it is primary and direct; it takes immediate and absolute possession of the subject of the right of admission to inns, public conveyances, and places of amusement. It supersedes and displaces State

legislation on the same subject, or only allows it permissive force. It ignores such legislation, and assumes that the matter is one that belongs to the domain of national regulation.

We have discussed the question presented by the law on the assumption that a right to enjoy equal accommodations and privileges in all inns, public conveyances, and places of public amusement, is one of the essential rights of the citizen which no State can abridge or interfere with. Whether it is such a right or not, is a different question, which, in the view we have taken of the validity of the law on the ground already stated, it is not necessary to examine.

The Court then took up the thirteenth amendment, which abolishes slavery. Even admitting that this clothed Congress with power to pass laws necessary and proper for abolishing all badges and incidents of slavery, it could not be held, the Court said, that denying to colored persons equal accommodations and privileges of hotels, public conveyances, and places of amusement, imposed upon them any badge of slavery or servitude. "Such an act of refusal," says the opinion, "has nothing to do with slavery or involuntary servitude, and if it is violative of any right of the party, his redress is to be sought under the laws of the State; or if those laws are adverse to his rights and do not protect him, his remedy will be found in the corrective legislation which Congress has adopted, or may adopt, for counteracting the effect of State laws, or State action, prohibited by the fourteenth amendment. It would be running the slavery argument into the ground to make it apply to every act of discrimination which a person may see fit to make as to the guests he will entertain, or as to the people he will take into his coach or cab or car, or admit to his concert or theatre, or deal with in other matters of intercourse or business. Innkeepers and public carriers, by the laws of all the States, so far as we are aware, are bound, to the extent of their facilities, to furnish proper accommodation to all unobjectionable persons who in good faith apply for them. If the laws themselves make any unjust discrimination, amenable to the prohibitions of the fourteenth amendment, Congress has full power to afford a remedy under that amendment and in accordance with it."

The grounds for setting aside the first two sections of the act of 1875, under the fourteenth amendment, do not apply to the fourth section, and this was conceded to be constitutional, as had been expressly held in the Virginia jury cases. The section prohibits any discrimination on account of color in the summoning or selection of jurors. Such discrimination, the Court points out, can be made only by law, for which the State is responsible. It can not be made by individuals without the authority of State laws. It may be made by statute, or, in the absence of any statutory disqualification on account of color, colored jurors may be excluded by a judge or some other officer of the law. In either case the discrimination is effected by the agency of the State.

Eight of the nine justices concurred in the judgment of the Court. An elaborate dissenting opinion was rendered by Justice Harlan, of Kentucky, who maintained that the thirteenth as well as the fourteenth amendment conferred upon Congress the power which was exercised in passing the civil-rights act of 1875. "The opinion in these cases," he remarked, "proceeds, as it seems to me, upon grounds entirely too narrow and artificial. The substance and spirit of the recent amendments of the Constitution have been sacrificed by a subtile and ingenious verbal criticism." He then pointed out that in the Dred Scott case the Supreme Court had held that negroes were not a part of the people of the United States; that they were not entitled to the privileges and immunities of citizens; that, in the language of Chief-Justice Taney, "they had no rights which the white man was bound to respect." He cited an earlier case—Prigg *vs.* Pennsylvania—to show that the Court, in upholding the constitutionality of the fugitive slave law, had conceded to Congress a power which was not expressly granted by the Constitution, but was derived from it by implication. The purpose of the thirteenth amendment, he said, was to abolish slavery with all its badges and incidents, and to establish universal freedom. There was a fixed purpose to place beyond doubt the power of Congress to legislate in furtherance of these ends. The power to enforce the provisions of the amendment was therefore expressly granted, and not left to implication. He said:

The thirteenth amendment, my brethren concede, did something more than to prohibit slavery as an *institution*, resting upon distinctions of race, and upheld by positive law. They admit that it established and decreed universal *civil freedom* throughout the United States. But did that freedom, thus established, involve nothing more than exemption from actual slavery? Was nothing more intended than to forbid one man from owning another as property? Was it the purpose of the nation simply to destroy the institution, and then remit the race, theretofore held in bondage, to the several States for such protection, in their civil rights, necessarily growing out of freedom, as those States, in their discretion, choose to provide? Were the States, against whose solemn protest the institution was destroyed, to be left perfectly free, so far as national interference was concerned, to make or allow discriminations against that race, as such, in the enjoyment of those fundamental rights that inhere in a state of freedom? Had the thirteenth amendment stopped with the sweeping declaration, in its first section, against the existence of slavery and involuntary servitude, except for crime, Congress would have had the power, by implication, according to the doctrines of Prigg *vs.* Commonwealth of Pennsylvania, repeated in Strauder *vs.* West Virginia, to protect the freedom thus established, and consequently to secure the enjoyment of such civil rights as were fundamental in freedom. But that it can exert its authority to that extent is now made clear, and was intended to be made clear, by the express grant of power contained in the second section of that amendment.

That there are burdens and disabilities which constitute badges of slavery and servitude, and that the express power delegated to Congress to enforce, by appropriate legislation, the thirteenth amendment,

may be exerted by legislation of a direct and primary character, for the eradication not simply of the institution, but of its badges and incidents, are propositions which ought to be deemed indisputable. They lie at the very foundation of the Civil-Rights Act of 1866.

"I do not contend," continued Justice Harlan, "that the thirteenth amendment invests Congress with authority, by legislation, to regulate the entire body of the civil rights which citizens enjoy, or may enjoy, in the several States. But I do hold that since slavery, as the Court has repeatedly declared, was the moving or principal cause of the adoption of that amendment, and since that institution rested wholly upon the inferiority, as a race, of those held in bondage, their freedom necessarily involved immunity from, and protection against, all discrimination against them, because of their race, in respect of such civil rights as belong to freemen of other races. Congress, therefore, under its express power to enforce that amendment, by appropriate legislation, may enact laws to protect that people against the deprivation, *on account of their race*, of any civil rights enjoyed by other freemen in the same State; and such legislation may be of a direct and primary character, operating upon States, their officers and agents, and also upon, at least, such individuals and corporations as exercise public functions and wield power and authority under the State. What has been said is sufficient to show that the power of Congress under the thirteenth amendment is not necessarily restricted to legislation against slavery as an institution upheld by positive law, but may be exerted to the extent, at least, of protecting the race, so liberated, against discrimination, in respect of legal rights belonging to freemen, where such discrimination is based upon race."

He then contended that the denial to colored citizens of the equal accommodations and privileges of hotels, public conveyances, and places of amusement, presents a discrimination on account of color, which is a badge of servitude whose imposition Congress is empowered by the thirteenth amendment to prevent. "They are burdens which lay at the very foundation of the institution of slavery as it once existed. They are not to be sustained, except upon the assumption that there is still, in this land of universal liberty, a class which may yet be discriminated against, even in respect of rights of a character so essential and so supreme that, deprived of their enjoyment, in common with others, a freeman is not only branded as one inferior and infected, but, in the competitions of life, is robbed of some of the most essential means of existence; and all this solely because they belong to a particular race which the nation has liberated. The thirteenth amendment alone obliterated the race-line, so far as all rights fundamental in a state of freedom are concerned."

Justice Harlan proceeded to maintain that power was given to Congress by the fourteenth amendment also to enact such a civil-rights law as that of 1875. He said:

The assumption that this amendment consists wholly of prohibitions upon State laws and State proceedings in hostility to its provisions, is unauthorized by its language. The first clause of the first section—"all persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States, and of the State wherein they reside"—is of a distinctly affirmative character. In its application to the colored race, previously liberated, it created and granted, as well citizenship of the United States as citizenship of the State in which they respectively resided. It introduced all of that race whose ancestors had been imported and sold as slaves, at once, into the political community known as the "people of the United States." They became, instantly, citizens of the United States, and of their respective States. Further, they were brought, by this supreme act of the nation, within the direct operation of that provision of the Constitution which declares that "the citizens of each State shall be entitled to all privileges and immunities of citizens in the several States" (Art. IV, sec. 2).

The citizenship thus acquired, by that race, in virtue of an affirmative grant by the nation, may be protected, not alone by the judicial branch of the Government, but by congressional legislation of a primary direct character; this, because the power of Congress is not restricted to the enforcement of prohibitions upon State laws or State action. It is, in terms distinct and positive, to enforce "the *provisions* of *this article*" of amendment; not simply those of a prohibitive character, but the provisions—*all* of the provisions—affirmative and prohibitive, of the amendment. It is, therefore, a grave misconception to suppose that the fifth section of the amendment has reference exclusively to express prohibitions upon State laws or State action. If any right was created by that amendment, the grant of power, through appropriate legislation, to enforce its provisions, authorizes Congress, by means of legislation, operating throughout the entire Union, to guard, secure, and protect that right. . . .

Although this Court has wisely forborne any attempt, by a comprehensive definition, to indicate all of the privileges and immunities to which the citizens of each State are entitled, of right, to enjoy in the several States, I hazard nothing, in view of former adjudications, in saying that no State can sustain her denial to colored citizens of other States, while within her limits, of privileges or immunities, fundamental in republican citizenship, upon the ground that she accords such privileges and immunities only to her white citizens and withholds them from her colored citizens. The colored citizens of other States, within the jurisdiction of that State, could claim, under the Constitution, every privilege and immunity which that State secures to her white citizens. . . . No State may, by discrimination against a portion of its own citizens of a particular race, in respect of privileges and immunities fundamental in citizenship, impair the constitutional right of citizens of other States, of whatever race, to enjoy in that State all such privileges and immunities as are there accorded to her most favored citizens. A colored citizen of Ohio or Indiana, being in the jurisdiction of Tennessee, is entitled to enjoy any privilege or immunity, fundamental in citizenship, which is given to citizens of the white race in the latter State. It is not to be supposed that any one will controvert this proposition.

But what was secured to colored citizens of the United States—as between them and their respective States—by the grant to them of State citizenship? With what rights, privileges, or immunities did this grant from the nation invest them? There is one, if there be no others—exemption from race discrimination in respect of any civil right belonging to citizens of the white race in the same State. That, surely, is their constitutional privilege when within the juris-

diction of other States. And such must be their constitutional right in their own State, unless the recent amendments be "splendid baubles," thrown out to delude those who deserved fair and generous treatment at the hands of the nation. Citizenship in this country necessarily imports equality of civil rights among citizens of every race in the same State. It is fundamental in American citizenship that, in respect of such rights, there shall be no discrimination by the State, or its officers, or by individuals or corporations exercising public functions or authority, against any citizen because of his race or previous condition of servitude.

After repeating that the opinion of the majority proceeds on the ground that the power of Congress to legislate for the protection of the rights and privileges secured by the fourteenth amendment can not be brought into activity except with the view, and as it may become necessary, to correct and annul State laws and State proceedings hostile to such rights and privileges, and that, in the absence of State laws or State action adverse to such rights and privileges, the nation may not actively interfere for their protection and security, Justice Harlan adds:

If the grant to colored citizens of the United States of citizenship in their respective States, imports exemption from race discrimination, in their States, in respect of the civil rights belonging to citizenship, then, to hold that the amendment remits that right to the States for their protection, primarily, and stays the hands of the nation, until it is assailed by State laws or State proceedings, is to adjudge that the amendment, so far from enlarging the powers of Congress—as we have heretofore said it did—not only curtails them, but reverses the policy which the General Government has pursued from its very organization. Such an interpretation of the amendment is a denial to Congress of the power, by appropriate legislation, to enforce one of its provisions. In view of the circumstances under which the recent amendments were incorporated into the Constitution, and especially in view of the peculiar character of the new rights they created and secured, it ought not to be presumed that the General Government has abdicated its authority, by national legislation, direct and primary in its character, to guard and protect privileges and immunities secured by that instrument. Such an interpretation of the Constitution ought not to be accepted if it be possible to avoid it. Its acceptance would lead to this anomalous result: that whereas, prior to the amendments, Congress, with the sanction of this court, passed the most stringent laws—operating directly and primarily upon States and their officers and agents, as well as upon individuals—in vindication of slavery and the right of the master, it may not now, by legislation of a like primary and direct character, guard, protect, and secure the freedom established, and the most essential right of the citizenship granted, by the constitutional amendments. I venture, with all respect for the opinion of others, to insist that the national Legislature may, without transcending the limits of the Constitution, do for human liberty and the fundamental rights of American citizenship what it did, with the sanction of this court, for the protection of slavery and the rights of the masters of fugitive slaves. If fugitive-slave laws, providing modes and prescribing penalties, whereby the master could seize and recover his fugitive slave, were legitimate exertions of an implied power to protect and enforce a right recognized by the Constitution, why shall the hands of Congress be tied, so that—under an express power, by appropriate legislation, to enforce a constitutional provision, granting citizenship—it may not, by means of direct legislation, bring the whole power of this nation to bear upon States and their officers, and upon such individuals and corporations exercising public functions as assume to abridge, impair, or deny rights confessedly secured by the supreme law of the land?

Justice Harlan further maintained that the decision of the Court was erroneous, even conceding that Congress has power to legislate only against hostile State action. He pointed out that the court had held, in *Ex-parte* Virginia (100 U. S. Reports), that the fourteenth amendment means that no agency of the State, or of the officers or agents by whom its authority is exercised, shall deny to any person equal protection of the laws, and then said: "In every material sense applicable to the practical enforcement of the fourteenth amendment, railroad corporations, keepers of inns, and managers of places of public amusement, are agents of the State, because amenable, in respect of their public duties and functions, to public regulation. It seems to me that, within the principle settled in *Ex-parte* Virginia, a denial, by these instrumentalities of the State, to the citizen, because of his race, of that equality of civil rights secured to him by law, is a denial by the State within the meaning of the fourteenth amendment. If it be not, then that race is left, in respect of the civil rights under discussion, practically at the mercy of corporations and individuals wielding power under public authority."

Justice Harlan conceded that Congress has no authority to regulate the social rights of men and races in the community, but he claimed that the rights covered by the law of 1875 were not social but legal. He set forth his views on this point as follows:

I agree that Government has nothing to do with social, as distinguished from technically legal, rights of individuals. No government ever has brought, or ever can bring, its people into social intercourse against their wishes. Whether one person will permit or maintain social relations with another is a matter with which government has no concern. I agree that if one citizen chooses not to hold social intercourse with another, even upon grounds of race, he is not and can not be made amenable to the law for his conduct in that regard; for no legal right of a citizen is violated by the refusal of others to maintain merely social relations with him. What I affirm is that no State, nor the officers of any State, nor any corporation or individual wielding power under State authority for the public benefit or the public convenience, can, consistently either with the freedom established by the fundamental law, or with that equality of civil rights which now belongs to every citizen, discriminate against freemen or citizens, in their civil rights, because of their race, or because they once labored under disabilities imposed upon them as a race. The rights which Congress by the act of 1875 endeavored to secure and protect are legal, not social, rights. The right, for instance, of a colored citizen to use the accommodations of a public highway, upon the same terms as are permitted to white citizens, is no more a social right than his right, under the law, to use the public streets of a city, or a town, or a turnpike-road, or a public market, or a post-office, or his right to sit in a public building with others, of whatever race, for the purpose of hearing the political questions of the day discussed. Scarcely a day passes without our seeing in this court-room citizens of the white and black races sitting side by side, watch-

ing the progress of our business. It would never occur to any one that the presence of a colored citizen in a court-house, or court-room, was an invasion of the social rights of white persons who may frequent such places. And yet, such a suggestion would be quite as sound in law—I say it with all respect—as is the suggestion that the claim of a colored citizen to use, upon the same terms as is permitted to white citizens, the accommodations of public highways, or public inns, or places of public amusement, established under the license of the law, is an invasion of the social rights of the white race.

The opinion of Justice Harlan closes with the expression of these views:

My brethren say that, when a man has emerged from slavery, and by the aid of beneficent legislation has shaken off the inseparable concomitants of that state, there must be some stage in the progress of his elevation when he takes the rank of a mere citizen, and ceases to be the special favorite of the laws, and when his rights as a citizen, or a man, are to be protected in the ordinary modes by which other men's rights are protected. It is, I submit, scarcely just to say that the colored race has been the special favorite of the laws. What the nation, through Congress, has sought to accomplish in reference to that race, is—what had already been done in every State of the Union for the white race—to secure and protect rights belonging to them as freemen and citizens, nothing more. The one underlying purpose of congressional legislation has been to enable the black race to take the rank of mere citizens. The difficulty has been to compel a recognition of their legal right to take that rank, and to secure the enjoyment of privileges belonging, under the law, to them as a component part of the people for whose welfare and happiness government is ordained. At every step in this direction the nation has been confronted with class-tyranny, which a contemporary English historian says is, of all tyrannies, the most intolerable, "for it is ubiquitous in its operation, and weighs, perhaps, most heavily on those whose obscurity or distance would withdraw them from the notice of a single despot." To-day it is the colored race which is denied, by corporations and individuals wielding public authority, rights fundamental in their freedom and citizenship. At some future time it may be some other race that will fall under the ban. If the constitutional amendments be enforced, according to the intent with which, as I conceive, they were adopted, there can not be in this republic any class of human beings in practical subjection to another class, with power in the latter to dole out to the former just such privileges as they may choose to grant. The supreme law of the land has decreed that no authority shall be exercised in this country upon the basis of discrimination, in respect of civil rights, against freemen and citizens because of their race, color, or previous condition of servitude. To that decree—for the due enforcement of which, by appropriate legislation, Congress has been invested with express power—every one must bow, whatever may have been, or whatever now are, his individual views as to the wisdom or policy, either of the recent changes in the fundamental law, or of the legislation which has been enacted to give them effect.

The decision of the Court, and the dissenting opinion of Justice Harlan, gave rise to much discussion throughout the country. By some the opinion of the majority was freely criticised, but it appears to have been generally accepted as a sound as well as a final interpretation of the Constitution. The fact was recognized that the Court simply reaffirmed a principle which it had more than once previously affirmed, and had advanced as far back as the session of 1875–'76. On the meeting of Congress, Senator Wilson, of Iowa, proposed this constitutional amendment:

Congress shall have power, by appropriate legislation, to protect citizens of the United States in the exercise and enjoyment of their rights, privileges, and immunities, and to assure to them the equal protection of the laws.

The New York Penal Code contains these provisions concerning civil rights:

SECTION 381. A person who either on his own account, or as agent or officer of a corporation, carries on business as innkeeper, or as common carrier of passengers, and refuses, without just cause or excuse, to receive and entertain any guest, or to receive and carry any passenger, is guilty of a misdemeanor.

SEC. 383. No citizen of this State can, by reason of race, color, or previous condition of servitude, be excluded from the equal enjoyment of any accommodation, facility, or privilege furnished by innkeepers or common carriers, or by owners, managers, or lessees of theatres or other places of amusement, by teachers and officers of common schools and public institutions of learning, or by cemetery associations. The violation of this section is a misdemeanor, punishable by a fine of not less than fifty dollars nor more than five hundred dollars.

CIVIL-SERVICE REFORM BILL. See CONGRESS and REFORM IN THE CIVIL SERVICE.

COLENSO, John William, an English clergyman and colonial bishop, born in St. Austell, Cornwall, Jan. 24, 1814; died in D'Urban, or Port Natal, South Africa, June 20, 1883. He entered St. John's College, Cambridge, and in 1836 was graduated as second wrangler and Smith's prizeman, and became a fellow of his college. Two years later he was appointed assistant-master of Harrow School, which post he held until 1842. During these years he prepared books on arithmetic and algebra, which, being adopted as text-books in schools and universities, yielded him a handsome income. From 1842 to 1846 he resided at his college, and then became rector of Forncett St. Mary, Norfolk. Besides giving due attention to his parish work and duties, Colenso published other mathematical works, a volume of "Village Sermons," and a treatise on the communion service in the Prayer-Book, with selections from the writings of F. D. Maurice.

On the 30th of November, 1853, Dr. Colenso was appointed Bishop of Natal, South Africa, being the first to occupy that see. His "Ten Weeks in Natal" was published two years after he left England, and his "Translation of the Epistle to the Romans, commented on from a Missionary Point of View," appeared in 1861. It is not known clearly how long Bishop Colenso had been engaged in studying the Old Testament, with reference to critical points at issue; but it is quite likely that the matter had been before him for years. At any rate, he considered it a duty, as appears from his course, to put forth views which at once excited severe animadversion and astonishment at his lapse from Anglican orthodoxy, and his adoption of German rationalism and neology.

The first part of "The Pentateuch and Book of Joshua critically examined" appeared in

1862. As was to be expected, this assault on the accuracy, veracity, and authorship of the books of Moses was at an early day brought before the authorities of the Church in England, and both Houses of Convocation of the Province of Canterbury condemned it in 1864, as containing "errors of the gravest and most dangerous character." That work was reviewed in several of the prominent organs of free thought and of orthodox religion (chiefly the "Westminster" and "Quarterly" Reviews). On the one hand, Colenso was praised without stint, as a noble champion of truth and a fearless critic of the Old Testament; on the other, he was censured with corresponding severity, as one who showed himself ignorant and presumptuous beyond all excuse; and it was urged that no honorable and upright man would be willing to continue to minister at the altars, or receive emoluments from a church, whose doctrines on inspiration and other fundamental points he denied and was holding up to public odium.

The next step on the part of the Church in South Africa was the presenting and summoning Bishop Colenso for trial, and, on his refusal to appear, the deposing him from his bishopric by the metropolitan, Bishop Gray of Cape Town. Dr. Colenso resolved not to submit to the ecclesiastical authorities in the colony, and the result was that this case was brought on appeal before the courts in England. The matter was argued at length, and it was decided by the Privy Council, in March, 1865, that the deposition was "null and void in law," the ground of the decision being that the crown has no legal power to constitute a bishopric, or to confer coercive jurisdiction within any colony possessing an independent legislature; and that, as the letters-patent purporting to create the sees of Cape Town and Natal were issued after these colonies had acquired legislatures, the sees did not legally exist, and neither bishop possessed in law any jurisdiction whatever. Notwithstanding this decision, the bishops forming the Council of the Colonial Bishopric's Fund refused to pay Dr. Colenso the income of the see of Natal. He accordingly appealed to the Court of Chancery, and the Master of the Rolls delivered a judgment, Oct. 6, 1866, ordering the payment in future of his income, with all arrears and interest. Thus the income was secured to him for life, and, so far as the decision of the civil courts could affect it, he remained in possession of the see as its bishop. The Church in South Africa, however, held that he was lawfully and fully deposed, and would have no intercourse or fellowship with him. Dr. Colenso ministered to those who thought him right and supported him; while the orthodox portion of the church community looked upon him as one deprived of all power lawfully to exercise the functions of the episcopal office. Nevertheless, the occupant of the see of Natal had numerous sympathizers in England, and in the summer of 1865 a meeting of the subscribers to the "Colenso fund" was held in London, when £3,300 were presented to him, as a token of respect and good-will, on his going back to Africa.

Ten years later he made another visit to England, in order to report to the proper authorities the condition of church affairs in Cape Colony; to ascertain, if possible, his relationship to the new Bishop of Cape Town; and to arrange other matters in the existing anomalous condition of church life and work in that distant field. During his stay in England, the Bishops of Oxford, Lincoln, and London inhibited him from preaching in their respective dioceses, as one having no lawful authority to preach. Dr. Jowett, however, whose sympathies doctrinally were with Colenso, invited him to preach in the chapel of Balliol College, that chapel not being within the jurisdiction of the Bishop of Oxford.

Dr. Colenso's later life was passed quietly in Natal. He was noted for his kindly interest and zeal in behalf of the Zulus and Boers.

He published at intervals the remaining parts of his work on the Pentateuch and the Book of Joshua. In 1866 a volume of discourses appeared, entitled "Natal Sermons." Besides these he prepared and had printed a Zulu grammar and Zulu dictionary, a Zulu translation of the New Testament and other parts of the Bible and Prayer-Book, with several educational works for the instruction of the Zulus. His latest publications were, "The New Bible Commentary, by Bishops and other Clergy of the Anglican Church, critically examined" (1871); the sixth part of "The Pentateuch and the Book of Joshua critically examined" (1872); and "Lectures on the Pentateuch and the Moabite Stone" (1873).

COLLISIONS, MARINE. The increasing frequence of marine disasters with the extension of steam navigation leads to a general demand for more effective precautions against collision.

Proposed Navigation Laws.—Since quick passages attract more custom to navigation companies than a reputation for safety, it has been proposed to sharpen the penalties for infringing the maritime laws against rapid sailing in bad weather. In Germany, where the laws are already exceptionally stringent, the suggestion is made to bring such infraction within the provisions of the statutes against murder and attempted murder. The captain only would be liable to indictment, although the ship-owner is primarily and principally responsible. A remedy would be found in making them liable in cases of disaster to pecuniary damages, in the same manner as railroad companies. It is equally desirable to restrict the rate of speed. The terms "half-speed" and "slow" are indefinite, owing to the difference in the speed of different vessels. To insure the highest degree of safety, steamers should be prohibited, in fogs, driving snows, and on dark nights, from going faster than

the rate required for steering. This can be accurately determined for each vessel. The present English law requires steam-vessels to have both a steam-whistle and a fog-horn, and in a fog to go at moderate speed and sound their whistles frequently. Masters neglecting the rules are liable to prosecution, and in the event of a collision are punishable for willful neglect.

Signal-Lights.—The use of electric lights is not regarded with much favor by seamen. It is not yet proved that the electric light will penetrate a fog much farther than the ordinary lamps, in such a manner as to indicate its distance and location. It would probably obscure the red and green side-lights, unless they could also be provided with electric lamps, and the colored side-lights are considered absolutely indispensable. If colored electric lights could be produced, and the electric light should prove to be sufficiently clear and distinct to be made out at a greater distance than oil and petroleum lamps, the risk of colliding with other steamers and large vessels carrying electric lanterns would be lessened, but the danger of running down smaller craft which must use the ordinary lights would be enhanced, as the blinding effects of the electric light would render it difficult to distinguish the colored lights in the neighborhood of one lighted with electricity. There is danger also of confounding an electric top-light with a light-house lantern. More practical is the suggestion to hang the white light of a ship as high as possible, and to maintain a watch at the mast-head in foggy weather. The fog is usually thickest near the surface of the water.

Sound-Signals.—The proposal of a system of sound-signals to indicate the course of vessels approaching one another meets with general approval. By combinations of short and long blasts, on the principle of the Morse alphabet in telegraphy, sixteen of the thirty-two directions marked on the compass, which would be sufficient for all practical purposes, could be readily and intelligibly signaled. If only eight points of the compass were embraced in the signals, the advantages would be unquestionable, and every sailor would understand the signs. George Read, in England, has devised a simple apparatus for automatically signaling the course of a vessel by means of colored lanterns suspended from the ends of a spar which changes its position in obedience to the movements of the helm.

Steering-Gear and Brakes.—Certain improvements in construction have been proposed to enable steamers to mind their helm more readily, or slow up more quickly. The ship's brakes proposed by two or three different inventors will accomplish either object. They consist of two strong plates fastened by hinges to the ship's sides, opposite each other, and are ordinarily folded forward against the side of the vessel; but the chains holding them can be paid out until they stand at right angles to the wall, and quickly reduce the momentum of the ship. If one only is released, it acts as a rudder to turn the course of the ship to that side. A brake of this kind, designed by John McAdam, of New York, consists of a flat rectangular plate of iron on each side of the ship, close to the rudder. When folded, these fins fit into the dead-wood. Powerful springs, worked from the pilot-house by a trigger, draw the pins which hold the brakes in place, and the pressure of the water immediately extends them until they stand at right angles to the sides of the ship. A windlass winds them back again. When tried in November on the steamer Florence in New York harbor, going at a speed of ten knots against the tide, they brought the ship to a dead stop within her own length, the engines being reversed at the instant the brakes were applied.

A second rudder in the bow, which can be unfastened in foggy weather, but is ordinarily a rigid continuation of the keel, has been suggested as another contrivance for improving the steering capacity of ocean-steamers. A third device is the lattice-keel, which has been used for many years on river-steamers in the Weser and Elbe. The stern part of the keel, called the dead-wood, consists of grating instead of solid plates, so that in turning the greater part of the water passes through the openings and offers no resistance to the sidelong motion of the ship.

Water-tight Compartments. — The complete avoidance of collisions is impossible. Consequently means must be provided to diminish the dangers in case of collision. Naval ironclads are constructed with double hulls, besides water-tight compartments. In the large passenger-steamships it is usually attempted to render the ship secure from sinking by dividing the interior into water-tight compartments by vertical walls or movable doors. These compartments must not be so large that the filling of one or two of them with water will sink the ship, the walls must be strong enough to withstand the pressure of the column of water, tight enough to prevent the escape of water into the neighboring compartments, and, if adjustable, they must be closed at the time of danger. These conditions are rarely fulfilled, and there is probably no iron steamship which would not sink if struck by a ship in certain quarters.

Life-saving Appliances. — The number of life-boats usually provided is sufficient to hold all hands on trading-vessels, but on the passenger-steamers which cross the Atlantic there is not davit-room for boats enough to seat the passengers and crew. Moreover, it often happens that only the boats on one side or in one part of the ship can be lowered. Cork jackets and swimming-belts are of little value when accidents occur in mid-ocean or in winter. The laws require that life-preservers should be provided in sufficient numbers, and kept unfastened in handy places. The life-preservers which must be carried on the Atlantic emi-

grant-steamers take up room that is sometimes desired for the cargo, and their stowage often occasions inconvenience. They are usually packed between the deck-beams, and it may be that in the crowded space between decks they sometimes harbor the germs of infection. It is necessary that passengers should be made acquainted with the use of life-preservers. In the catastrophe of Jan. 19, 1883, when the English coal-steamer Sultan collided with the German passenger-steamer Cimbria, only a small portion of the life-preservers came into use, and those were of little avail, as the swimmers soon perished in the cold. The four boats which set out from the sinking vessel rescued 65 persons, but the rest of the passengers and crew, who numbered altogether 522, were lost. Life-rafts are now regarded by many as preferable in most respects to boats or any other life-saving appliances.

The inspection of foreign passenger-vessels in the United States is assigned to boards of inspectors at six of the principal ports. The boards at Boston, Baltimore, Philadelphia, New Orleans, and San Francisco consist of two inspectors each, that at New York of six. Rules for their guidance were issued by Secretary of the Treasury Folger on March 10, 1883. The law requires that the tackle for disengaging the life-boats should be capable of being worked by a single person, and so disposed that the boats can be launched, both ends being lowered at once, when the ship is going at full speed. This provision is not insisted upon, as no workable single-hand disengaging apparatus has yet been invented. The rule of the British Board of Trade respecting the number of life-boats to be carried is, that there should be six or seven boats, 1,892 cubic feet in total capacity, for vessels of 1,500 tons, and an additional boat with the capacity of 495 feet for every 500 tons additional. For the larger Atlantic steamers, running up to 8,500 tons, this requirement is incapable of fulfillment. Even if it could be carried out, the total complement of boats would accommodate less than half the number of persons usually carried on the emigrant-steamers.

Mid-Ocean Disasters.—To enable vessels in distress to be relieved in the Atlantic ocean, the adoption of fixed routes or lanes for all ships crossing between Europe and America is advocated, one for the east- and one for the west-bound navigation. To guard against collisions with icebergs, which was the probable cause of the loss of several steamships, a delicate instrument on the principle of Edison's heat-measurer has been devised by an English inventor, which can herald a sudden fall of the temperature by means of an automatic alarm.

COLOMBIA (Estados Unidos de Colombia). (For statistics relating to area, see "Annual Cyclopædia" for 1877.) The republic is composed of nine States and five Territories, the States being Antioquia, Bolívar, Boyacá, Cauca, Cundinamarca, Magdalena, Panamá, Santander, and Tolima. The names of the Territories are Bolívar, Casanare, Goajira, Providencia, and San Martin. The form of government is democratic, and the system federal.

The executive of the confederacy is President Dr. José E. Otálora. The Cabinet is composed of the following ministers: Secretary of State, Señor Ezequiel Hurtado; War, Señor Juan N. Mateus; Finance, Señor Anibal Galindo; Public Works, Señor Manuel Laza Grau; Foreign Affairs, Señor Antonio Roldan; Public Instruction, Señor J. V. Uribe; and Treasury, Señor Alejandro Posada.

On Sept. 2, 1883, Dr. Nuñez was elected President, and he will be inaugurated in February, 1884. Dr. Nuñez is fifty years of age. He was First Consul-General at Liverpool, and subsequently President of the State of Bolívar. He was a candidate for the presidency of Colombia in 1875, when Dr. Parra was elected, but in 1879 he was elected President, his successor being Gen. Zaldera, who died on Dec. 21, 1882, and whose successor was Dr. Otálora, the present occupant of the presidential chair.

The United States minister at Bogotá is Mr. W. L. Scruggs.

The population of Colombia is estimated at 4,000,000 souls.

According to the last census, the population of the capitals of the States was as follows: Panamá, 36,000; Santa Marta, 3,500; Cartagena, 7,800; Socorro, 16,000; Medellin, 20,000; Tunja, 5,471; Bogotá, 40,883; Ibague, 10,846; and Popayan, 8,485.

The General Government possesses the right of intervention in matters relative to lines of interoceanic communication at present existing, or which in the future may be opened in the territory of the Union, and in the navigation of rivers flowing through more than one State, or which pass to or from a neighboring power.

The Magdalena river flows into the Atlantic at a point called the Bocas de Ceniza. At a distance of fifteen miles from its mouth, on the left bank, is the city of Barranquilla, the seat of an extensive import and export trade. Barranquilla is connected with the port of Sabanilla by means of a railroad fourteen miles in length. The Bocas de Ceniza, which for a long time were obstructed by a sand-bar at the entrance, are now open to easy access by vessels of large tonnage, and, on account of the privileges conceded of late years by Congress to the commerce of the country, they are frequently visited by steamers and sailing-vessels from abroad. Owing to the shifting of the bar, however, steamers do not at present enter the river. To aid the entry of sailing-craft, the Government has established a tug-boat service.

For the purpose of navigation the Magdalena is divided into the upper and lower Magdalena. The former is included between the cities of Neiva and Honda, 200 miles, and the

latter comprises the portion from Caracoli to the mouth of Ceniza. The distance between the Laguna de las Pampas and Barranquilla is 515 miles. The waters of the Magdalena are entirely free to commerce, and there are at present seventeen steamers navigating it.

Stern-Wheel Steamers.—Messrs. Yarrow & Co., of Poplar, England, have built a steamer of this kind specially for the Magdalena. A speed of thirteen miles an hour has been obtained in river-steamers of this class, the length being 120 feet, by 24 feet beam, and the draught 12 inches. A speed of fifteen miles an hour is attained by vessels 130 feet in length, by 28 feet beam, and a draught of 15 inches. The dimensions of this new steamer are, exclusive of the wheel, 150 feet in length, by 31 feet beam, with an estimated draught of 15 inches.

Army.—The standing army of Colombia, or National Guard, numbers about 3,000 men.

Finances.—The national budget for the fiscal year 1883 estimated the income from import duties at $3,800,000; from the salines, at $1,100,000; from other sources of revenue, $1,344,000, constituting a total of $6,244,000, while the expenditure was fixed at $6,744,000, the outlays figuring therein with $1,800,000 to be spent by the Treasury Department, and $1,400,000 by that of the army and navy.

A message sent in to Congress by President Otálora, in July, 1883, attracted much attention; in this document he said:

The monetary crisis becomes more serious every day, and members must adopt some definite plan respecting the State indebtedness by consolidating the different issues. Our creditors must be more interested in this matter than ourselves, because otherwise ultimately it will be impossible to avoid further issues of obligations against branches assigned for other services. Since we are unable to cover the millions of the enormous deficit against the Treasury, we must endeavor to maintain the value of our bonds by assuring the punctual payment of current interest until such time as the financial situation shall improve. It is also requisite that the principal bases should be fixed by law, upon which, without awaiting subsequent authorization from Congress, final arrangements can be effected in Europe for the acknowledgment and payment by the canal company and the railroad company of the credits we hold against them for indemnity due as under the contracts for the concessions. It would not be wise that such law should place a limit on our rights, thus prejudicing our suits; but you must give a vote of confidence to the Executive, which will come to no arrangement which has not been carefully and thoroughly studied by the Cabinet and its officers. The agent intrusted with the *ad referendum* agreement has already been instructed to dispose of the funds as follows: $1,000,000 to be given to the National Bank, to enable it to effect discounts at 5 per cent.; $500,000 to be devoted to the payment of overdue interest on foreign bonds under an agreement which shall insure the acceptance of such payment at the rate of 3 per cent., commencing in the first place at 1 per cent.; $500,000 for the purchase of articles required for the schools, clothing and armament for the army, and for various objects of art to be placed in the Capitol, and the balance to be devoted to the construction of a railroad from Bogotá to the Magdalena.

The amount of duties collected by the Federal custom-houses during the fiscal year 1882–'83 was $4,350,478, being $45,512 in excess of what the revenue from this source had been the preceding year.

The public indebtedness of the confederacy stood on Aug. 31, 1882, as follows:

A. Foreign debt (consolidated) } B. Home debt (loan of 1873).. }	$9,570,500
Consolidated debt	5,558,301
Floating debt	425,388
" " 3 per cent.	1,313,250
" " not bearing interest	580,710
Antioquia and Girardot railroads	578,500
Treasury bonds	26,368
Bonds for which the state's salt-works and customs receipts are pledges	1,165,049
Other outstanding bonds	1,668,011
Indemnity to foreigners	253,450
Purchase-money for Barranquilla railroad	420,000
Total	$21,589,527

Banks.—The Bank of Bogotá, in ten years, has paid a little over 100 per cent. in dividends. The Bank of Colombia, in five years, has paid 83 per cent. The Banco Popular, in three years, has paid over 55 per cent. The national Government has no supervision over any of the banks except the National Bank, which is nothing more than an institution established for the purpose of discounting the Government's own obligations. As an example, the Government fails to pay the pensions for five or six months; those who should receive them are suffering from want, and the National Bank steps in and offers to discount them. In this way the Government makes a large profit. Nearly if not all the stock of the National Bank is owned by the Government. All the other banks derive their powers from State governments, and are never taxed, except in case of a revolution, when they are all liable to be visited by the various chiefs. The only security for the circulation of the banks is the individual liability of the stockholders. There are four banks doing business in Barranquilla. Three of them have a combined capital of $1,000,000, the other being a branch of the National Bank of Bogotá. The private banks are organized under the laws of the State of Bolivar, which are much the same as were those of the State of New York twenty-five years ago. The majority of the capital of the American Bank belongs to citizens of the United States, being divided as follows: American citizens, $295,000; British subjects, $260,000; Colombians, $10,000. The rates of discount are: 90 days, 8 per cent.; 180 days, 9 per cent.; rates of interest, 3 per cent. and 4 per cent. for 180 and 90 days; rates of exchange on New York, 27 per cent. and 28 per cent. for sight drafts, and 25 and 26 per cent. for 60 and 90 days' drafts; on London, 24 per cent. and 25 per cent. Toward the close of 1883 another bank with a large capital was to be established at Barranquilla.

Contested Limits.—There being a long-pending dispute about the precise frontier line between Colombia and Venezuela, the Governments have submitted the difference to the arbitration of Don Alfonso XII, King of Spain, who has accepted the office, and by virtue of a decree is-

sued in November, 1883, appointed a committee of inquiry composed of five members. The investigation will have to take for a basis of its deliberations the frontier treaty between the two republics, of Sept. 14, 1881. Frontier disputes having so frequently led to disastrous wars between Spanish-American republics, the tendency is to avail themselves in the future of amicable arbitration.

Postal Service.—There were forwarded in 1879–'80 altogether 463,882 letters and 413,-350 newspapers, and $2,283,974 in coin, besides 4,920 kilogrammes of gold-dust and 14,-348 kilogrammes of bar-silver.

Railroads.—There were in operation in 1883 the ensuing lines of railway: 1. The Panamá railroad, 47 miles; 2. The 17 miles from Sabanilla to Barranquilla, in the State of Bolívar; 3. Of the Cucuta-Puerto Villamizar line (on the Zulia river); 38 miles were being built, and part of it—12 miles—from Villamizar to Altoviento, were in operation; 4. The line from Buenaventura to Córdoba, 13 miles; 5. The line from Puerto Berrio to Zabaletas, 20 miles: together, 110 miles in operation. There was formed in New York in 1883 "The Bogotá City Railway Company," a company proposing to establish in the Federal capital and elsewhere in the State of Cundinamarca a system of tramways and narrow-gauge railroads, with a capital of $2,500,000.

Telegraphs.—Length of lines in 1879–'80, 2,960 kilometres; and number of telegrams forwarded, 150,204.

The Panama Canal.—The progress of the work on the Panamá canal at the end of October, 1883, is shown by the following statement: "The total length of the canal is 74 kilometres, from the Atlantic to its mouth in the Pacific, at the islands of Naos and Flamenco. It is divided into twelve sections, the most important of which are those of Colon, Gorgona, Obispo, Emperador, Culebra, and Paraiso. These united sections employ daily 80 steam-excavators, 40 locomotives, and 800 tip-wagons. There are 90,000,000 cubic metres to be excavated. The grand cutting, about two thirds of which has already been excavated, is the cutting between Obispo and Paraiso. The force employed upon the work is upward of 10,000 men, and the excavation up to the 1st of October amounted to more than 2,500,000 cubic metres. During these latter months of the bad season the excavations have amounted to about 350,000 metres a month. This figure will be quintupled during the fine season, which begins in December, and next year (1884) nearly all of the necessary machinery will be at work, and the excavations will amount to 4,000,000 metres a month. The working force will be augmented to 15,000 men.

"At Colon the port works are nearly complete. The Terre Pleine, with the breakwater, destined to diminish the effect of the heavy seas at the entrance of the canal, is finished. An entire town has appeared there, with a collection of workshops, warehouses, and connecting railways for the reception and distribution of the material. The earth from Terre Pleine was taken to Monkey Hill, where a great cutting has been specially opened, with the object of filling up the lagoons at the bottom of the Bay of Colon to improve its sanitary condition. This cutting at Monkey Hill will itself be enlarged into Terre Pleine, and will become an annex for stores, workshops, warehouses, etc. The port of Colon is dredged continually by three machines, lifting together daily from 6,000 to 7,000 metres. One of these dredges can work during the worst weather, and can lift 3,000 metres a day. From Colon to Gatun the contractors are Messrs. Huerne & Slavin, of San Francisco. These engineers must, with three machines of 120 horse-power each, open the first section in six months between Colon and Gatun, a distance of nine kilometres. The first of these machines is able to excavate 6,000 metres a day. The Pacific opening, between the mouth of the Rio Grande and Paraiso, is contracted for by the Franco-American Trading Company. The first machine of the American system will begin to work in a few days, and will be supplemented by others, which will be necessary to finish this part of the canal, from Gatun to Bahia del Soldado, in two years. On the Atlantic side the company are working two machines, furnishing a minimum of 4,000 cubic metres a day.

"The Hercules, an American dredge, is at length at work on the Panamá canal, and is giving satisfaction. The average day's work at present may be set down as about 6,000 cubic metres."

Since the establishment of the canal-works the population of Panamá has increased enormously. Including Colon and Panamá, the Atlantic and Pacific termini of the canal, together with the villages between them, there is a population of 36,000, half of whom are negroes from Jamaica. The climate during the dry season—December to April—exhibits a steady temperature of about 82° Fahr.; but during the rest of the year, when rain and storms prevail, it is much hotter. Accidents from lightning are common, and are likely to continue, for in the city of Panamá there is not a lightning-rod to be found. There is no mutton in the country, and, when any lucky resident is able to procure a joint, he invites his friends to partake of the unusual delicacy. The Indian equivalent for the word Panamá is "plenty of fish," and plenty there is, with the difference that those which are taken from the Atlantic side of the Isthmus are far superior to those on the Pacific side, which are not firm, and become tainted very soon after they leave the water. The Isthmus for fifty years had been free from earthquake-shocks till September, 1882. On Aug. 29, 1883, earthquakes were felt in Salvador, Colombia, and Ecuador, while at Talcahuano, Chili, on August 28th, the water rose two feet above high-water mark, and al-

most immediately afterward fell three feet. During the last week in August noises such as that produced by continuous firing during a battle, were heard at Chiman, within sixty miles of Panamá, in all the towns on the Bogotá plateau, and at Manabi, in Ecuador. On September 2d the sun at Panamá and Guayaquil was discolored, almost at the moment when the fearful eruptions and earthquakes were destroying a portion of Java and adjacent islands. On September 10th, a sharp earthquake, which did no damage, was felt in Lima, and was about coincident with that felt in the Western United States the same morning.

In July, 1883, the dispute between the Federal Government of Colombia and the canal company, with reference to the payment of the police force, which is required to maintain order and good government along the line of work, had been amicably terminated in Bogotá by Señor Anibal Galindo, the Secretary of the Treasury at the time, and Señor Felipe Paul, the representative of the canal directory. Under this arrangement the canal company agrees to pay the Federal Government the expenses, estimated at $80,000 per annum, of maintaining a force of 300 men, to be stationed along the canal line, and leaves for future discussion the amount to be paid should more men be necessary. This contract, which also permitted the treasurer to draw at sight for $50,000 on account, had been submitted to the Executive.

Pearl-fishing.—The pearl-fishery in the bay of Panamá is being pushed on with great vigor, and with a good deal of success. Many fine specimens have lately been found, including a very finely shaped one called the "Lesseps," weighing nearly 200 grains. It is about the most important that has been in the European market for many years, and takes its place in the list of the largest-known pearls in the world.

Commerce.—The total foreign trade (import and export) of Colombia, during a decade, has been:

		Annual average.
1871–'75	$92,676,800	$18,535,360
1876–'80	107,094,400	21,418,880

	Import.	Export.
1878–'79	$10,787,654	$13,711,511
1879–'80	10,857,008	13,804,981
1880–'81	12,071,480	15,836,944
1881–'82	12,355,555	18,514,116

The United States consular report, having reference to the export trade from the United States of Colombia to the United States, in 1882, remarks about India-rubber: "The declared value of rubber exported for the last eleven years to the United States is $1,470,085, and the weight, in tons of 2,240 pounds, 1,994. Although the difficulties in procuring this valuable forest product are becoming yearly greater, yet the recent high prices prevailing in the foreign markets have stimulated its gathering. New and accessible forests have been discovered. When a tree is found by the rubber-hunters, it is immediately felled, in order to secure all the sap it contains. This unwise practice will undoubtedly continue until all the forests are completely exhausted. The present price for rubber in the market of Cartagena is $900 per ton of 2,240 pounds.

"Owing to the unsatisfactory prices ruling in the foreign markets for ivory-nuts, their exportation has largely decreased. Thousands of tons of these nuts lie under the trees, only awaiting some one to come and cart them away; most of these nuts are procured from the San Blas coast and Atrato river and its tributaries."

Fustic.—"The exportation of the yellow dye-wood called fustic has increased more than any other article on the list, caused mainly by the people being compelled, on account of the locusts, to relinquish agricultural pursuits, and seek a livelihood by getting out the products of the forest. The supply is nearly inexhaustible, and easy of access. The price per ton, delivered at Cartagena, is $13 to $16."

Cedar.—"Several New Orleans and Boston timber firms have sent agents to this district, and the result of their investigations of these vast timber-forests have been so highly satisfactory that the houses they represent are making arrangements to get out cedar and mahogany on a large scale. The field is wide enough for any number of firms without their respective interests coming in conflict. The mahogany of this country is of fair quality, but inferior to the St. Domingo product. The quality of the cedar is excellent, and bears comparison with that procured in Mexico and Cuba. Cedar-logs are placed free on board here, at $45 a thousand feet. The same wood can be procured at Cispate Bay, a good anchorage for vessels of large tonnage, for $25 to $30 a thousand, delivered alongside vessel.

"The value of gold-dust that was cleared through the Cartagena custom-house for the year 1882 was only $94,628; this, however, does not constitute the real value of the dust exported, as it is always underestimated on account of the steamers charging so much per cent. extra tariff, and frequently large amounts of the dust are placed in the personal charge of the captain. If the truth were known, the value is probably nearer $500,000 than $100,000. Cartagena receives annually about $600,000 of gold-dust from the Choco (Atrato) regions."

The import of merchandise, specie, and bullion from Colombia into the United States during the fiscal year ended June 30, 1882, was $5,171,455; the domestic export from the latter to the former, $6,719,787; and the re-export of foreign goods, $149,184 worth.

Maritime Movement.—There entered Colombian ports in 1881–'82 altogether 1,059 sailing-vessels, of a joint tonnage of 67,876, and 618 steamers, measuring jointly 765,825 tons.

COLORADO. State Government.—The State officers during the year 1883 were: Governor, James B. Grant, Democrat; Lieutenant-Governor, W. H. Meyer; Secretary of State, Mel-

vin Edwards; State Treasurer, Fred. Walsen; Superintendent of Public Instruction, J. C. Shattuck; State Auditor, John C. Abbott; Attorney-General, B. F. Urmy. Supreme Court: William E. Beck, Wilbur F. Stone, and Joseph C. Helm, Justices.

Legislative Session.—The Legislature convened at the beginning of January, and remained in session about two months. After a prolonged contest, Thomas M. Bowen (Republican) was elected United States Senator for the long term, and H. A. W. Tabor (Republican) for the short term. Among the measures that became laws were the following:

An act to secure the collection and publication of agricultural and other statistics; an act to submit to the people at the next general election for members of the Legislature, amendments to the Constitution relating to the compensation of members, the length of sessions, and the conduct of business; appropriating $318,000 for the ordinary expenses of the executive, legislative, and judicial departments for the years 1883 and 1884; submitting to the people at the election in November, 1883, the question of creating a bonded indebtedness of $300,000 toward the erection of a Capitol; to regulate the working and inspection of coal-mines; creating Delta, Mesa, and Montrose counties from Gunnison; Eagle and Garfield counties from Summit, and Uncompahgre county from Ouray; changing the name of Uncompahgre county to Ouray, and of Ouray county to San Miguel; to enable counties to refund railroad-aid bonds; to provide for the drainage of lands for agricultural and other purposes; to regulate primary elections; to establish a State Bureau of Horticulture; and to establish an insurance department and regulate the insurance companies doing business therein.

Finances.—The reports of the Auditor and State Treasurer show that the financial affairs of the State are in a more satisfactory condition than at any previous period. These reports represent the condition of the State Treasury, Nov. 30, 1882, to be as follows:

Warrants outstanding	$188,551 28
Certificates of indebtedness	95,137 00
Total debt	$283,688 28
Deduct cash in Treasury	188,616 65
Indebtedness over cash in Treasury	$45,071 63
Amount due State on taxes payable Jan. 1, 1883	$417,762 73
Deduct outstanding indebtedness	45,071 63
Balance due above indebtedness	$372,691 10

The above amount, representing what is due the State on taxes payable Jan. 1, 1883, does not include delinquent taxes of former years, from which a large sum will be collected.

The following is a more recent statement:

	Receipts.	Disbursements.
1883:		
April 11th, balance	$293,760 11	.....
April	17,629 51	$16,770 12
May	91,972 72	82,714 99
June	65,450 04	96,287 32
July	23,225 95	19,824 85
August	26,985 75	62,651 83
September	17,378 37	16,978 63
October 22d	9,041 11	9,816 17
		$305,038 91
October 22d, balance	.....	240,399 65
Total	$545,438 56	$545,438 56

The assessed value of property in 1881 was $96,135,305; in 1882, $104,440,683.

State Institutions.—The number of convicts in the Penitentiary, Nov. 30, 1878, was 146, and on the 30th of November, 1880, there were 226, being an increase of nearly 55 per cent. in the two years. The reports of the officers of the Penitentiary show that the number of convicts on the 30th of November, 1882, was 332, an increase of 42½ per cent. during the two years. In January, 1883, there were 329, of whom 36 were life-convicts. So long as there continues to be such a large accession to the number of convicts, requiring frequent enlargement of the institution for their accommodation, the Penitentiary must continue to be a burden to the tax-payers. During the last two years 114 new cells have been constructed, making, in the aggregate, cell accommodations for only 284 prisoners. The erection of a new cell-building has been begun. Several large and substantial buildings have been constructed during the two years. These buildings have all been the work of convict-labor.

The commissioners have estimated the expenses for the years 1883 and 1884 as follows:

Material for two cell buildings	$50,000
Material for building for convicts under contract	5,000
Material for remodeling a building for State workshops	10,000
Appropriation to pay for land already purchased	2,500
Appropriation to pay for more lime-land	3,000
Material for gates, etc., for extension of wall	1,000
Maintenance and expense of prison	223,380
	$304,880
Earnings estimated for two years	100,000
Appropriation asked	$204,880

An additional building for the Mute and Blind Institute has been erected at a cost of over $20,000. The number of inmates at the beginning of the year was 44. A new building for the Insane Asylum at Pueblo is in course of erection. When this is completed, there will be accommodation for 125 patients.

During the two years ending Nov. 30, 1882, 57 patients were received and 46 discharged, making a net gain of 11, which, added to the number on hand at the beginning of the term, 38, makes 49. The percentage of recoveries has been about 53.

The Legislature, in 1881, provided for the establishment of the State Industrial School at Golden. Its purposes were to educate and reform young persons who have fallen into the ways of crime, rather than to confine them in jails. The large number who have been sent there by the various district courts and police magistrates throughout the State, shows that the greatest necessity existed for such an institution. The report of the officers of the school shows that 81 pupils had been sent there at the close of 1882; that the terms of five had expired, and that there were then 75 pupils at the institution.

Education.—The rapid increase in population during the past two years has occasioned the organization of many new schools. About 100

new districts have been organized, and nearly as many school-houses have been erected. Many of these buildings are large, expensive structures. There are 370 school-houses in the State, valued at $1,235,491, having seating capacity for 26,470 pupils. According to the school census of 1882, there were in the State 49,208 children between the ages of 6 and 21 years, of which number 31,738 were enrolled in the public schools. The permanent school fund of the State now amounts to $75,200.37, being an increase during the past two years of about $40,000. This fund is invested in interest-bearing State securities, and the interest received therefrom, together with money received from the rental of school lands, is distributed to the several counties of the State according to the school population. During the past two years $30,604.68 of such money has been thus distributed. The State Library contains 7,107 volumes.

The university at Boulder was the first educational institution established by the Legislature. The number of students now exceeds 100, and six were graduated from the classical course of the college department in 1882.

The report of the State School of Mines shows that the number of students is more than double that of two years ago.

The agricultural interests of the State, which until recently have been overshadowed by mining and other interests, are now beginning to command attention. Now the climate is understood, irrigation is practiced intelligently, and the appliances for destroying the pest of farming communities are well understood. But owing to the scarcity of water for irrigation, only a limited amount of lands can be cultivated, and Colorado can never become an agricultural State. The first State Legislature established an Agricultural College at Fort Collins. Under the economical supervision of the managers, very commendable results have been attained with the appropriations made by the State. The present value of the college property, at what is considered a low estimate, is as follows:

Buildings and farm	$28,960 00
Fixtures and personal property	21,611 12
Total	$50,571 12
The cost to the State has been	43,000 00

The number of students in attendance in 1881 was 62; in 1882 there were 95. The college farm, which contains 240 acres, has been fenced, irrigating-ditches have been constructed, and a portion of the land has been brought under cultivation. Some blooded stock has been procured, and many trees planted. In September, 1882, a department of mechanics and drawing was established.

Mining.—The following table gives the product of precious metals at the periods named:

YEAR.	Gold.	Silver.	Copper.	Lead.	Total.
1859-'70	$27,213,081 00	$330,000 00	$40,000 00	.....	$27,583,081 00
1870	2,000,000 00	650,000 00	20,000 00	.....	2,680,000 00
1871	2,000,000 00	1,029,046 00	30,000 00	.....	3,019,046 00
1872	1,725,000 00	2,015,000 00	45,000 00	$5,000 00	3,790,000 00
1873	1,750,000 00	2,135,000 00	65,000 00	28,000 00	4,028,000 00
1874	2,002,487 00	3,096,023 00	90,197 00	73,676 00	5,262,383 00
1875	2,161,475 02	3,122,912 00	90,000 00	60,000 00	5,434,387 02
1876	2,726,815 82	3,315,592 00	70,000 00	80,000 00	6,191,807 82
1877	3,148,707 56	3,726,379 83	93,796 64	247,000 00	7,216,283 53
1878	3,490,384 86	6,341,807 81	89,000 00	686,924 73	10,558,116 90
1879	3,193,500 00	15,335,000 00	.....	582,362 00	19,110,862 00
1880	3,206,500 00	18,615,000 00	.....	1,678,500 00	23,500,000 00
1881	.....	.....	.....	.....	22,203,508 72
1882	.....	.....	.....	.....	26,000,000 00
					$166,607,575 99

The following is a condensed tabulated statement of the bullion output of Lake county and Leadville from 1860 to Jan. 1, 1883, and is as nearly correct as it is possible to make it:

FIRST PERIOD.	
1860-'70, gold from placers	$6,400,000 00
1874, gold and silver	145,000 00
1875, gold and silver	113,000 00
1876, gold, silver, and lead	85,000 00
1877, gold, silver, and lead	555,330 00
1878, gold, silver, and lead	3,152,925 00
Total	$10,451,255 00
SECOND PERIOD.	
1879, gold, silver, and lead	$10,333,740 69
1880, gold, silver, and lead	14,187,697 00
1881, gold, silver, and lead	13,170,576 00
1882, gold, silver, and lead, first quarter	4,048,618 00
1882, gold, silver, and lead, second quarter	3,769,300 00
1882, gold, silver, and lead, third quarter	4,575,340 00
1882, gold, silver, and lead, fourth quarter (estimated)	4,000,000 00
Total	$54,085,271 69
Grand total	$64,536,526 69

Coal-mining is fast becoming one of the chief industries of this State. The counties of Las Animas, Fremont, Boulder, Jefferson, Gunnison, Huerfano, El Paso, Park, and La Plata are large producers of coal. The following table will be of interest as showing the growth of the coal output of the leading mines of southern Colorado, from the time they were opened to the end of the year 1882:

	Tons.		Tons.
1873	12,187	1878	82,140
1874	18,092	1879	120,102
1875	15,278	1880	221,373
1876	20,316	1881	350,944
1877	44,410	1882	511,239

No exact figures concerning the output of the coal-mines of northern Colorado have been obtainable. It is safe to say, however, that the product of the Welch banks, at Louisville, and the Boulder valley, at Erie, have been increased 50 per cent. over 1881. The Star and

Marshall banks, as well as the South Park mines, at Como, likewise show an increase.

The Gunnison anthracite coal-fields near Crested Butte have been recently brought under development. The coal is a red-ash, free-burning anthracite, resembling most nearly the Lykens valley coal of Pennsylvania.

Agriculture and Stock-raising.—The acreage of southern Colorado was 149,509; value of products, $2,862,595. The acreage of northern Colorado was 342,998; value, $6,905,374.

RECAPITULATION OF AGRICULTURAL PRODUCTS FOR THE YEAR 1882.

ARTICLES.	Acreage.	Number of bushels.	Value.
Wheat	101,125	1,583,740 at $0 85	$1,303,679
Oats	34,951	1,088,287 at 60	649,972
Corn	30,475	600,058 at 55	510,050
Barley	10,516	261,185 at 1 00	261,185
Rye	4,335	78,080 at 1 10	85,888
Potatoes	8,655	844,000 at 75	633,000
Hay	264,950	256,450 at 15 00*	3,846,750
Vegetables	35,000	..... at 60 00	2,100,000
Small fruits	2,500	..... at 150 00	377,500
Total	492,507	.....	$9,767,969

* Tons.

The extent of territory devoted to cattle-raising has become very large, and there is range enough in this State to support 1,500,000 cattle. The assessors return the number of cattle now in the State as less than 500,000, but it is not believed that these reports are correct. The following table gives the assessors' returns for a number of years:

Cattle in 1871	145,916	Cattle in 1880	541,563
Cattle in 1875	299,515	Cattle in 1881	411,970
Cattle in 1878	493,279	Cattle in 1882	428,948
Cattle in 1879	522,585		

But that there were in 1878–'80 more cattle than at present is doubtful. It is claimed that the vast region between the Gunnison and Grand rivers on the north, and the Uncompahgre, the Dolores, and the San Miguel on the east and south, extending 50 miles in one direction and 150 in another, and comprising nearly 5,000,000 acres, furnishes an excellent and almost unoccupied region for stock-growing. It is reached by the Denver and Rio Grande railroad, and is within driving distance from the Union Pacific.

According to estimate, 100,000 head were, in 1882, shipped out of the State, while the home consumption amounted to 60,000. The value of these is placed at above $6,000,000.

According to the assessors' returns, there were, in 1882, 11 per cent. more sheep in Colorado than a year before. The assessors returned in 1879, 779,229; in 1880, 782,629; in 1881, 624,502; and in 1882, 706,048. It is thought that the number of sheep now in the State is over 1,000,000. Their value is estimated at $2,500,000. It is estimated that during 1882 the wool-clip amounted to 5,000,000 pounds, worth $1,000,000; and that 100,000 wethers, worth $350,000, were consumed or shipped to Eastern markets—a total income from sheep of $1,350,000.

There is considerable difference between the sheep of the southern part of the State and those of the northern part, the latter being much the better. In a division of this kind, Colorado Springs is about on the dividing line.

Railroads.—The rapid growth of the railroad system of the State is shown in the annexed table:

	Miles.		Miles.
1870	157	1877	1,045
1871	323	1878	1,165
1872	468	1879	1,208
1873	603	1880	1,581
1874	682	1881	2,208
1875	807	1882	3,068
1876	957		

The subjoined table shows the miles in operation at the beginning of 1883:

	Miles.
Union Pacific and branches	1,170
Denver and Rio Grande	1,281
Atchison, Topeka and Santa Fé	281
Burlington	182
Denver and New Orleans	134
Denver, Utah and Pacific	40
Total	3,068

Temperance.—A State Temperance Convention was held in Denver in October, which adopted a platform containing the following:

We recognize it to be the duty of every real friend of humanity and all true reform, to refrain totally from the use of alcoholic drink of every description, and that no countenance be given to its manufacture or sale by license, either high or low; and that the only proper and just way to treat such a monster evil is to prohibit it by the plainest and strongest statutes, enforced by the severest penalties, just as all other crimes are dealt with in the body politic.

Resolved, That steps should at once be taken to prepare a bill providing for an amendment to the Constitution of this State, having prohibition for its foundation, and that a committee of five be appointed by this convention to further this end.

State Capital.—At the general election in November, 1881, the city of Denver was selected as the permanent capital of the State. The litigation which has been pending for several years past concerning the title of the State to the block on Capitol hill, known as "Capitol square," has been finally determined in favor of the State by the Supreme Court of the United States.

Resources and General Condition.—Colorado, now in its twenty-fifth year, counts a settled population of 300,000, and a taxable valuation of $110,000,000, representing an actual property value of $200,000,000. It is traversed by nearly 3,000 miles of railroad. Its growth in importance as a grazing State becomes yearly more manifest by its largely increased shipments of live-stock, while its available farming area is being constantly added to by the rapid extension of its system of irrigating canals. Not so generally understood, however, is the vast extent of its coal and iron deposits, now in the first stage of development.

The area of the State is, in round figures, 104,000 square miles, distributed (approximately) as follows:

Agricultural lands	6,000,000
Pastoral lands	25,000,000
Mineral and timber lands	35,000,000

Statistics.—The mileage and assessment of railroads have been as follow:

YEAR.	Miles.	Assessed value.
1878	1,065·68	$5,013,685
1879	1,216·60	7,687,459
1880	1,385·61	8,688,663
1881	1,584·10	11,638,055
1882	2,245·29	17,788,153
1883	2,750·76	20,146,864

The total assessed number of live-stock in the State is: Cattle, 511,940; sheep, 834,127; other stock, 110,045. Assessed value, $12,321,109.

It is believed that this does not represent over 50 per cent. of the stock actually within the State.

The gross product of the State from all sources, for the year 1882, was as follows:

Gold, silver, and lead bullion	$26,750,800
Agriculture	9,175,000
Coal and coke	5,000,000
Iron and steel	4,500,000
Cattle, sheep, hides, and wool	5,000,000
Manufactures	10,000,000
Total	$60,425,800

The State has no bonded debt. Its total indebtedness on Nov. 24, 1883, consisted of

Warrants outstanding	$524,045
Certificates of indebtedness	19,836
Total	$543,881

The revenue of the State for the current year (collectable January, 1884, and thereafter) will amount to $588,125.

The annual bullion shipments for five years were:

1878, gold, silver, and lead	$10,556,116
1879, gold, silver, and lead	19,110,862
1880, gold, silver, and lead	23,500,000
1881, gold, silver, and lead	22,203,500
1882, gold, silver, and lead	26,750,800

The mining products of Colorado for the year 1883 (gold, silver, copper, and lead) were:

COUNTY.	Amount.	COUNTY.	Amount.
Boulder	$400,000	La Plata	$128,000
Chaffee	800,000	Ouray	700,616
Custer	800,720	Park	400,000
Clear Creek	2,000,000	Pitkin	125,000
Dolores	200,008	Rio Grande	182,000
Eagle	930,000	Routt	75,000
Fremont	20,000	Saguache	100,001
Gilpin	2,208,980	San Miguel	225,000
Grand	10,000	San Juan	418,955
Gunnison	650,000	Summit	350,000
Hinsdale	390,000		
Lake	18,691,208	Total	$26,806,131

The State Engineer says: "The mileage of new irrigating canals completed since June 1, 1882, and those still under construction Dec. 1, 1883, is as follows:

	Miles.
Arapahoe county	86
Douglas county	15
Larimer county	104
Weld county	135

A total of 340 miles, which it is estimated will bring under water 350,000 fresh acres. Large additions are also being made to the system in Rio Grande, Conejos, and Costilla, and canals have been begun in the new counties of Mesa, Montrose, and Delta, all of which will greatly increase the available acreage next year."

COMMERCE AND NAVIGATION, AMERICAN. The total volume of foreign commerce in the year ending June 30, 1883, was larger than in any year in the history of the country, exceeding by about $2,000,000 that of 1881. The total value of the exports and imports of merchandise in 1883 was $1,547,020,316. Compared with the commerce of other countries it is only exceeded by that of Great Britain, which aggregated $3,497,000,000 in 1882, and that of France, where the special commerce in 1882 amounted to $1,713,000,000; exceeding in volume that of Germany, which in 1881 amounted to $1,480,000,000. Including the imports and exports of specie, the total volume of the foreign commerce in 1883 was $1,607,330,040, being less than in 1881, when it aggregated $1,675,024,318, and less also than in 1880, when it was $1,613,770,633, but greater than in 1882, when it was $1,567,071,700. In 1874 the borrowing period which followed the war came to an end, and the extension of railroads greatly facilitated the exportation of agricultural products. Since that year there has been a constant excess of exports over imports, and since 1876 a large annual excess of merchandise exports. The entire movement of foreign commerce for these ten years is shown in the following tables. The value of the total exports and imports of merchandise, with the annual excess of exports or imports, was each year as follows:

YEAR.	Exports.	Imports.	Excess of exports.
1874	$536,283,040	$567,406,342	$18,876,698
1875	513,442,711	533,005,436	19,562,725*
1876	540,384,671	460,741,190	79,643,481
1877	602,475,220	451,323,126	151,152,094
1878	694,865,766	437,051,582	257,814,284
1879	710,439,441	445,777,775	264,661,666
1880	835,638,653	667,954,746	167,683,912
1881	902,377,346	642,664,628	259,712,718
1882	750,542,257	724,639,574	25,902,683
1883	823,889,402	723,180,914	100,658,488

* Excess of imports.

The annual values of domestic products exported and of foreign commodities re-exported, in the total values given above, were as follow:

YEAR.	Domestic exports.	Foreign exports.
1874	$569,433,421	$16,849,619
1875	499,284,100	14,158,611
1876	525,582,247	14,802,424
1877	589,670,224	12,804,996
1878	680,709,268	14,156,498
1879	698,340,790	12,098,651
1880	823,946,358	11,692,305
1881	883,925,947	18,451,399
1882	733,289,732	17,302,525
1883	804,223,682	19,615,770

The total value of gold and silver coin and bullion imported and exported, and the annual net exports or imports of specie, were as follow:

YEAR.	Exports.	Imports.	Excess of exports.
1874	$66,630,405	$28,454,906	$38,175,499
1875	92,132,142	20,900,717	71,231,425
1876	56,506,302	15,936,681	40,569,621
1877	56,162,237	40,774,414	15,387,823
1878	38,740,125	29,821,314	8,918,811
1879	24,997,441	20,296,000	4,701,441
1880	17,142,919	93,034,310	75,891,391*
1881	19,406,847	110,575,497	91,168,650*
1882	49,417,479	42,472,390	6,945,089
1883	31,820,333	28,489,391	3,330,942

* Excess of imports.

The total value of exports and imports, including specie, with the annual excess of exports, was each year as follows:

YEAR.	Exports.	Imports.	Excess of exports.
1874	$652,913,445	$595,861,248	$57,052,197
1875	605,574,858	553,906,158	51,668,700
1876	596,890,973	476,677,871	120,213,102
1877	658,687,457	492,097,540	166,589,917
1878	728,605,891	466,872,846	261,733,045
1879	735,436,882	466,073,775	269,363,107
1880	852,781,577	760,989,056	91,792,521
1881	921,784,193	753,240,125	168,544,068
1882	799,959,736	767,111,964	32,847,772
1883	855,659,735	751,670,305	103,989,430

Classification of Exports.—The exports of each of the general classes of domestic products in 1883, as compared with the preceding fiscal year, were as follow:

DOMESTIC EXPORTS.	1882.	1883.
Agricultural products	$552,319,819	$619,269,449
Manufactures	103,132,481	111,890,001
Mineral products	56,278,887	51,444,857
Products of the forests	9,138,984	9,976,143
Products of the fisheries	6,197,752	6,276,375
All other commodities	6,271,859	5,366,807
Total	$733,239,732	$804,223,632

The agricultural exports constituted 77 per cent. of the total exports of domestic produce; manufactures, 13·91 per cent.; products of the mines and petroleum, 6·40 per cent.; forestry products, 1·24 per cent.; products of the fisheries, 0·78 per cent.; and all other commodities, 0·67 per cent.

The increased exportation of domestic merchandise in 1883, over that of the preceding year, was due to the more abundant crops. The increased exportation of cotton and cereals not only accounts for the increment, but, with an increase in the value of manufactured products exported, makes good a large decrease in the exports of provisions, due in part to the failure of the corn-crop in 1881 and in part to the prohibition of American pork products by Continental governments; and offsets, moreover, a very considerable falling off in the value of the petroleum exports, mainly due to excessive production and a decline in price.

From the founding of the republic to the civil war, agricultural products constituted usually over 80 per cent. of the total annual exports of domestic merchandise. During the ten years, 1870–'79, they averaged about 77 per cent., the percentage which they bore in 1883. The vast exports of grain in 1880 and 1881, from superabundant crops, to supply the deficiency of the crops in Europe, brought the percentage up to 83·25 and 82·63; while in 1882, with a diminished yield in the United States and better harvests in Europe, it fell below the average, to 75·31 per cent.

The four main classes of agricultural products—breadstuffs, raw cotton, provisions, and tobacco—with mineral-oil, constitute the five leading classes of domestic exports. Cotton was for half a century or more by far the most important, until the exports of grain and provisions increased, after the great extension of railroads. In 1878 the grain exports began to exceed in value those of cotton, but in 1882, when the grain-crop had suffered more than the cotton-crop, and again in 1883, with a better grain-crop, cotton reasserted its supremacy. The annual exports of these five leading classes of domestic products in the past ten years were as follow:

YEAR.	Breadstuffs.	Cotton, raw.	Provisions.	Mineral-oil.	Tobacco, and manufactures of.
1874	$161,198,864	$211,223,580	$78,328,990	$41,245,815	$32,968,528
1875	111,458,265	190,688,625	81,348,401	30,078,568	27,844,470
1876	131,181,555	192,659,262	89,881,747	32,915,786	25,570,538
1877	117,806,476	171,118,508	114,991,749	61,789,488	32,020,214
1878	181,777,841	180,081,484	123,564,202	46,574,974	28,484,483
1879	210,355,528	162,304,250	116,858,650	40,305,249	28,215,240
1880	288,036,835	211,585,905	127,043,242	36,218,625	18,442,273
1881	270,332,519	247,695,746	151,528,268	40,315,609	20,578,884
1882	182,670,528	199,812,644	120,655,701	51,232,706	21,430,869
1883	208,040,850	247,328,721	107,388,287	44,913,079	22,095,229

The value of the exports of products of manufacture in 1883 amounted to $111,890,001, as against $103,132,481 during the preceding year, and was larger than during any previous year in the history of the country, having increased from $45,658,873 in 1860. The exports of manufactured articles constituted, however, only 2 per cent. of the total annual value of manufactures produced in the country, according to the census of 1880.

Agricultural Exports.—The following is a list of the values exported during the year ending June 30, 1883, of the principal articles of export which are products of domestic agriculture:

ARTICLES.	Values.
Cotton, unmanufactured	$247,328,721
Bread and breadstuffs	208,040,850
Provisions	107,388,287
Tobacco, unmanufactured	19,438,066
Animals, living	10,789,263
Oil-cake	6,061,609

ARTICLES.	Values.
Hops	$5,616,870
Seeds	4,311,919
Tallow	3,248,749
Hides and skins	1,220,158
Hair, unmanufactured	488,897
Lard-oil	358,184
Hay	261,614
Cotton-seed oil	216,779
Sugar, brown	148,957
Wine	77,280
All other agricultural products	4,828,551
Total	$619,269,449

In the class of bread and breadstuffs, the exports of wheat amounted to $119,879,341; wheat-flour to $54,824,459; Indian corn to $27,756,082; rye to $1,657,998; maizena, farina, and similar food preparations to $987,829; Indian-corn meal to $980,798; bread and biscuit to $829,281; and barley, oats, and other small grain and pulse and rye-flour, together, to $1,125,062.

Of the live-animal exports, horned cattle represented $8,341,431; sheep, $1,154,856; mules, $486,560; horses, $475,806; hogs, $272,516; and other animals and fowls, $58,099.

The fruit exports comprised apples of the value of $1,085,230; dried apples of the value of $786,800; other fresh and dried fruit of the value of $447,395; and canned or preserved fruit of the value of $686,517.

Of the total value of the exports of provisions, bacon and hams represented $38,155,952; lard, $26,618,048; cheese, $11,134,526; fresh beef, $8,342,131; pork, $6,192,268; preserved meats, $4,578,902; salted and cured beef, $3,742,282; butter, $2,290,665; potatoes and other vegetables, $694,676; and condensed milk, eggs, and fresh mutton, together, $443,657.

Exports of Manufactures.—The following were the principal manufactured articles exported in 1883:

ARTICLES.	Values.
Wood, manufactures of	$20,996,334
Iron and steel manufactures	19,024,894
Cotton, manufactures of	12,951,145
Leather, and manufactures of	7,923,662
Spirits of turpentine	4,366,229
Agricultural implements	3,883,919
Drugs, chemicals, and medicines	3,306,195
Sugar and molasses	3,266,581
Sewing-machines	3,061,639
Tobacco, manufactures of	2,657,168
Spirits, distilled	1,982,888
Cars, railroad	1,900,903
Carriages and carts	1,607,502
Paper and stationery	1,589,908
Copper, manufactures of	1,404,288
Ordnance stores	1,376,611
Clocks	1,316,086
Musical instruments	1,208,612
Books and other publications	1,018,188
Glass and glassware	998,857
Dye-stuffs	877,601
Hemp, manufactures of	799,985
Fancy articles	785,928
Wearing apparel	770,460
Cordage, rope, etc	749,505
Soap	689,126
Mathematical and optical instruments	682,246
India-rubber manufactures	569,296
Beer, ale, and porter	490,442
Paints and painters' colors	470,289
Plated-ware	444,608
Jewelry, etc	422,854
Lamps	408,743
Marble and stone, manufactures of	389,371
Paintings and engravings	$387,157
Wool, manufactures of	366,214
Perfumery	356,016
Starch	325,575
Scales and balances	317,642
Brass, manufactures of	287,847
Printing-presses and type	267,375

The articles not here enumerated which were exported to the value of over $100,000 were stone and china ware, candles, blacking, hats and bonnets, tin and manufactures of, trunks and valises, varnish, brooms and brushes, vessels sold to foreigners, watches, volatile and essential oils, pig-iron, matches, and lime and cement.

Mineral Exports.—The following were the values of the principal articles of export in 1883, which were products of mining, including mineral-oils:

ARTICLES.	Values.
Mineral oil: Refined	$40,555,492
Crude	3,914,941
Residuum	442,646
Coal: Anthracite	2,648,038
Bituminous	1,598,214
Quicksilver	1,020,827
Copper-ore	943,771
Other mining products	325,983
Total	$51,444,857

Exports of Products of Forestry and the Fisheries.—The values of the products of forestry exported in 1883 were as follow:

ARTICLES.	Values.
Timber, sawed and hewed	$3,102,232
Logs, masts, spars, etc	2,401,021
Other wood and timber	294,151
Rosin and turpentine	3,068,132
Tar and pitch	174,686
Ginseng	848,898
Tan-bark	87,528
Total	$9,976,148

The values exported of the various products of the fisheries were as follow:

ARTICLES.	Values.
Oils, animal: Sperm	$290,417
Whale and other fish	115,490
Provisions: Fish, dried or smoked	882,830
Fish, fresh	72,875
Fish, pickled	372,885
Fish, other cured	3,202,412
Oysters	629,686
Spermaceti	66,651
Whalebone	599,550
All other articles	44,129
Total	$6,276,375

Of the non-classified exports of domestic merchandise, amounting to $5,366,807, the principal items were fertilizers of the value of $1,082,501, and furs and fur-skins of the value of $3,935,603.

The values of the various articles imported during the year ending June 30, 1883, were as follow:

ARTICLES.	Values.
Sugar	$91,589,380
Molasses, melada, etc	7,787,065
Wool, raw	10,949,331
Wool, manufactures of	44,274,952
Silk, raw	14,043,340
Silk, manufactures of	36,764,276
Chemicals, dyes, drugs, etc	43,126,285
Coffee	42,050,513
Iron and steel, and manufactures of	40,796,007
Cotton manufactures	36,853,689

ARTICLES.	Values.
Raw cotton	$800,582
Hides and skins	27,640,030
Tin, and manufactures of	23,917,337
Linen manufactures and flax	19,787,542
Fruits and nuts	19,313,041
Tea	17,302,849
India-rubber, gutta-percha, and manufactures of	15,844,302
Breadstuffs and farinaceous food	15,830,605
Wood, and manufactures of	14,957,578
Leather, and manufactures of	13,104,415
Jute and grasses, raw and manufactured	12,606,513
Wines, spirits, and cordials	12,308,307
Tobacco, and manufactures of	11,771,596
Provisions, including eggs, fish, and potatoes	10,653,278
Earthen, stone, and china ware	8,620,527
Fancy goods, perfumery, and cosmetics	8,358,471
Furs, dressed and undressed	7,959,750
Glass and glassware	7,762,542
Precious stones	7,692,885
Products of the United States brought back	6,514,999
Paper materials	5,329,876
Hemp, and manufactures of	5,118,508
Buttons and button materials	4,223,161
Animals, living	4,042,367
Books, engravings, and other publications	3,651,590
Straw and palm-leaf, manufactures of	3,565,187
Paintings, lithographs, and statuary	3,403,574
Metals, and manufactures of, not elsewhere specified	2,897,979
Oils, of all kinds	2,736,758
Watches and watch materials	2,522,111
Hair, and manufactures of	2,496,699
Spices	2,474,088
Household and personal effects of persons arriving from foreign countries	2,315,352
Coal, bituminous	2,085,972
Paper, and manufactures of, not elsewhere specified	1,958,113
Seeds	1,702,345
Salt	1,674,303
Musical instruments	1,652,528
Paints, of all kinds	1,336,229
Bristles	1,228,543
Cocoa	1,213,371
Clothing	1,182,355
Beer, ale, and porter	1,122,010
Marble and stone, and manufactures of	1,011,363
Cork-bark and wood, unmanufactured	933,935
Jewelry, etc	912,625
Guano, except from bonded islands	595,742
Brass, and manufactures of	530,281
Bolting-cloths	418,711
Copper, and manufactures of	394,765
Barks, used for tanning	343,998
All other articles	27,334,337
Total	$723,180,914

The total value of the merchandise entered for consumption, during the fiscal year 1883, was $700,829,673, of which $493,916,384 was dutiable and $206,913,289 free of duty. The total amount of duty collected was $210,687,293, which was a larger sum than was collected in any previous year, except in 1882 and 1872. The average rate of duty collected was 42·64 per cent. of the values of the dutiable merchandise and 30·05 per cent. of the values of both free and dutiable. The average *ad valorem* rate of duty collected in 1882 was 42·75 per cent.; in 1881, 43·25; in 1880, 43·56; in 1879, 44·95; in 1878, 42·81; in 1877, 42·95; in 1876, 44·80; in 1875, 40·69; in 1874, 38·61. The total value of merchandise entered for consumption in 1882 was $716,213,948, of which $505,491,967 was dutiable and $210,711,981 free of duty.

Undervaluation of Imports.—American consuls in Europe report many details of a fraudulent practice of undervaluation in the declarations of the export value of dutiable merchandise brought into the United States, whereby large sums are lost to the Treasury. For the purpose of practicing this method of evasion, the European manufacturers and wholesale dealers maintain agents in the United States, to whom all their shipments are consigned, thus depriving American merchants of their trade by closing the market to the regular importer. The protective intent of the tariff laws can in this way be defeated, for, when the American manufacturer lowers his prices, his foreign competitor need only make his fictitious invoices lower, to retain his advantage. The American agency or commission-house accounts to him for the selling price, so that the consignor sustains no loss by undervaluation. Many foreign houses refuse to furnish price-lists to American purchasers, referring them to their branch establishments in the United States, while some have specially prepared price-lists to show to American merchants. In 1883 the Treasury Department employed experts at various consulates to ascertain the wholesale market value of certain classes of merchandise. Their reports enabled appraising officers at the ports to scrutinize invoices more carefully, which in many cases led to the collection of increased duties and fines. Fictitious discounts and unusual commissions, allowances for pretended defects and imperfections, etc., are among the devices by which goods are got through the custom-house at valuations below the market price, shippers and consignees sharing in the profit. Half the profits from the large trade in silk manufactures with Switzerland are said to be derived from the evaded duties. The consul at Bradford, England, excited the animosity of the manufacturers by reporting instances of undervaluation. The consul at St. Gallen, Switzerland, was threatened with appeals to the Swiss Federal authorities or the United States Congress, against his surveillance over the private business affairs of merchants. At Crefeld, in Germany, lists of prices in dollars are presented to American purchasers of velvets, the prices being payable in New York to the agents of the associated manufacturers. The velvet manufacturers of Basle resort to the practice, which is also common elsewhere, of including in an undervalued invoice a quantity of correctly-valued goods, which the appraisers are to examine first, and then in the hurry of business to pass the lot. The invoicing of East India cashmere wool as common wool, as practiced at Liverpool, illustrates another method of evasion. Silks, aniline dyes, wool, velvets, incandescent lamps, chemicals of several kinds, silver filigree-work, ribbons, gloves, plush, seal-skins, worsted yarns, ladies' cloaks, woolen cloths, paper-hangings, varnishes, fine pottery, cotton ties and hoop-iron, and many other articles, are in the category of fraudulently invoiced imports in respect to which the consuls have particular accounts of undervaluation.

The practice is suspected to be general

throughout Europe, and is not denied by many merchants, some of them of the highest standing, who consider it legitimate thus to defraud the United States revenue, and treat it as an impertinent inquisition for consuls to obtain lists of prices and ascertain the facts of the cost of production, to be communicated to customs officials. The undervaluations range from 10 to 60 per cent.

The Treasury authorities have no remedy against the consignees, even upon evidence of undervaluation, as either civil or criminal actions must be based upon proofs of complicity in the frauds. In most cases, reappraisement is equally fruitless, and is likely to result adversely to the Government in the absence of evidence of the export values in Europe, which is carefully and systematically concealed from the knowledge of the commercial representatives of the United States.

Commercial Intercourse with Foreign Countries.—Of the total export and import trade of 1883, the share of Great Britain was 39·69 per cent.; of France, 10·13 per cent.; of Germany, 7·98 per cent.; of Cuba and the other West India islands, 7·85 per cent.; of British North America, 5·91 per cent.; of Brazil, 3·47 per cent.; of Belgium, 3·29 per cent.; of the Netherlands, 2·01 per cent.; of Mexico, 1·60 per cent.; of Spain, 1·60 per cent.; of China, 1·57 per cent.; of Italy, 1·44 per cent.; of Russia, 1·40 per cent.; of the East Indies, 1·40 per cent.; of Japan, 1·19 per cent.; of Australia, Colombia, the Hawaiian Islands, Spanish possessions other than Cuba and Porto Rico, the Argentine Republic, Guiana, and Venezuela, between one half and 1 per cent. each; of Central America, Portugal, Hong-Kong, Uruguay, the Dutch East Indies, Denmark, Austria, Sweden and Norway, British South Africa, Turkey, Chili, and Peru, between one fifth and one half of 1 per cent.

COUNTRIES.	Imports into the United States.	Exports from the United States.	Exports in excess of imports.
	Dollars.	Dollars.	Dollars.
Great Britain and Ireland	188,622,619	425,424,174	236,801,555
Russia	2,599,995	19,141,751	16,541,756
Spain	7,794,845	16,931,987	9,136,942
Germany	57,377,728	66,169,929	8,792,201
Mexico	8,177,123	16,587,620	8,410,497
Netherlands	12,258,733	18,919,583	6,665,850
British possessions in Australasia	4,021,395	9,795,656	5,774,261
Belgium	23,161,200	27,778,975	4,617,775
Portugal	1,093,476	5,485,037	4,391,561
Denmark	302,886	4,508,876	4,205,990
Chili	435,584	2,860,496	2,424,912
Hong-Kong	1,918,894	3,777,759	1,858,865
British North American possessions	44,740,876	46,580,253	1,839,377
United States of Colombia	5,171,455	6,868,971	1,697,516
Sweden and Norway	1,831,171	2,824,548	993,377
Gibraltar	.....	.....	.....
British possessions in Africa	1,840,020	2,438,069	598,049
Azore, Madeira, and Cape Verd Islands	.....	.....	.....
Miquelon, Langley, and St. Pierre Islands	.....	.....	.....
Danish West Indies	.....	.....	.....
Hayti	2,971,515	3,223,101	251,586
Liberia	.....	.....	.....
French Guiana	.....	.....	.....
Portuguese possessions in Africa	.....	.....	.....
Other countries	859,881	3,141,714	2,281,833
Total	365,173,846	682,457,799	317,283,953

The foregoing table gives the values of the imports of merchandise from and exports to those countries in the commerce with which, in 1883, there was a balance in favor of the United States.

The following table exhibits the commerce in 1883 with those countries the imports from which exceeded in value the merchandise exported to them from the United States:

COUNTRIES.	Imports into the United States.	Exports from the United States.	Imports in excess of exports.
	Dollars.	Dollars.	Dollars.
Cuba	65,544,534	15,103,703	50,440,831
France	97,989,164	58,682,223	39,306,941
Brazil	44,488,459	9,252,094	35,236,365
British East Indies	19,467,800	2,185,804	17,281,996
China	20,141,331	4,080,322	16,061,009
Japan	15,098,890	3,376,434	11,722,456
Spanish possessions, other than Cuba and Porto Rico	10,617,563	324,474	10,293,089
Hawaiian Islands	8,238,461	3,776,065	4,462,396
British Guiana	5,946,429	2,035,156	3,911,273
Venezuela	5,901,724	2,403,705	3,498,019
Porto Rico	5,477,493	2,164,708	3,312,785
Central American States	5,121,315	2,003,467	3,117,848
Argentine Republic	6,192,111	3,543,196	2,648,915
Uruguay	3,980,110	1,452,818	2,527,292
Peru	2,526,918	493,894	2,033,024
Italy	11,909,658	10,313,558	1,596,100
Austria	2,984,923	1,779,904	1,205,019
French West Indies	2,895,857	1,813,555	1,082,302
Turkey	2,168,967	1,369,703	799,264
Dutch West Indies	.....	.....	.....
Dutch East Indies	2,645,917	2,407,131	238,786
British West Indies	8,736,112	8,502,153	233,959
San Domingo	1,417,519	1,201,874	215,645
All other countries	8,515,813	3,115,662	5,400,151
Total	358,007,068	141,381,603	216,625,465

Trade of the Principal Customs Districts.—The export and import trade of the port of New York in 1883 amounted to $857,430,637, being 55·43 per cent. of the total value of the foreign commerce of the United States. The exports from that port were of the total value of $361,425,361; the imports of the value of $496,005,276. The foreign commerce of Boston amounted to $134,908,824, or 8·72 per cent. of the total commerce of the country, the exports from there being valued at $62,356,749 and the imports entering that port at $72,552,075. The share of New Orleans in the total commerce was $104,704,076, or 6·77 per cent., of which $95,107,314 were exports and only $9,596,762 imports. The share of San Francisco was $90,661,950, or 5·86 per cent., divided into exports of the value of $44,959,420 and imports of the value of $45,702,530. Philadelphia's commerce amounted to $71,886,300, 4·65 per cent. of the total, $38,147,744 being exports and $33,738,556 imports. Baltimore's share was $69,602,530, or 4·50 per cent., of which $55,003,351 were exports and $14,599,179 imports. Galveston, Savannah, Charleston, and Norfolk exported $29,629,047, $22,813,347, $22,573,227, and $18,445,548, and

imported $1,511,712, $483,281, $498,891, and $186,355, their respective shares in the total foreign trade being 2·10, 1·50, 1·49, and 1·29 per cent.

The value of the imports of merchandise at interior points of the United States without appraisement at ports of first arrival was, during the last fiscal year, $16,594,934, as against $13,360,066 during the previous year. The total value of the direct exports from Chicago to foreign countries amounted to $33,750,000 during the year 1882. In 1883 the exports of Chicago are reported as $3,723,548 and the imports as $649,090. The exports from Minneapolis, St. Louis, and other interior points which are shipped direct to foreign countries are not officially reported. From Huron, Mich., and the district of Minnesota, exports were shipped of the value of $10,948,590 and $7,169,185, the imports entered at those districts being $2,906,247 and $1,085,213; while at Oswego, N. Y., and Vermont district imports were received of the values of $8,341,324 and $6,194,886, the amounts of their exports being respectively $1,465,170 and $1,809,521. The proportional shares in the aggregate commerce of the United States in 1883 borne by those customs districts which transacted less than 1 per cent. and more than $\frac{1}{10}$ of 1 per cent. of the total were as follow: Huron, 0·90 per cent.; Oswego, 0·63; Minnesota, Minn., 0·53; Vermont, Vt., 0·51; Buffalo Creek, N. Y., 0·37; Portland, Me., 0·33; Champlain, N. Y., 0·33; Wilmington, N. C., 0·32; Detroit, Mich., 0·31; Chicago, Ill., 0·28; Willamette, Ore., 0·26; Richmond, Va., 0·22; Niagara, N. Y., 0·21; Mobile, Ala., 0·21; Miami, Ohio, 0·20; Oregon, Ore., 0·19; Oswegatchie, N. Y., 0·19; Corpus Christi, Tex., 0·18; Brazos de Santiago, Tex., 0·14; Pensacola, Fla., 0·14; Puget Sound, Wash., 0·12; Brunswick, Ga., 0·10; Yorktown, Va., 0·10.

Shipping and Navigation.—The aggregate tonnage of the American merchant marine in 1883 and the three years preceding, compared with the tonnage at quinquennial periods since 1850, was as follows:

YEAR.	Sail.	Steam.	Total.
	Tons.	Tons.	Tons.
1850	3,009,507	525,947	3,535,454
1855	4,441,716	770,285	5,212,001
1860	4,485,981	867,937	5,353,868
1865	4,029,643	1,067,139	5,096,782
1870	3,171,412	1,075,095	4,246,507
1875	3,685,064	1,168,668	4,853,732
1880	2,856,476	1,211,558	4,068,034
1881	2,792,736	1,264,998	4,057,734
1882	2,810,107	1,355,826	4,165,933
1883	2,822,293	1,413,194	4,235,487

Under sailing-vessels in the above returns are included barges and canal-boats, the tonnage of which in 1883 amounted to 435,736 tons. The shipping which constituted the mercantile marine of the United States was distributed between the foreign and coasting trades and the fisheries as follows:

	Tons.
Foreign trade	1,269,681
Coasting trade	2,838,354
Whale-fisheries	32,414
Cod-fisheries	95,038
Total	4,235,487

The tonnage of sailing and steam vessels built in the United States in 1883 and the three years preceding was as follows:

YEAR.	Sailing-vessels.	Steam-vessels.	Total tonnage.
1880	78,556	78,853	157,409
1881	162,388	118,070	280,458
1882	160,427	121,842	282,269
1883	158,200	107,229	265,429

There were built in 1883 33 ships, against 31 in 1882, 29 in 1881, 37 in 1879, 71 in 1877, 114 in 1875, and 28 in 1873; 2 brigs, against 2 in 1882, 3 in 1881, and 10 in 1879; 567 schooners, against 473 in 1882, 317 in 1881, 256 in 1879, 337 in 1877, 502 in 1875, and 611 in 1873; and 227 sloops, canal-boats, and barges, against 363 in 1882, 314 in 1881, 494 in 1879, 352 in 1877, 340 in 1875, and 1,221 in 1873. The number of steam-vessels constructed in 1883 was 439, 502 in 1882, 444 in 1881, 335 in 1879, 265 in 1877, 323 in 1875, and 402 in 1873. Of the total tonnage of vessels built in 1883 there were built on the seaboard 210,349 tons, against 188,083 in 1882; on the New England coast alone, 110,226 tons, against 93,965 in 1882; on the Mississippi river, 26,443 tons, against 35,817; and on the Great Lakes, 28,638 tons, against 58,369. The tonnage of iron vessels built in 1883 was 39,646, of which 2,033 tons were sailing-vessels; in 1882 40,140 tons, nearly all steam-vessels; in 1881, 28,356 tons; in 1880, 25,582 tons; in 1879, 22,008 tons; in 1878, 28,960 tons; in 1877, 5,927 tons; in 1876, 21,346 tons; in 1875, 21,632 tons; in 1874, 33,097 tons; in 1873, 26,548 tons; in 1872, 12,766 tons; in 1871, 15,479 tons; in 1870, 8,281 tons; in 1868, 4,584 tons; in 1868, 2,801 tons.

The tonnage of American and foreign vessels entered at American seaports each year, from 1864 to 1883 inclusive, was as follows:

YEAR.	American.	Foreign.	Total.
	Tons.	Tons.	Tons.
1864	1,655,434	2,512,047	4,167,481
1865	1,615,317	2,211,610	3,826,927
1866	1,891,453	3,117,034	5,008,487
1867	2,145,691	3,120,695	5,266,386
1868	2,465,695	3,105,826	5,571,521
1869	2,459,336	3,572,644	6,031,980
1870	2,452,226	3,817,963	6,270,189
1871	2,603,591	4,390,606	6,994,197
1872	2,584,646	5,185,340	7,769,986
1873	2,443,285	5,951,464	8,394,749
1874	2,914,942	7,094,713	10,009,655
1875	2,887,153	6,255,985	9,143,138
1876	2,927,780	6,788,124	9,715,904
1877	2,957,791	7,448,697	10,406,488
1878	3,009,437	8,521,090	11,530,527
1879	3,049,744	10,718,394	13,768,138
1880	3,140,169	12,112,160	15,251,329
1881	2,919,149	12,711,392	15,630,541
1882	2,968,290	11,688,209	14,656,499
1883	2,834,681	10,526,176	13,360,857

The share of each nation in the total tonnage entered at American ports in 1883, as compared with 1856, was as follows:

FLAG.	1856.	1883.	Increase.
	Tons.	Tons.	Tons.
British	985,886	6,775,526	5,889,640
German	166,887	1,126,113	959,276
Norwegian and Swedish	20,622	694,240	673,618
Italian	15,677	417,728	402,051
French	23,935	376,890	352,955
Spanish	62,813	254,422	191,609
Austrian	1,477	147,848	146,371
Belgian	200	327,539	327,339
Russian	40	71,950	71,910
Dutch	16,892	165,976	149,084
Danish	5,838	98,954	93,116
Portuguese	4,727	19,493	14,766
All other flags	14,819	49,497	34,678
Total foreign	1,269,763	10,526,176	9,256,413
Total American	3,194,275	2,334,681	859,594*
Aggregate	4,464,038	13,360,857	8,896,819

* Decrease.

Of 1,190 steam-vessels, carrying 44,205,000 bushels of grain from the port of New York during the calendar year 1883, there were 786 British, carrying 29,441,951 bushels; 93 Belgian, carrying 5,734,018 bushels; and 170 German, carrying 4,248,485 bushels; the remainder carrying mostly Dutch, French, Danish, Italian, but none of them American colors. Of 166 sailing-vessels, carrying 4,252,946 bushels, only two were American ships. Out of 113,343,163 bushels carried in 1880, 63,376,584 bushels were shipped from New York by sail, but in 1883 the proportion had declined to 4,252,936 out of 48,457,945 bushels.

The American steam tonnage entering American ports in 1883 was 1,300,727 tons, against 1,356,790 in 1882, 1,240,578 in 1881, 1,195,900 in 1880, 1,118,459 in 1879, 1,092,103 in 1877, 1,141,734 in 1875, 870,192 in 1873, 836,456 in 1870, 298,311 in 1866, and 153,230 in 1864. Of the foreign tonnage 6,646,338 tons were steam in 1883, 7,163,237 in 1882, 6,391,126 in 1880, 3,142,723 in 1875, 1,680,704 in 1870, and 642,576 in 1865.

In 1856 the tonnage of American vessels entered at our seaports from foreign countries amounted to 3,194,275 tons, and constituted 71½ per cent. of the total tonnage entered; and in 1868, three years after the termination of the war, the tonnage of American vessels entered constituted 44·26 per cent. of the total tonnage entered, but of the total tonnage entered at seaports of the United States from foreign countries during the last fiscal year, 79 per cent. consisted of foreign tonnage, and only 21 per cent. of American tonnage.

The amount of American tonnage entered has exhibited but little change since 1868, but the tonnage of foreign vessels entered has increased from 3,105,826 tons in 1868 to 10,526,176 in 1883. In other words, foreign shipowners have been able to secure the entire increase in the foreign carrying-trade of the United States, which increase has been very large. These facts show that the decadence of American shipping is not at the present time due to incidents of the late war, but to causes which are persistent.

The iron ship, especially the iron steamer, has, to a great extent, superseded the wooden ship, and owing to certain conditions of mining, labor, skill, and capital, iron vessels can be more advantageously constructed in Europe, particularly in Great Britain, than in the United States. How small, relatively, is the iron tonnage built in the United States is shown by the fact that during the year 1882 there were 130 iron and steel sailing-vessels built in Great Britain and Ireland, the total tonnage of which was 132,340 tons, and 568 iron and steel steam-vessels built, the total tonnage of which was 520,437 tons, a total of 698 iron and steel sailing and steam vessels, the aggregate tonnage of which was 652,777 tons, or sixteen and a half times the total iron tonnage built in the United States.

The small progress made in the United States in the building of iron and steel vessels is even more strikingly exhibited by the fact that, of the 39,646 tons built in American ship-yards during the year ended June 30, 1883, 18,530 tons were for the home trade, which under the navigation laws of the United States is confined exclusively to American vessels, and only 21,116 tons for the foreign trade, which under the principles of maritime reciprocity, now prevalent among commercial nations, is free to the ships of all nations.

During the fiscal year 1883, 30 per cent. of the exports of merchandise was carried in sailing-vessels, 67 per cent. in steam-vessels, and 3 per cent. in cars and other land vehicles. Of the imports, 24 per cent. was brought in sailing-vessels, 72 per cent. in steam-vessels, and 4 per cent. by land.

During the fiscal year 21·4 per cent. of the exports from the United States of wheat and wheat-flour was from the Pacific coast. The rates of transportation by sea from Pacific coast ports to Europe were exceptionally low during the season of 1883. The current rate on the 5th of November, 1883, from San Francisco to Liverpool, was only £1 12*s.* 6*d.* per ton of 2,240 pounds. This was lower than the average monthly rate during any month since June, 1872. The reduction in the ocean freight rates from the Pacific coast to Europe prevented the expected diversion of wheat to the rail-line from California to New Orleans, to be shipped thence by vessels to European ports. The lowering of the rates by sea was the result of the low quotations of wheat in the European markets, which were due to the large stocks then on hand, and the expectation of supplies from other countries as well as from America.

The percentage of the tonnage entered at all American seaports which was entered at each of the principal ports in 1883, as compared with 1870 and 1860, was as follows:

PORTS.	1860.	1870.	1883.
New York	39·47	49·88	48·27
Boston	14·37	12·66	10·06
Baltimore	5·73	4·84	6·69
San Francisco	4·70	6·29	6·64
Philadelphia	3·70	4·79	6·42
New Orleans	12·65	7·31	5·50
Portland	2·80	2·80	1·35
Galveston	·65	·50	1·15
Savannah	1·35	1·37	1·05
Charleston	2·53	·58	1·01
Mobile	3·22	1·12	·51
All other ports	10·88	8·91	11·35
Total	100·00	100·00	100·00

Railroads and Transportation.—The cost of transporting grain and provisions from the interior to the seaboard is an important element in the foreign commerce of the United States. With the advantage of a level country, and under the spur of competition for such an enormous traffic, between the various trunk lines, among themselves and with alternative water-routes, the system of land-carriage in the United States has been brought to a higher degree of commercial economy and efficiency than that of any other country. The great markets of Europe are more accessible to the farmers of the Western prairies than to those of many parts of the Continent of Europe or of certain farming districts in the British Islands. Besides great reductions in the time and cost of transportation, commerce has been promoted by arrangements made by the railroad lines with one another and with ocean-steamship lines, by which merchandise can be transported over two or more connecting lines from the point of shipment to the point of delivery, without the necessity of any supervision on the part of shipper or consignee. The reduction in the cost of inland transportation has been the main cause of the increase in the value of the exports of cereals from $84,586,273 in 1872, to $208,040,850 in 1883, and in the value of the provision exports from $59,696,670 to $107,388,287. The extent of the reduction can be seen in the following tabular statement of the average freight charges per bushel of wheat from Chicago to New York by the lake, the Erie Canal, and the Hudson river; by the lake to Buffalo and thence by rail to New York city, and all the way by rail, for the calendar years from 1868 to 1882 and for the first ten months of 1883:

YEAR.	Lake and canal.	Lake and rail.	All rail.
	Cents.	Cents.	Cents.
1868	25·3	29·0	42·6
1869	24·1	25·0	35·1
1870	17·5	22·0	33·3
1871	21·6	25·0	31·0
1872	26·6	28·0	33·5
1873	19·2	26·9	33·2
1874	14·2	16·9	28·7
1875	11·4	14·6	24·1
1876	9·7	11·8	16·5
1877	7·5	15·8	20·3
1878	10·1	11·4	17·7
1879	13·0	13·3	17·3
1880	13·2	15·7	19·7
1881	8·6	10·4	14·4
1882	8·7	10·9	14·6
1883	9·16	12·0	16·1

The increase in the rates of 1883 over those of the foregoing year was due to the fact that the grain movement was much larger. The low rates in 1881 were exceptional, being due to the war of rates going on in that year between the trunk lines. The secret "special" rates at which merchandise was transported were actually much lower than the quoted average of 14·6 cents. In 1882 agreed rates were generally maintained. In 1883 the prospects of a smaller crop than in 1882 and of lower export prices caused variations from the schedule rates to be made privately by the different roads, until finally they worked somewhat more harmoniously under a reduced tariff, established by Commissioner Fink.*

CONGREGATIONALISTS. The following is a summary of the statistics of the Congregational churches in the United States as given in the "Congregational Year-Book" for 1883. It includes the additional returns received after the regular tables of the "Year-Book" were made up: Number of churches, 1,024; of ministers, 3,723; number of members, 387,837; of persons in Sunday-schools, 454,968; number of additions during the year by profession of faith, 13,552; number of baptisms, 5,322 of infants, 6,005 of adults. Of the ministers, 919 are returned as pastors and 1,607 as "acting pastors"; of the churches, 2,914 as supplied with pastors, and 1,023 as "vacant." The benevolent contributions reported by 2,994 churches amounted to $1,383,685; the "home expenditures" of 2,256 churches were $2,934,027. The seven theological seminaries, at Andover, Mass., Bangor, Me., Chicago, Ill., Hartford, Conn., Oberlin, O., Oakland, Cal. (Pacific), and New Haven, Conn. (Yale), returned in all 39 professors, 24 instructors and lecturers, and 272 students, with graduating classes of 25 members and 3 "resident licentiates." The Territories of Idaho and Montana are represented in the statistical tables for the first time this year—Idaho with one church of ten members, and Montana with four churches.

American Congregational Union.—The thirtieth annual meeting of the American Congregational Union was held in the city of New York, May 10th. The receipts for the year had been $100,518. Grants amounting to $66,658 had been voted to 150 churches in 25 States and Territories, and grants amounting to $177,268

* The managers of the East and West trunk lines agreed in 1877, after their mutual arrangements had in every instance been disregarded, to submit to Mr. Albert Fink the task of arranging a pool or combination, apportioning a percentage of the total traffic to each road, and fixing the rate to be charged by each. He has continued to discharge the office of arbitrator and intermediary with varying success. The first agreement related to the west-bound freight, but the pooling arrangements have since been extended to almost all the business of the roads. The roads are not restricted as to the quantity of business they do, but the receipts beyond the allotted proportion are paid into the pool and divided. When the traffic is large, the railroads usually keep to their agreements, and their complicated accounts are adjusted through the office of Commissioner Fink; but, when business falls off, evasions are practiced surreptitiously, which are likely to lead to a war of rates, as in 1881, when earnings estimated to amount to $30,000,000 were sacrificed.

had been paid to 91 churches in 23 States and Territories. The sum of $14,404 had been contributed expressly to aid in the building of parsonages; and grants in aid of that object had been made to 14 churches.

American Home Missionary Society.—The anniversary of the American Home Missionary Society was held at Saratoga Springs, N. Y., June 5th. The receipts for the year ending April 1st had been $370,981, which, with a balance of $27,935 in the treasury at the beginning of the year, made the society's entire available resources $398,916. The expenditures in payment of missionaries had been $354,105. The whole number of ministers in the service of the society was 1,150, and by their aid 2,659 congregations and mission districts had been supplied. Three missionaries had served congregations of colored people, 16 had preached in their own language to Welsh, nine to German, and three to French congregations, while two had served Indian congregations. Two thousand and eight Sunday-schools, having 106,638 pupils, were under the special care of missionaries. Two hundred and thirty-three new schools had been formed. One hundred and one churches had been organized, and 43 churches had become self-supporting during the year; and 3,558 members had been received on profession of faith. A woman's department auxiliary to the society had been organized.

American Board.—The seventy-fourth annual meeting of the American Board of Commissioners for Foreign Missions was held at Detroit, Mich., Oct. 2d. The total receipts of the board for the year had been $523,426, or $61,155 more than the receipts of the previous year. From the fund bequeathed by Mr. Otis had been received also, for evangelistic enlargement, $7,613; for educational enlargement, $29,688; and for new missions in Africa, China, and Mexico, $30,286; making in all, $67,568. Adding this sum, the whole amount at the disposal of the Prudential Committee had been $1,591,488. Four missionaries and twelve assistant missionaries had been added during the year to the force in the field, and fourteen returned missionaries, after a period of rest in the United States, had gone back to their work. The following general summary of the condition of the missions is taken from the "Annual Survey" of the board. Number of missions (West Central Africa, Zulu, Umzila, European Turkey, Western Turkey, Central Turkey, Eastern Turkey, Maratha, Madura, Ceylon, Hong-Kong, Foochow, North China, Shanse, Japan, Micronesia, Northern Mexico, Western Mexico, Spain, and Austria), 20; of stations, 80; of out-stations, 742.

Laborers employed.—Number of ordained missionaries (6 being physicians), 154; of physicians not ordained, men and women, 9; of other male assistants, 7; of other female assistants, 263; whole number of laborers sent from the United States, 433; number of native pastors, 144; of native preachers and catechists, 369; of native school-teachers, 1,014; of other native helpers, 300; total of native laborers, 1,827; whole number of laborers connected with the missions, 2,260.

The Press.—Papers printed, as far as reported, 32,000,000.

The Churches.—Number of churches, 278; of church-members, as nearly as can be learned, 19,364; added during the year, 1,737; whole number from the first, as nearly as can be learned, 89,323.

Educational Department.—Number of high schools, theological seminaries, and station-classes, 58, with 2,086 pupils; of boarding-schools for girls, 40, with 1,538 pupils; of common schools, 832, with 31,016 pupils; whole number of pupils, 35,625.

The Missionaries and the Armenian Churches.—The matter of complaints which were made by the members of the churches formed among the Armenians, in the Eastern Turkey mission, against the management and administration of the affairs of the mission, received a full discussion. The subject of the complaint had been brought before the board at the meeting of the previous year, and a committee had been appointed then to inquire into it. This committee had appointed a sub-committee to visit the mission, and by conferences with the Armenian members of the churches and the missionaries to inform themselves at the original sources concerning the nature and merits of the complaints. From the various reports and documents presented it appears that the Armenians considered that their churches had in fact passed out of the stage of mission stations, and had become or were becoming fully developed churches, and they felt that the management of the mission ought to be modified in recognition of the changed conditions. They asked that they be given a general civil and secular organization to meet the requisitions of Turkish law, and a representative ecclesiastical organization; that the missionaries become ecclesiastically connected with the native churches, so as to be in fellowship with them and amenable to church discipline there; that all native institutions connected with the churches should be encouraged by pecuniary help and moral support; that a central theological seminary, equal to those in America, be established, with natives among the teachers and directors, and means be provided for the higher education of young men, cheaper than it can be obtained at Robert College; that a larger proportion of native laborers be enlisted in the departments of evangelistical, literary, and educational work, with a gradual withdrawal of missionaries; and that in the several departments of work, natives should have an equal voice with missionaries in representation on the committees and in the councils, and in discussing and voting on all questions, including those of the appropriation and disposition of funds. After hearing a series of

reports, in which the views of both sides were presented, the board resolved:

1. That in accordance with the suggestion of the visiting deputation that, as a preparation for the withdrawal in our time of its missionaries from the work among the Armenians, the board favor the admission of representatives of native churches in Turkey in conferences concerning the practical work of evangelization, education, and publication, including estimates for necessary expenses, reserving, however, to the mission, as the responsible agents of the board on the field, final action respecting the distribution of funds drawn from the treasury of the board, subject, of course, to the approval of the Prudential Committee.

2. That there is a pressing need for a large-hearted and even generous co-operation with our native brethren everywhere, its particular form and method being shaped by the circumstances of each locality, but such as may assure them of our Christian love, and fit them most speedily to assume the entire support and management of the evangelization of their respective fields.

American Missionary Association.—The thirty-seventh annual meeting of the American Missionary Association was held in Brooklyn, N.Y., October 30th. The ordinary receipts of the society for the year had been $312,567, or $14,983 more than those of the previous year. Further sums amounting to $13,500 had been received toward the endowment funds of the chartered institutions of the association and the proposed Arthrington mission in the region of the Upper Nile, which with $10,918 expended upon Stone Hall, Atlanta University, made the total amount that had been at the disposal of the Executive Committee, $337,003. In the work of rearranging and consolidating the missions of this society and other societies with which it has fraternal relations, the Mendi mission in West Africa, with its special fund and the steamer John Brown, had been transferred to the United Brethren, whose mission at Shengay is contiguous to it. The Arthrington mission, with its fund, had been offered to the Board of the United Presbyterian Church of North America, which was conducting a successful mission in Egypt. That board was ready to take up the mission, and intended to establish its base of operations at Khartoum, while Mr. Arthrington desired to have it pushed farther up the Nile to Fatiko. The Dakota mission of the American Board, with the exception of the Sisseton agency, which had been undertaken by the Home Board of the Presbyterian Church in the United States of America, had been received by this association. It included 4 stations, 9 schools, 5 churches, 12 missionaries, 25 teachers, one native pastor, 12 native teachers, 271 church-members, 356 pupils, and 584 Sunday-school scholars. The old mission of the association in Washington Territory had one missionary, two churches, 36 Indian and 13 white members, and two Sunday-schools, with 95 scholars. The mission to the Chinese in California returned 19 schools, with 40 teachers, 14 of whom were Chinese, and an enrollment of 2,823 pupils. One hundred and seventy-five Chinese had professed to cease from idolatry. Work among the negroes was prosecuted in twelve of the Southern States, and in Kansas and the District of Columbia. The schools include eight chartered institutions in as many States, twelve high and normal schools, and forty-two common schools, which together reported 279 teachers and 9,640 pupils. Seventy students were pursuing a theological course, and twenty a course in law. Departments in industrial training were maintained at Charleston, S. C., Macon and Atlanta, Ga., at Fisk University, Nashville, and at Memphis, Tenn.; and at Talladega, Ala., and Tongaloo, Miss. Six new churches had been added, making the whole number of churches in the South connected with the association 89, with 5,974 members and 9,406 Sunday-school scholars. These churches had raised for church purposes, during the year, $12,027. The Ecclesiastical Association of Mississippi, with six churches, had been added to the State bodies of this character connected with the society, making the whole number eight. They represent an average of eleven churches each.

Triennial Council of the Congregational Churches.—The fifth Triennial Council of the Congregational Churches of the United States met in Concord, N. H., October 10th. About three hundred delegates were in attendance. The Rev. Dr. Arthur Little, of Chicago, was chosen moderator. The council has no authority, but is a voluntary body, for discussion and interchange of reports and opinions in the effort to ascertain the condition and feelings of the churches, and for the purpose of making such recommendations as may seem good to it. Representations were made, with statements of their wants, of the condition of the several Congregational benevolent societies, including the American Board of Commissioners for Foreign Missions, the College and Education Society, the American Missionary Association, the American Home Mission Society, the Congregational Sunday-school and Publishing Society, the American Congregational Union, and the New West Commission. The general statistical returns showed that there had been a net gain in the denomination during the past three years of 262 churches and 5,079 members; that the additions to churches by profession averaged 12,500 annually; that the contributions for Sunday-schools during the past year had amounted to $300,000, and the contributions for charitable objects to more than $6,000,000, and that there were 874 more churches than there were clergymen to supply them. A committee of seven members had been appointed at the previous meeting of the council to select a commission of twenty-five persons for the purpose of framing a creed or statement of belief to be submitted to the churches for their approval. The committee reported that it had appointed the commission, and was discharged. The commission had not yet completed the preparation of a creed. A

resolution was passed urging it to complete and publish its work as speedily as practicable. A resolution was introduced advising that the term "acting pastor" and its abbreviation, "A. P.," be dropped from the nomenclature and statistics of the denomination, and that all ministers in regular connection with some association or conference of churches, or ministers who accept calls to pastorates given by a formal vote of the churches, be enrolled as pastors, and all others be enrolled with their appropriate designations. This gave way to a resolution, which was adopted, directing the secretary, in preparing the "Year-Book," to follow the designations of pastor or acting pastor, adopted in the minutes of the several State bodies. The object of the measure is to remove the distinction previously recognized between pastors who have been installed with the advice of a council and those who have not been so installed. A statement was made respecting the growth of Congregational churches in the South, showing that, while only about twenty churches had been formed among the white people of the South (outside of Missouri and the District of Columbia), nearly one hundred churches had been established among the colored people, and were organized in conferences covering the Southern States. A committee was appointed to prepare a draft of a bill for the establishment of a Bureau of Indian Education, and to press it upon the attention of Congress.

Congregationalists in Great Britain.—The "Congregational Year-Book" for 1883 gives the number of members of the Congregational churches in England and Wales as 387,619, showing a net gain during the year of 1,984. The number of churches was 3,936, and the number of ministers 3,723, of whom 918 were pastors, 1,607 acting pastors, and 1,198 not in pastoral work. The number of baptisms during the year was 5,999 of adults, and 5,322 of infants.

London Missionary Society.—The receipts of the London Missionary Society for 1882 were £127,627, and a balance in favor of the society of £539 was returned on the year's accounts. The number of missionaries in connection with the society was 166, 15 of whom were women. Reports of missionary operations were made at the anniversary in May, from China, Mongolia, India, where 5,804 pupils in schools were returned; Madagascar; South Africa, including the Cape Colony and the country north of the Orange and Vaal rivers, extending almost to the Zambesi; Central Africa, including the country of the Tanganyika lake; the West Indies, including Jamaica and British Guiana; the South Sea islands, including the Samoa and Loyalty groups; Tahiti, and a number of smaller islands; and New Guinea, where, under the direction of four European missionaries and eight teachers, natives of the Loyalty islands, remarkable progress was claimed to have been made in eight years. A deputation had been sent out to visit the mission-fields of the society, beginning with India, and going thence to China and South Africa. Another deputation had been sent out, with a representative delegated by the Congregational Union of England and Wales for the same object, to inquire into the condition of the native churches of Jamaica and British Guiana, from which the society had been gradually withdrawing its aid, but which had asked for continued support. On the recommendation of the deputation, the directors of the society, at a time later than the anniversary meeting, adopted a plan of continued but gradually diminishing support for three years longer.

Congregational Union of England and Wales.—The meeting of the Congregational Union of England and Wales for the spring was held May 11th. The subject of lay agency was discussed, with many expressions in favor of extended lay preaching. A resolution was adopted respecting the Affirmation Bill, declaring:

> That the Assembly hereby records its extreme regret at the reactionary votes by which a majority of the House of Commons has rejected the Affirmation Bill, checked the course of Liberal legislation commenced fifty years ago in the repeal of the Test and Corporation Acts, and carried still further in the Act of Roman Catholic Emancipation and the relief of Jewish disability; and at the same time expresses gratitude to the minority who were faithful to the principle of religious liberty, and especially to their venerated leader, the Prime Minister, for his exposition and defense of those principles with an eloquence so lofty and in a spirit so eminently Christian.

A scheme was adopted relative to examinations of young people on the three subjects of Scripture history and doctrine, Christian evidences, and ecclesiastical polity, and a special committee was appointed to attend to the perfection and execution of it.

The forty-fourth autumnal session of the Union was held in Sheffield, beginning October 9th. The Rev. Principal, A. M. Fairbairn, D. D., presided, and delivered the opening address, the subject of which was "Christianity in the Nineteenth Century." The committee of the Jubilee Fund reported that £100,000 sterling had been added to the fund, and it now stood at £280,000. Of it there had been promised £27,826 to the Congregational Church Aid Society; £125,000 for the liquidation of church debts; £46,781 for Congregational Church extension in London, and £1,830 to various Congregational institutions, besides £17,500 for the liquidation of the debts of the Yorkshire colleges, while £24,000 were not yet appropriated. The special committee appointed at the spring session of the Union, on the subject of the examination of young people in Scriptural knowledge, reported that it had appointed central bodies of examiners on the subjects specified in the scheme approved at that meeting, and had divided the country into eight districts, for each of which a body of eight examiners had been appointed. A report was made of the work of the "Senatus Academicus" of associated theological colleges of England and Wales, which

had been instituted four years previously for promoting a higher standard of theological attainment by means of examinations. Eight Congregational colleges and one Baptist college had entered into the arrangement, and were represented in the Senatus by their professors and three other delegates each. Four annual examinations had been held, at which 69 candidates had presented themselves, 57 of whom had satisfied the examiners.

Congregationalists in Australia.—The Congregational churches of Australia make returns of members as follows: In New South Wales, 48 churches, 12,995 adherents, 6,229 Sunday-school scholars; Victoria, 45 churches, 15,447 adherents, 7,370 Sunday-school scholars; South Australia, 45 churches, 9,860 adherents, 4,390 Sunday-school scholars; Queensland, 20 churches, 5,650 adherents, 2,784 Sunday-school scholars; Tasmania, 29 churches, 4,835 adherents, 2,246 Sunday-school scholars; total, 187 churches, 48,747 adherents, and 23,019 Sunday-school scholars.

The Jubilee of Congregationalism in Australia and Tasmania was celebrated by an intercolonial conference of the churches, which was held in Sydney. The establishment of a Jubilee Fund was determined upon, of $100,000, to be applied to the payment of church debts and the foundation of a Ministers' Relief Fund. Ninety thousand dollars were subscribed to this fund during the sessions of the conference.

Congregationalism in Canada.—As early as 1753 a congregational church gathered in Halifax, N. S. The name by which it was subsequently known, Mather Church, indicates its New England origin. A large Scotch Presbyterian element eventually came into Nova Scotia, and after the revolution settlement—during which many of the old New England settlers returned to their Massachusetts home—a Presbyterian minister was called to the pastorate. Eventually, by act of Parliament, the property of Mather Church was secured to "St. Matthew's Presbyterian Church," and congregationalism lost its identity in Halifax.

The men who planted the British flag over the French forts of Acadie were very largely Massachusetts Puritans, and their chaplains generally accompanied the troops, as the French were Roman Catholics.

At present, there are in the two provinces of Nova Scotia and New Brunswick, with their population of 750,000, twenty-one Congregational churches, sixteen ministers, and an acknowledged adherence of 5,000 souls. By a bequest from Mrs. Gorham, of Liverpool, N. S., a Congregational College was established in that town, but want of sufficient means, with the burning of the college building, has caused that interest to be closed and its funds to be appropriated, as the bequest provided, for mission purposes.

In 1775 a Mr. Jones, a Welshman and a Whitefieldite, connected with the Royal Artillery, gathered a church at St. John's, N. F., which continues to this day in active operation, and is the center of a missionary work in that island. A mission on the Labrador coast is worked from the church at St. John's. There are now one settled pastor and three ordained missionaries in Newfoundland connected with Congregationalism.

In what are known as the Eastern townships of the present province of Quebec, settlers from Massachusetts, New Hampshire, and Vermont came in, forming the nucleus of Congregationalism in that section. The first remembered church gathered on Stanstead plain in a log barn, 1798, near the site of the present church-building. The churches in this locality, though in working connection with the Canadian churches, take much of their tone from the New England brethren, representing the Congregationalism of Massachusetts rather than that of England.

In 1801 Mr. Bentom, sent to the Canadas by the London Missionary Society, established a Congregational church in the city of Quebec. No clergyman other than of the Anglican and Papal communions could lawfully baptize, marry, or officiate in a public burying-ground without license from the authorities, and the license or register was renewed annually. After receiving his register two years, Mr. Bentom was refused the third. For daring to print a pamphlet against this, he was arrested, fined £50, and imprisoned for six months. It was not till several years after that these disabilities were removed by act of Parliament. The Quebec church eventually, like that of Halifax, was merged into a Presbyterian church, though another Congregational interest was immediately started, which continued till the present time, when the Protestant exodus from Quebec has closed it for a season.

Generally speaking, Congregationalism in the present provinces of Ontario and Quebec dates from the arrival, under the auspices of the English Colonial Missionary Society, of Mr. John Roaf in Toronto, and of Dr. Henry Wilkes in Montreal, about 1836. Around these gentlemen gathered the Zion churches, which, for life, liberality, influence, and social rank, were second to none in the provinces. Zion Church, Toronto, after having "hived off" four other churches, has just erected a new building. Emanuel Church, Montreal, is virtually the old Zion of that city. In 1873, scattered throughout the provinces of Ontario and Quebec, 85 churches were reported, 67 ministers, and a membership of 4,500: in 1883 the churches numbered 90, ministers 67, and members 6,000, with two churches established in the new province of Manitoba. Most of the churches and ministers of these provinces are associated in a Union which meets annually for conference only.

There is one theological college connected with the denomination, of which the first tutor or professor was Rev. A. Lillie, D. D., whose

name must be associated with those of Dr. Wilkes and Mr. Roaf in the pioneer work of Congregationalism in the old Canadas.

Congregationalism has proved itself in Canada more powerful as a principle permeating other bodies than as a distinct organization. It can only claim, in a population of 4,250,000, a following of 27,000. Many considerations may tend toward explaining its comparatively small following in an Anglo-Saxon colony, seeing that it is truly the preponderating power in English nonconformity, and has a large place in the churches of the United States. Scotch emigration (700,000 in Canada claim Scottish descent) would represent Presbyterianism, English emigration the Anglican and Methodist churches; the well-to-do class, representing English independence, having hitherto supplied little toward the stream of emigration. Consequent on this, the few who did emigrate would seldom find churches of their own order, and finding no overshadowing establishment in this land of liberty, would, with their catholic spirit, find a home in sister denominations.

CONGRESS, UNITED STATES. The second session of the Forty-seventh Congress began on Monday, Dec. 4, 1882; and the second annual message of the President was submitted, as follows:

To the Senate and House of Representatives of the United States:

It is provided by the Constitution that the President shall from time to time give to the Congress information of the state of the Union, and recommend to their consideration such measures as he shall judge necessary and expedient.

In reviewing the events of the year which has elapsed since the commencement of your sessions, I first call your attention to the gratifying condition of our foreign affairs. Our intercourse with other powers has continued to be of the most friendly character.

Such slight differences as have arisen during the year have been already settled or are likely to reach an early adjustment. The arrest of citizens of the United States in Ireland under recent laws which owe their origin to the disturbed condition of that country has led to a somewhat extended correspondence with the Government of Great Britain. A disposition to respect our rights has been practically manifested by the release of the arrested parties.

The claim of this nation in regard to the supervision and control of any interoceanic canal across the American Isthmus has continued to be the subject of conference.

It is likely that time will be more powerful than discussion in removing the divergence between the two nations, whose friendship is so closely cemented by the intimacy of their relation and the community of their interests.

Our long-established friendliness with Russia has remained unshaken. It has prompted me to proffer the earnest counsels of this Government that measures be adopted for suppressing the proscription which the Hebrew race in that country has lately suffered. It has not transpired that any American citizen has been subjected to arrest or injury, but our courteous remonstrance has nevertheless been courteously received. There is reason to believe that the time is not far distant when Russia will be able to secure toleration to all faiths within her borders.

At an international convention held at Paris in 1880, and attended by representatives of the United States, an agreement was reached in respect to the protection of trade-marks, patented articles, and the rights of manufacturing firms and corporations. The formulating into treaties of the recommendations thus adopted is receiving the attention which it merits.

The protection of submarine cables is a subject now under consideration by an international conference at Paris. Believing that it is clearly the true policy of this Government to favor the neutralization of this means of intercourse, I requested our minister to France to attend the convention as a delegate. I also designated two of our eminent scientists to attend as our representatives at the meeting of an international committee at Paris, for considering the adoption of a common unit to measure electric force.

In view of the frequent occurrence of conferences for the consideration of important matters of common interest to civilized nations, I respectfully suggest that the Executive be invested by Congress with discretionary powers to send delegates to such conventions, and that provision be made to defray the expenses incident thereto.

The difference between the United States and Spain as to the effect of a judgment and certificate of naturalization has not yet been adjusted; but it is hoped and believed that negotiations now in progress will result in the establishment of the position which seems to this Government so reasonable and just.

I have already called the attention of Congress to the fact that in the ports of Spain and its colonies onerous fines have lately been imposed upon vessels of the United States for trivial technical offenses against local regulations. Efforts for the abatement of these exactions have thus far proved unsuccessful.

I regret to inform you also that the fees demanded by Spanish consuls in American ports are in some cases so large, when compared with the value of the cargo, as to amount in effect to a considerable export duty, and that our remonstrances in this regard have not as yet received the attention which they seem to deserve.

The German Government has invited the United States to participate in an international exhibition of domestic cattle to be held at Hamburg in July, 1883. If this country is to be represented, it is important that in the early days of this session Congress should make a suitable appropriation for that purpose.

The death of Mr. Marsh, our late minister to Italy, has evoked from that Government expressions of profound respect for his exalted character and for his honorable career in the diplomatic service of his country. The Italian Government has raised a question as to the propriety of recognizing in his dual capacity the representative of this country recently accredited both as secretary of legation and as consul-general at Rome. He has been received as secretary, but his *exequatur* as consul-general has thus far been withheld.

The extradition convention with Belgium, which has been in operation since 1874, has been lately supplanted by another. The Senate has signified its approval, and ratifications have been duly exchanged between the contracting countries. To the list of extraditable crimes has been added that of the assassination or attempted assassination of the chief of the state.

Negotiations have been opened with Switzerland looking to a settlement by treaty of the question whether its citizens can renounce their allegiance and become citizens of the United States without obtaining the consent of the Swiss Government.

I am glad to inform you that the immigration of paupers and criminals from certain of the cantons of Switzerland has substantially ceased and is no longer sanctioned by the authorities.

The consideration of this subject prompts the suggestion that the act of Aug. 3, 1882, which has for its object the return of foreign convicts to their own country, should be so modified as not to be open to the interpretation that it affects the extradition of criminals on preferred charges of crime.

The Ottoman Porte has not yet assented to the interpretation which this Government has put upon the treaty of 1830 relative to its jurisdictional rights in Turkey. It may well be, however, that this difference will be adjusted by a general revision of the system of jurisdiction of the United States in the countries of the East—a subject to which your attention has been already called by the Secretary of State.

In the interest of justice toward China and Japan, I trust that the question of the return of the indemnity fund to the governments of those countries will reach at the present session the satisfactory solution which I have already recommended, and which has recently been foreshadowed by congressional discussion.

The treaty lately concluded with Corea awaits the action of the Senate.

During the late disturbance in Egypt the timely presence of American vessels served as a protection to the persons and property of many of our own citizens and of citizens of other countries, whose governments have expressed their thanks for this assistance.

The recent legislation restricting immigration of laborers from China has given rise to the question whether Chinese proceeding to or from another country may lawfully pass through our own.

Construing the act of May 6, 1882, in connection with the treaty of Nov. 7, 1880, the restriction would seem to be limited to Chinese immigrants coming to the United States as laborers, and would not forbid a mere transit across our territory. I ask the attention of Congress to the subject for such action, if any, as may be deemed advisable.

This Government has recently had occasion to manifest its interest in the Republic of Liberia by seeking to aid the amicable settlement of the boundary dispute now pending between that republic and the British possession of Sierra Leone.

The reciprocity treaty with Hawaii will become terminable after Sept. 9, 1883, on twelve months' notice by either party. While certain provisions of that compact may have proved onerous, its existence has fostered commercial relations which it is important to preserve. I suggest, therefore, that early consideration be given to such modifications of the treaty as seem to be demanded by the interests of our people.

In view of our increasing trade with both Hayti and Santo Domingo, I advise that provision be made for diplomatic intercourse with the latter by enlarging the scope of the mission at Port-au-Prince.

I regret that certain claims of American citizens against the Government of Hayti have thus far been urged unavailingly.

A recent agreement with Mexico provides for the crossing of the frontier by the armed forces of either country in pursuit of hostile Indians. In my message of last year I called attention to the prevalent lawlessness upon the borders and to the necessity of legislation for its suppression. I again invite the attention of Congress to the subject.

A partial relief from these mischiefs has been sought in a convention, which now awaits the approval of the Senate, as does also another touching the establishment of the international boundary between the United States and Mexico. If the latter is ratified, the action of Congress will be required for establishing suitable commissions of survey. The boundary dispute between Mexico and Guatemala, which led this Government to proffer its friendly counsels to both parties, has been amicably settled.

No change has occurred in our relations with Venezuela. I again invoke your action in the matter of the pending awards against that republic to which reference was made by a special message from the Executive at your last session.

An invitation has been received from the Government of Venezuela to send representatives in July, 1883, to Caracas, for participating in the centennial celebration of the birth of Bolivar, the founder of South American independence. In connection with this event it is designed to commence the erection at Caracas of a statue of Washington, and to conduct an industrial exhibition, which will be open to American products. I recommend that the United States be represented, and that suitable provision be made therefor.

The elevation of the grade of our mission in Central America to the phenipotentiary rank, which was authorized by Congress at its late session, has been since effected.

The war between Peru and Bolivia on the one side and Chili on the other began more than three years ago. On the occupation by Chili, in 1880, of all the littoral territory of Bolivia, negotiations for peace were conducted under the direction of the United States. The allies refused to concede any territory, but Chili has since become master of the whole coast of both countries and of the capital of Peru. A year since, as you have already been advised by correspondence transmitted to you in January last, this Government sent a special mission to the belligerent powers to express the hope that Chili would be disposed to accept a money indemnity for the expenses of the war, and to relinquish her demand for a portion of the territory of her antagonist.

This recommendation, which Chili declined to follow, this Government did not assume to enforce; nor can it be enforced without resort to measures which would be in keeping neither with the temper of our people nor with the spirit of our institutions.

The power of Peru no longer extends over its whole territory, and in the event of our interference to dictate peace would need to be supplemented by the armies and navies of the United States. Such interference would almost inevitably lead to the establishment of a protectorate—a result utterly at odds with our past policy, injurious to our present interests, and full of embarrassments for the future.

For effecting the termination of hostilities upon terms at once just to the victorious nation and generous to its adversaries, this Government has spared no efforts save such as might involve the complications which I have indicated.

It is greatly to be deplored that Chili seems resolved to exact such rigorous conditions of peace and indisposed to submit to arbitration the terms of an amicable settlement. No peace is likely to be lasting that is not sufficiently equitable and just to command the approval of other nations.

About a year since, invitations were extended to the nations of this continent to send representatives to a peace congress to assemble at Washington in November, 1882. The time of meeting was fixed at a period then remote, in the hope, as the invitation itself declared, that in the mean time the disturbances between the South American republics would be adjusted. As that expectation seemed unlikely to be realized, I asked in April last for an expression of opinion from the two Houses of Congress as to the advisability of holding the proposed convention at the time appointed. This action was prompted in part by doubts which mature reflection had suggested whether the diplomatic usage and traditions of the Government did not make it fitting that the Executive should consult the representatives of the people before pursuing a line of policy somewhat novel in its character, and far-reaching in its possible consequences. In view of the fact that no action was taken by Congress in the premises and that no provision had been made for necessary expenses, I subsequently decided to postpone the convocation, and so notified the several governments which had been invited to attend.

I am unwilling to dismiss this subject without assuring you of my support of any measures the wisdom of Congress may devise for the promotion of peace on this continent and throughout the world, and I trust that the time is nigh when, with the universal assent

of civilized peoples, all international differences shall be determined without resort to arms by the benignant processes of arbitration.

Changes have occurred in the diplomatic representation of several foreign powers during the past year. New ministers from the Argentine Republic, Austria-Hungary, Brazil, Chili, China, France, Japan, Mexico, the Netherlands, and Russia, have presented their credentials. The missions of Denmark and Venezuela at this capital have been raised in grade. Switzerland has created a plenipotentiary mission to this Government, and an embassy from Madagascar and a minister from Siam will shortly arrive.

Our diplomatic intercourse has been enlarged by the establishment of relations with the new kingdom of Servia, by the creation of a mission to Siam, and by the restoration of the mission to Greece. The Shah of Persia has expressed his gratification that a *chargé d'affaires* will shortly be sent to that country, where the rights of our citizens have been hitherto courteously guarded by the representatives of Great Britain.

I renew my recommendation of such legislation as will place the United States in harmony with other maritime powers with respect to the international rules for the prevention of collisions at sea.

In conformity with your joint resolution of the 3d of August last, I have directed the Secretary of State to address foreign governments in respect to a proposed conference for considering the subject of the universal adoption of a common prime meridian to be used in the reckoning of longitude and in the regulation of time throughout the civilized world. Their replies will, in due time, be laid before you.

An agreement was reached at Paris in 1875 between the principal powers for the interchange of official publications through the medium of their respective foreign departments.

The admirable system which has been built up by the enterprise of the Smithsonian Institution affords a practical basis for our co-operation in this scheme, and an arrangement has been effected by which that institution will perform the necessary labor, under the direction of the Department of State. A reasonable compensation therefor should be provided by law.

A clause in the act making appropriations for the diplomatic and consular service contemplates the reorganization of both branches of such service on a salaried basis, leaving fees to inure to the benefit of the Treasury. I cordially favor such a project, as likely to correct abuses in the present system. The Secretary of State will present to you at an early day a plan for such reorganization.

A full and interesting exhibit of the operations of the Treasury Department is afforded by the report of the Secretaries.

It appears that the ordinary revenues from all sources for the fiscal year ended June 30, 1882, were as follow:

From customs	$220,410,730 25
From internal revenue	146,497,595 45
From sales of public lands	4,753,140 37
From tax on circulation and deposits of national banks	8,956,794 45
From repayment of interest by Pacific railway companies	840,554 37
From sinking fund for Pacific railway companies	796,271 42
From customs fees, fines, penalties, etc.	1,343,848 00
From fees—consular, letters patent, and lands	2,638,990 97
From proceeds of sales of Government property	314,959 85
From profits on coinage, bullion deposits, and assays	4,116,698 73
From Indian trust funds	5,705,243 92
From deposits by individuals for surveying public lands	2,052,806 36
From revenues of the District of Columbia	1,715,176 41
From miscellaneous sources	8,383,445 42
Total ordinary receipts	$403,525,250 28

The ordinary expenditures for the same period were—

For civil expenses	$18,042,336 42	
For foreign intercourse	1,307,583 19	
For Indians	9,736,747 40	
For pensions	61,345,198 95	
For the military establishment, including river and harbor improvements and arsenals	43,570,494 19	
For the naval establishment, including vessels, machinery, and improvements at navy-yards	15,032,046 26	
For miscellaneous expenditures, including public buildings, light-houses, and collecting the revenue	34,539,237 50	
For expenditures on account of the District of Columbia	3,330,543 87	
For interest on the public debt	71,077,206 79	
Total ordinary expenditures		$257,981,439 57
Leaving a surplus revenue of		$145,543,810 71
Which, with an amount drawn from the cash balance in the Treasury of		20,737,694 84
Making		$166,281,505 55

was applied to the redemption of—

Bonds for the sinking fund	$60,079,150 00
Fractional currency for the sinking fund	58,705 55
Loan of July and August, 1861	62,572,050 00
Loan of March, 1863	4,472,900 00
Funded loan of 1881	37,194,450 00
Loan of 1858	1,000 00
Loan of February, 1861	303,000 00
Five-twenties of 1862	2,100 00
Five-twenties of 1864	7,400 00
Five-twenties of 1865	6,500 00
Ten-forties of 1864	254,550 00
Consols of 1865	86,450 00
Consols of 1867	408,250 00
Consols of 1868	141,400 00
Oregon war debt	675,250 00
Old demand, compound-interest, and other notes	18,350 00
Total	$166,281,505 55

The foreign commerce of the United States during the last fiscal year, including imports and exports of merchandise and specie, was as follows:

EXPORTS.	
Merchandise	$750,542,257
Specie	49,417,479
Total	$799,959,736
IMPORTS.	
Merchandise	$724,639,574
Specie	42,472,390
Total	$767,111,964

Excess of exports over imports of merchandise, $25,902,683.

This excess is less than it has been before for any of the previous six years, as appears by the following table:

YEAR ENDED JUNE 30—	Excess of exports over imports of merchandise.
1876	$79,643,481
1877	151,152,094
1878	257,814,284
1879	264,661,666
1880	167,683,912
1881	259,712,718
1882	25,902,683

During the year there have been organized 171 national banks, and of those institutions there are now in operation 2,269, a larger number than ever before. The value of their notes in active circulation on July 1, 1882, was $324,656,458.

I commend to your attention the Secretary's views in respect to the likelihood of a serious contraction of this circulation, and to the modes by which that result may, in his judgment, be averted.

In respect to the coinage of silver dollars and the retirement of silver certificates I have seen nothing to alter but much to confirm the sentiments to which I gave expression last year.

A comparison between the respective amounts of silver-dollar circulation on Nov. 1, 1881, and on Nov. 1, 1882, shows a slight increase of a million and a half of dollars. But during the interval there had been in the whole number coined an increase of twenty-six millions. Of the one hundred and twenty-eight millions thus far minted, little more than thirty-five millions are in circulation. The mass of accumulated coin has grown so great that the vault-room at present available for storage is scarcely sufficient to contain it. It is not apparent why it is desirable to continue this coinage, now so enormously in excess of the public demand.

As to the silver certificates, in addition to the grounds which seemed last year to justify their retirement may be mentioned the effect which is likely to ensue from the supply of gold certificates for whose issuance Congress recently made provision, and which are now in active circulation.

You can not fail to note with interest the discussion by the Secretary as to the necessity of providing by legislation some mode of freeing the Treasury of an excess of assets in the event that Congress fails to reach an early agreement for the reduction of taxation.

I heartily approve the Secretary's recommendation of immediate and extensive reductions in the annual revenues of the Government.

It will be remembered that I urged upon the attention of Congress at its last session the importance of relieving the industry and enterprise of the country from the pressure of unnecessary taxation. It is one of the tritest maxims of political economy that all taxes are burdensome, however wisely and prudently imposed. And though there have always been among our people wide differences of sentiment as to the best methods of raising the national revenues, and indeed as to the principles upon which taxation should be based, there has been substantial accord in the doctrine that only such taxes ought to be levied as are necessary for a wise and economical administration of the Government. Of late the public revenues have far exceeded that limit, and unless checked by appropriate legislation such excess will continue to increase from year to year. For the fiscal year ended June 30, 1881, the surplus revenue amounted to $100,000,000; for the fiscal year ended on the 30th of June last the surplus was more than one hundred and forty-five millions.

The report of the Secretary shows what disposition has been made of these moneys. They have not only answered the requirements of the sinking fund, but have afforded a large balance applicable to other reductions of the public debt.

But I renew the expression of my conviction that such rapid extinguishment of the national indebtedness as is now taking place is by no means a cause for congratulation; it is a cause rather for serious apprehension.

If it continues, it must speedily be followed by one of the evil results so clearly set forth in the report of the Secretary.

Either the surplus must lie idle in the Treasury or the Government will be forced to buy at market rates its bonds not then redeemable, and which, under such circumstances, can not fail to command an enormous premium, or the swollen revenues will be devoted to extravagant expenditure, which, as experience has taught, is ever the bane of an overflowing treasury.

It was made apparent in the course of the animated discussions which this question aroused at the last session of Congress that the policy of diminishing the revenue by reducing taxation commanded the general approval of the members of both Houses.

I regret that because of conflicting views as to the best methods by which that policy should be made operative none of its benefits have as yet been reaped.

In fulfillment of what I deem my constitutional duty, but with little hope that I can make valuable contribution to this vexed question, I shall proceed to intimate briefly my own views in relation to it.

Upon the showing of our financial condition at the close of the last fiscal year I felt justified in recommending to Congress the abolition of all internal-revenue taxes except those upon tobacco in its various forms and upon distilled spirits and fermented liquors, and except also the special tax upon the manufacturers of and dealers in such articles.

I venture now to suggest that unless it shall be ascertained that the probable expenditures of the Government for the coming year have been underestimated, all internal taxes, save those which relate to distilled spirits, can be prudently abrogated.

Such a course, if accompanied by a simplification of the machinery of collection, which would then be easy of accomplishment, might reasonably be expected to result in diminishing the cost of such collection by at least two millions and a half of dollars, and in the retirement from office of from 1,500 to 2,000 persons.

The system of excise duties has never commended itself to the favor of the American people, and has never been resorted to except for supplying deficiencies in the Treasury when, by reason of special exigencies, the duties on imports have proved inadequate for the needs of the Government. The sentiment of the country doubtless demands that the present excise tax shall be abolished as soon as such a course can be safely pursued.

It seems to me, however, that, for various reasons, so sweeping a measure as the total abolition of internal taxes would for the present be an unwise step.

Two of these reasons are deserving of special mention:

First, it is by no means clear that even if the existing system of duties on imports is continued without modification, those duties alone will yield sufficient revenue for all the needs of the Government. It is estimated that one hundred millions of dollars will be required for pensions during the coming year, and it may well be doubted whether the maximum annual demand for that object has yet been reached. Uncertainty upon this question would alone justify, in my judgment, the retention for the present of that portion of the system of internal revenue which is least objectionable to the people.

Second, a total abolition of excise taxes would almost inevitably prove a serious if not an insurmountable obstacle to a thorough revision of the tariff and to any considerable reduction in import duties.

The present tariff system is in many respects unjust. It makes unequal distributions both of its burdens and its benefits. This fact was practically recognized by a majority of each House of Congress in the passage of the act creating the Tariff Commission. The report of that commission will be placed before you at the beginning of this session, and will, I trust, afford you such information as to the condition and prospects of the various commercial, agricultural, manufacturing, mining, and other interests of the country, and contain such suggestions for statutory revision, as will practically aid your action upon this important subject.

The revenue from customs for the fiscal year ended June 30, 1879, amounted to $137,000,000.

It has in the three succeeding years reached, first, $186,000,000, then $198,000,000, and finally, as has been already stated, $220,000,000.

The income from this source for the fiscal year which will end on June 30, 1883, will doubtless be considerably in excess of the sum last mentioned.

If the tax on domestic spirits is to be retained, it is plain, therefore, that large reductions from the customs revenues are entirely feasible. While recommending this reduction, I am far from advising the abandonment of the policy of so discriminating in the adjustment of details as to afford aid and protection to domestic labor. But the present system should be so

revised as to equalize the public burden among all classes and occupations and bring it into closer harmony with the present needs of industry.

Without entering into minute detail, which under present circumstances is quite unnecessary, I recommend an enlargement of the free list so as to include within it the numerous articles which yield inconsiderable revenue, a simplification of the complex and inconsistent schedule of duties upon certain manufactures, practically those of cotton, iron, and steel, and a substantial reduction of the duties upon those articles, and upon sugar, molasses, silk, wool, and woolen goods.

If a general revision of the tariff shall be found to be impracticable at this session, I express the hope that at least some of the more conspicuous inequalities of the present law may be corrected before your final adjournment. One of them is specially referred to by the Secretary. In view of a recent decision of the Supreme Court, the necessity of amending the law by which the Dutch standard of color is adopted as the test of the saccharine strength of sugars is too obvious to require comment.

From the report of the Secretary of War it appears that the only outbreaks of Indians during the past year occurred in Arizona and in the southwestern part of New Mexico. They were promptly quelled, and the quiet which has prevailed in all other parts of the country has permitted such an addition to be made to the military force in the region endangered by the Apaches that there is little reason to apprehend trouble in the future.

Those parts of the Secretary's reports which relate to our sea-coast defenses and their armament suggest the gravest reflections. Our existing fortifications are notoriously inadequate to the defense of the great harbors and cities for whose protection they were built.

The question of providing an armament suited to our present necessities has been the subject of consideration by a board, whose report was transmitted to Congress at the last session. Pending the consideration of that report, the War Department has taken no steps for the manufacture or conversion of any heavy cannon, but the Secretary expresses the hope that authority and means to begin that important work will be soon provided. I invite the attention of Congress to the propriety of making more adequate provision for arming and equipping the militia than is afforded by the act of 1808, which is still upon the statute-book. The matter has already been the subject of discussion in the Senate, and a bill which seeks to supply the deficiencies of existing laws is now upon its calendar.

The Secretary of War calls attention to an embarrassment growing out of the recent act of Congress making the retirement of officers of the army compulsory at the age of sixty-four. The act of 1878 is still in force, which limits to four hundred the number of those who can be retired for disability or upon their own application. The two acts, when construed together, seem to forbid the relieving, even for absolute incapacity, of officers who do not fall within the purview of the latter statute, save at such times as there chance to be less than four hundred names on the retired list. There are now four hundred and twenty. It is not likely that Congress intended this result, and I concur with the Secretary that the law ought to be amended.

The grounds that impelled me to withhold my signature from the bill entitled "An act making appropriations for the construction, repair, and preservation of certain works on rivers and harbors," which became a law near the close of your last session, prompt me to express the hope that no similar measure will be deemed necessary during the present session of Congress. Indeed, such a measure would now be open to a serious objection in addition to that which was lately urged upon your attention. I am informed by the Secretary of War that the greater portion of the sum appropriated for the various items specified in that act remains unexpended.

Of the new works which it authorized, expenses have been incurred upon two only, for which the total appropriation was $210,000. The present available balance is disclosed by the following table:

Amount of appropriation by act of Aug. 2, 1882 ..	$18,788,875
Amount of appropriation by act of June 19, 1882.	10,000
Amount of appropriation for payments to J. B. Eads	304,000
Unexpended balance of former appropriations...	4,788,263
Total	$23,791,138
Less amount drawn from Treasury between July 1, 1882, and Nov. 30, 1882	6,056,194
Total	$17,734,944

It is apparent by this exhibit that so far as concerns most of the items to which the act of Aug. 2, 1882, relates there can be no need of further appropriations until after the close of the present session. If, however, any action should seem to be necessary in respect to particular objects, it will be entirely feasible to provide for those objects by appropriate legislation. It is possible, for example, that a delay until the assembling of the next Congress to make additional provision for the Mississippi river improvements might be attended with serious consequences. If such appear to be the case, a just bill relating to that subject would command my approval.

This leads me to offer a suggestion which I trust will commend itself to the wisdom of Congress. Is it not advisable that grants of considerable sums of money for diverse and independent schemes of internal improvement should be made the subjects of separate and distinct legislative enactments? It will scarcely be gainsaid, even by those who favor the most liberal expenditures for such purposes as are sought to be accomplished by what is commonly called the river and harbor bill, that the practice of grouping in such a bill appropriations for a great diversity of objects, widely separated, either in their nature or in the locality with which they are concerned, or in both, is one which is much to be deprecated unless it is irremediable. It inevitably tends to secure the success of the bill as a whole, though many of the items if separately considered could scarcely fail of rejection. By the adoption of the course I have recommended, every member of Congress, whenever opportunity should arise for giving his influence and vote for meritorious appropriations, would be enabled so to do without being called upon to sanction others undeserving his approval. So also would the Executive be afforded thereby full opportunity to exercise his constitutional prerogative of opposing whatever appropriations seemed to him objectionable, without imperiling the success of others which commended themselves to his judgment.

It may be urged in opposition to these suggestions that the number of works of internal improvement which are justly entitled to governmental aid is so great as to render impracticable separate appropriation bills therefor, or even for such comparatively limited number as make disposition of large sums of money. This objection may be well founded, and whether it be or not, the advantages which would be likely to ensue from the adoption of the course I have recommended may perhaps be more effectually attained by another, which I respectfully submit to Congress as an alternative proposition.

It is provided by the constitutions of fourteen of our States that the Executive may disapprove any item or items of a bill appropriating money; whereupon the part of the bill approved shall be law, and the part disapproved shall fail to become law, unless repassed according to the provisions prescribed for the passage of bills over the veto of the Executive. The States wherein some such provision as the foregoing is a part of the fundamental law are Alabama, California, Colorado, Florida, Georgia, Louisiana, Minnesota, Missouri, Nebraska, New Jersey, New

York, Pennsylvania, Texas, and West Virginia. I commend to your careful consideration the question whether an amendment of the Federal Constitution in the particular indicated would not afford the best remedy for what is often grave embarrassment both to members of Congress and to the Executive, and is sometimes a serious public mischief.

The report of the Secretary of the Navy states the movements of the various squadrons during the year, in home and foreign waters, where our officers and seamen, with such ships as we possess, have continued to illustrate the high character and excellent discipline of the naval organization.

On the 21st of December, 1881, information was received that the exploring steamer Jeannette had been crushed and abandoned in the Arctic ocean. The officers and crew, after a journey over the ice, embarked in three boats for the coast of Siberia. One of the parties, under the command of Chief-Engineer George W. Melville, reached the land, and, falling in with the natives, was saved. Another, under Lieut.-Commander De Long, landed in a barren region near the mouth of the Lena river. After six weeks had elapsed all but two of the number had died from fatigue and starvation. No tidings have been received from the party in the third boat, under the command of Lieut. Chipp, but a long and fruitless investigation leaves little doubt that all its members perished at sea. As a slight tribute to their heroism I give in this communication the names of the gallant men who sacrificed their lives on this expedition: Lieut.-Commander George W. De Long, Surgeon James M. Ambler, Jerome J. Collins, Hans Halmer Erichsen, Heinrich H. Kaacke, George W. Boyd, Walter Lee, Adolph Dressler, Carl A. Görtz, Nelse Iverson, the cook Ah Sam, and the Indian Alexy. The officers and men in the missing boat were Lieut. Charles W. Chipp, commanding; William Dunbar, Alfred Sweetman, Walter Sharvell, Albert C. Kuehne, Edward Star, Henry D. Warren, and Peter E. Johnson.

Lieut. Giles B. Harber and Master William H. Scheutze are now bringing home the remains of Lieut. De Long and his comrades, in pursuance of the directions of Congress.

The Rodgers, fitted out for the relief of the Jeannette, in accordance with the act of Congress of March 3, 1881, sailed from San Francisco June 16th, under the command of Lieut. Robert M. Berry. On November 30th she was accidentally destroyed by fire, while in winter quarters in St. Lawrence bay, but the officers and crew succeeded in escaping to the shore. Lieut. Berry and one of his officers, after making a search for the Jeannette along the coast of Siberia, fell in with Chief-Engineer Melville's party, and returned home by way of Europe. The other officers and the crew of the Rodgers were brought from St. Lawrence bay by the whaling-steamer North Star. Master Charles F. Putnam, who had been placed in charge of a depot of supplies at Cape Serdze, returning to his post from St. Lawrence bay across the ice in a blinding snow-storm, was carried out to sea and lost, notwithstanding all efforts to rescue him.

It appears, by the Secretary's report, that the available naval force of the United States consists of thirty-seven cruisers, fourteen single-turreted monitors, built during the rebellion, a large number of smooth-bore guns and Parrott rifles, and eighty-seven rifled cannon.

The cruising-vessels should be gradually replaced by iron or steel ships, the monitors by modern armored vessels, and the armament by high-power rifled guns.

The reconstruction of our navy, which was recommended in my last message, was begun by Congress authorizing, in its recent act, the construction of two large, unarmored steel vessels of the character recommended by the late naval advisory board, and subject to the final approval of a new advisory board to be organized as provided by that act. I call your attention to the recommendation of the Secretary and the board that authority be given to construct two more cruisers of smaller dimensions, and one fleet dispatch-vessel, and that appropriations be made for high-power rifled cannon, for the torpedo service, and for other harbor defenses.

Pending the consideration by Congress of the policy to be hereafter adopted in conducting the eight large navy-yards and their expensive establishments, the Secretary advocates the reduction of expenditures therefor to the lowest possible amounts.

For the purpose of affording the officers and seamen of the navy opportunities for exercise and discipline in their profession, under appropriate control and direction, the Secretary advises that the Light-House Service and Coast Survey be transferred, as now organized, from the Treasury to the Navy Department; and he also suggests, for the reasons which he assigns, that a similar transfer may wisely be made of the cruising revenue-vessels.

The Secretary forcibly depicts the intimate connection and interdependence of the navy and the commercial marine, and invites attention to the continued decadence of the latter, and the corresponding transfer of our growing commerce to foreign bottoms.

This subject is one of the utmost importance to the national welfare. Methods of reviving American ship-building, and of restoring the United States flag in the ocean carrying-trade, should receive the immediate attention of Congress. We have mechanical skill and abundant material for the manufacture of modern iron steamships in fair competition with our commercial rivals. Our disadvantage in building ships is the greater cost of labor, and in sailing them higher taxes and greater interest on capital, while the ocean highways are already monopolized by our formidable competitors. These obstacles should in some way be overcome, and for our rapid communication with foreign lands we should not continue to depend wholly upon vessels built in the yards of other countries, and sailing under foreign flags. With no United States steamers on the principal ocean lines or in any foreign ports, our facilities for extending our commerce are greatly restricted, while the nations which build and sail the ships, and carry the mails and passengers, obtain thereby conspicuous advantages in increasing their trade.

The report of the Postmaster-General gives evidence of the satisfactory condition of that department, and contains many valuable data and accompanying suggestions which can not fail to be of interest.

The information which it affords, that the receipts for the fiscal year have exceeded the expenditures, must be very gratifying to Congress and to the people of the country.

As matters which may fairly claim particular attention, I refer you to his observations in reference to the advisability of changing the present basis for fixing salaries and allowances, of extending the money-order system, and of enlarging the functions of the postal establishment so as to put under its control the telegraph system of the country, though from this last and most important recommendation I must withhold my concurrence.

At the last session of Congress, several bills were introduced into the House of Representatives for the reduction of letter postage to the rate of two cents per half ounce.

I have given much study and reflection to this subject, and am thoroughly persuaded that such a reduction would be for the best interests of the public.

It has been the policy of the Government, from its foundation, to defray, as far as possible, the expenses of carrying the mails by a direct tax in the form of postage. It has never been claimed, however, that this service ought to be productive of a net revenue.

As has been stated already, the report of the Postmaster-General shows that there is now a very considerable surplus in his department, and that henceforth the receipts are likely to increase at a much greater ratio than the necessary expenditures. Unless

some change is made in the existing laws, the profits of the postal service will, in a very few years, swell the revenues of the Government many millions of dollars. The time seems auspicious, therefore, for some reduction in the rates of postage. In what shall that reduction consist?

A review of the legislation which has been had upon this subject during the last thirty years, discloses that domestic letters constitute the only class of mail matter which has never been favored by a substantial reduction of rates. I am convinced that the burden of maintaining the service falls most unequally upon that class, and that more than any other it is entitled to present relief.

That such relief may be extended without detriment to other public interests, will be discovered upon reviewing the results of former reductions.

Immediately prior to the act of 1845, the postage upon a letter composed of a single sheet was as follows:

If conveyed—	Cents.
30 miles or less	6
Between 30 and 80 miles	10
Between 80 and 150 miles	12½
Between 150 and 400 miles	18¾
Over 400 miles	25

By the act of 1845, the postage upon a single letter conveyed for any distance under 300 miles was fixed at 5 cents, and for any greater distance at 10 cents.

By the act of 1851, it was provided that a single letter, if prepaid, should be carried any distance not exceeding 3,000 miles for 3 cents, and any greater distance for 6 cents.

It will be noticed that both of these reductions were of a radical character, and relatively quite as important as that which is now proposed.

In each case there ensued a temporary loss of revenue, but a sudden and large influx of business, which substantially repaired that loss within three years.

Unless the experience of past legislation in this country and elsewhere goes for naught, it may be safely predicted that the stimulus of 33⅓ per cent. reduction in the tax for carriage, would at once increase the number of letters consigned to the mails.

The advantages of secrecy would lead to a very general substitution of sealed packets for postal cards and open circulars, and in divers other ways the volume of first-class matter would be enormously augmented. Such increase amounted in England, in the first year after the adoption of penny postage, to more than 125 per cent.

As a result of careful estimates, the details of which can not be here set out, I have become convinced that the deficiency for the first year after the proposed reduction would not exceed 7 per cent. of the expenditures, or $3,000,000, while the deficiency after the reduction of 1845 was more than 14 per cent., and after that of 1851 was 27 per cent.

Another interesting comparison is afforded by statistics furnished me by the Post-Office Department.

The act of 1845 was passed in face of the fact that there existed a deficiency of more than $30,000. That of 1851 was encouraged by the slight surplus of $132,000. The excess of revenue in the next fiscal year is likely to be $3,500,000.

If Congress should approve these suggestions, it may be deemed desirable to supply to some extent the deficiency which must for a time result, by increasing the charge for carrying merchandise, which is now only sixteen cents per pound. But even without such an increase, I am confident that the receipts under the diminished rates would equal the expenditures after the lapse of three or four years.

The report of the Department of Justice brings anew to your notice the necessity of enlarging the present system of Federal jurisprudence, so as effectually to answer the requirements of the ever-increasing litigation with which it is called upon to deal.

The Attorney-General renews the suggestions of his predecessor, that in the interests of justice better provision than the existing laws afford should be made in certain judicial districts for fixing the fees of witnesses and jurors.

In my message of December last I referred to pending criminal proceedings growing out of alleged frauds in what is known as the star-route service of the Post-Office Department, and advised you that I had enjoined upon the Attorney-General and associate counsel, to whom the interests of the Government were intrusted, the duty of prosecuting with the utmost vigor of the law all persons who might be found chargeable with those offenses. A trial of one of these cases has since occurred. It occupied for many weeks the attention of the Supreme Court of this District, and was conducted with great zeal and ability. It resulted in a disagreement of the jury, but the cause has been again placed upon the calendar, and will shortly be retried. If any guilty persons shall finally escape punishment for their offenses, it will not be for lack of diligent and earnest efforts on the part of the prosecution.

I trust that some agreement may be reached which will speedily enable Congress, with the concurrence of the Executive, to afford the commercial community the benefits of a national bankrupt law.

The report of the Secretary of the Interior, with its accompanying documents, presents a full statement of the varied operations of that Department. In respect to Indian affairs, nothing has occurred which has changed or seriously modified the views to which I devoted much space in a former communication to Congress. I renew the recommendations therein contained as to extending to the Indian the protection of the law, allotting land in severalty to such as desire it, and making suitable provision for the education of youth. Such provision, as the Secretary forcibly maintains, will prove unavailing unless it is broad enough to include all those who are able and willing to make use of it, and should not solely relate to intellectual training, but also to instruction in such manual labor and simple industrial arts as can be made practically available.

Among other important subjects which are included within the Secretary's report, and which will doubtless furnish occasion for congressional action, may be mentioned the neglect of the railroad companies to which large grants of land were made by the acts of 1862 and 1864 to take title thereto, and their consequent inequitable exemption from local taxation.

No survey of our material condition can fail to suggest inquiries as to the moral and intellectual progress of the people.

The census returns disclose an alarming state of illiteracy in certain portions of the country where the provision for schools is grossly inadequate. It is a momentous question for the decision of Congress whether immediate and substantial aid should not be extended by the General Government for supplementing the efforts of private beneficence and of State and Territorial legislation in behalf of education.

The regulation of interstate commerce has already been the subject of your deliberations. One of the incidents of the marvelous extension of the railway system of the country has been the adoption of such measures by the corporations which own or control the roads as has tended to impair the advantages of healthful competition and to make hurtful discriminations in the adjustment of freightage.

These inequalities have been corrected in several of the States by appropriate legislation, the effect of which is necessarily restricted to the limits of their own territory.

So far as such mischiefs affect commerce between the States, or between any one of the States and a foreign country, they are subjects of national concern, and Congress alone can afford relief.

The results which have thus far attended the enforcement of the recent statute for the suppression of polygamy in the Territories are reported by the Secretary of the Interior. It is not probable that any addi-

tional legislation in this regard will be deemed desirable until the effect of existing laws shall be more closely observed and studied.

I congratulate you that the commissioners, under whose supervision those laws have been put in operation, are encouraged to believe that the evil at which they are aimed may be suppressed without resort to such radical measures as in some quarters have been thought indispensable for success.

The close relation of the General Government to the Territories preparing to be great States may well engage your special attention. It is there that the Indian disturbances mainly occur, and that polygamy has found room for its growth. I can not doubt that a careful survey of Territorial legislation would be of the highest utility. Life and property would become more secure. The liability of outbreaks between Indians and whites would be lessened. The public domain would be more securely guarded and better progress be made in the instruction of the young.

Alaska is still without any form of civil government. If means were provided for the education of its people and for the protection of their lives and property, the immense resources of the region would invite permanent settlements and open new fields for industry and enterprise.

The report of the Commissioner of Agriculture presents an account of the labors of that department during the past year, and includes information of much interest to the general public.

The condition of the forests of the country and the wasteful manner in which their destruction is taking place give cause for serious apprehension. Their action in protecting the earth's surface, in modifying the extremes of climate, and in regulating and sustaining the flow of springs and streams, is now well understood, and their importance in relation to the growth and prosperity of the country can not be safely disregarded. They are fast disappearing before destructive fires and the legitimate requirements of our increasing population, and their total extinction can not be long delayed unless better methods than now prevail shall be adopted for their protection and cultivation. The attention of Congress is invited to the necessity of additional legislation to secure the preservation of the valuable forests still remaining on the public domain, especially in the extreme western States and Territories, where the necessity for their preservation is greater than in less mountainous regions, and where the prevailing dryness of the climate renders their restoration, if they are once destroyed, well-nigh impossible.

The communication which I made to Congress at its first session in December last contained a somewhat full statement of my sentiments in relation to the principles and rules which ought to govern appointments to public service.

Referring to the various plans which had theretofore been the subject of discussion in the National Legislature (plans which in the main were modeled upon the system which obtains in Great Britain, but which lacked certain of the prominent features whereby that system is distinguished), I felt bound to intimate my doubts whether they, or any of them, would afford adequate remedy for the evils which they aimed to correct.

I declared, nevertheless, that if the proposed measures should prove acceptable to Congress they would receive the unhesitating support of the Executive.

Since these suggestions were submitted for your consideration there has been no legislation upon the subject to which they relate; but there has meanwhile been an increase in the public interest in that subject; and the people of the country, apparently without distinction of party, have in various ways and upon frequent occasions given expression to their earnest wish for prompt and definite action. In my judgment such action should no longer be postponed.

I may add that my own sense of its pressing importance has been quickened by observation of a practical phase of the matter, to which attention has more than once been called by my predecessors.

The civil list now comprises about 100,000 persons, far the larger part of whom must, under the terms of the Constitution, be selected by the President, either directly or through his own appointees.

In the early years of the administration of the Government the personal direction of appointments to the civil service may not have been an irksome task for the Executive; but now that the burden has increased fully a hundred-fold it has become greater than he ought to bear, and it necessarily diverts his time and attention from the proper discharge of other duties no less delicate and responsible, and which, in the very nature of things, can not be delegated to other hands.

In the judgment of not a few who have given study and reflection to this matter, the nation has outgrown the provisions which the Constitution has established for filling the minor offices in the public service.

But whatever may be thought of the wisdom or expediency of changing the fundamental law in this regard, it is certain that much relief may be afforded, not only to the President and to the heads of the departments, but to Senators and Representatives in Congress, by discreet legislation. They would be protected in a great measure by the bill now pending before the Senate, or by any other which should embody its important features, from the pressure of personal importunity and from the labor of examining conflicting claims and pretensions of candidates.

I trust that before the close of the present session some decisive action may be taken for the correction of the evils which inhere in the present methods of appointment, and I assure you of my hearty cooperation in any measures which are likely to conduce to that end.

As to the most appropriate term and tenure of the official life of the subordinate employés of the Government, it seems to be generally agreed that whatever their extent or character, the one should be definite and the other stable, and that neither should be regulated by zeal in the service of party or fidelity to the fortunes of an individual.

It matters little to the people at large what competent person is at the head of this department or of that bureau, if they feel assured that the removal of one and the accession of another will not involve the retirement of honest and faithful subordinates, whose duties are purely administrative and have no legitimate connection with the triumph of any political principles or the success of any political party or faction. It is to this latter class of officers that the Senate bill, to which I have already referred, exclusively applies.

While neither that bill nor any other prominent scheme for improving the civil service concerns the higher grade of officials, who are appointed by the President and confirmed by the Senate, I feel bound to correct a prevalent misapprehension as to the frequency with which the present Executive has displaced the incumbent of an office and appointed another in his stead.

It has been repeatedly alleged that he has in this particular signally departed from the course which has been pursued under recent administrations of the Government. The facts are as follow:

The whole number of executive appointments during the four years immediately preceding Mr. Garfield's accession to the presidency was 2,696.

Of this number, 244, or 9 per cent., involved the removal of previous incumbents.

The ratio of removals to the whole number of appointments was much the same during each of those four years.

In the first year, with 790 appointments, there were 74 removals, or 9·3 per cent.; in the second, with 917 appointments, there were 85 removals, or 8·5 per cent.; in the third, with 480 appointments, there were 48 removals, or 10 per cent.; in the fourth, with 429 appointments, there were 37 removals, or 8·6 per cent. In the four months of President Garfield's adminis-

tration there were 390 appointments and 89 removals, or 22·7 per cent. Precisely the same number of removals (89) has taken place in the fourteen months which have since elapsed, but they constitute only 7·8 per cent. of the whole number of appointments (1,118) within that period, and less than 2·6 of the entire list of officials (3,459), exclusive of the army and navy, which is filled by presidential appointment.

I declare my approval of such legislation as may be found necessary for supplementing the existing provisions of law in relation to political assessments.

In July last I authorized a public announcement that employés of the Government should regard themselves as at liberty to exercise their pleasure in making or refusing to make political contributions, and that their action in that regard would in no manner affect their official status.

In this announcement I acted upon the view which I had always maintained and still maintain, that a public officer should be as absolutely free as any other citizen to give or to withhold a contribution for the aid of the political party of his choice. It has, however, been urged, and doubtless not without foundation in fact, that by solicitation of official superiors and by other modes such contributions have at times been obtained from persons whose only motive for giving has been the fear of what might befall them if they refused. It goes without saying that such contributions are not voluntary, and in my judgment their collection should be prohibited by law. A bill which will effectually suppress them will receive my cordial approval.

I hope that however numerous and urgent may be the demands upon your attention, the interests of this District will not be forgotten.

The denial to its residents of the great right of suffrage in all its relation to national, State, and municipal action, imposes upon Congress the duty of affording them the best administration which its wisdom can devise.

The report of the District commissioners indicates certain measures whose adoption would seem to be very desirable. I instance in particular those which relate to arrears of taxes, to steam railroads, and to assessments of real property.

Among the questions which have been the topic of recent debate in the halls of Congress none are of greater gravity than those relating to the ascertainment of the vote for presidential electors and the intendment of the Constitution in its provisions for devolving executive functions upon the Vice-President when the President suffers from inability to discharge the powers and duties of his office.

I trust that no embarrassments may result from a failure to determine these questions before another national election.

The closing year has been replete with blessings for which we owe to the Giver of all good our reverent acknowledgment. For the uninterrupted harmony of our foreign relations, for the decay of sectional animosities, for the exuberance of our harvests and the triumphs of our mining and manufacturing industries, for the prevalence of health, the spread of intelligence and the conservation of the public credit, for the growth of the country in all the elements of national greatness—for these and countless other blessings—we should rejoice and be glad. I trust that under the inspiration of this great prosperity our counsels may be harmonious, and that the dictates of prudence, patriotism, justice, and economy may lead to the adoption of measures in which the Congress and the Executive may heartily unite.

CHESTER A. ARTHUR.

WASHINGTON, *December* 4, 1882.

Civil-Service Reform.—One of the most important subjects brought up for consideration during the session was the bill for the reform of the civil service, which had fallen by the way in the previous session. It was reported in the Senate Dec. 12th from the Committee on Civil Service and Retrenchment, with various amendments, which were agreed to without debate. Mr. Pendleton, of Ohio, who originally introduced the bill and had charge of it, opened the discussion of the measure as amended. He said:

"The necessity of a change in the civil administration of this Government has been so fully discussed in the periodicals and pamphlets and newspapers, and before the people, that I feel indisposed to make any further argument. This subject, in all its ramifications, was submitted to the people of the United States at the fall elections, and they have spoken in no low or uncertain tone.

"I do not doubt that local questions exerted great influence in many States upon the result; but it is my conviction, founded on the observation of an active participation in the canvass in Ohio, that dissatisfaction with the methods of administration adopted by the Republican party in the past few years was the most important single factor in reaching the conclusion that was attained. I do not say that the civil service of the Government is wholly bad. I can not honestly do so. I do not say that the men who are employed in it are all corrupt or inefficient or unworthy. That would do very great injustice to a great number of faithful, honest, and intelligent public servants. But I do say that the civil service is inefficient; that it is expensive; that it is extravagant; that it is in many cases and in some senses corrupt; that it has welded the whole body of its employés into a great political machine; that it has converted them into an army of officers and men, veterans in political warfare, disciplined and trained, whose salaries, whose time, whose exertions at least twice within a very short period in the history of our country have robbed the people of the fair results of presidential elections.

"I repeat, Mr. President, that the civil service is inefficient, expensive, and extravagant, and that it is in many instances corrupt. Is it necessary for me to prove facts which are so patent that even the blind must see and the deaf must hear?

"At the last session of Congress, in open Senate, it was stated and proved that in the Treasury Department at Washington there are 3,400 employés, and that of this number the employment of less than 1,600 is authorized by law and appropriations made for their payment, and that more than 1,700 are put on or off the rolls of the department at the will and pleasure of the Secretary of the Treasury, and are paid not out of appropriations made for that purpose but out of various funds and balances of appropriations lapsed in the Treasury in one shape or another, which are not by law appropriated to the payment of these employés. I was amazed. I had never before heard that such a state of affairs existed. I did not believe it was possible until my honorable col-

league rose in his place and admitted the general truth of the statement and defended the system as being necessary for the proper administration of the Treasury Department.

"Mr. President, we see in this statement whence comes that immense body of public officials, inspectors, detectives, deputies, examiners, from the Treasury Department who have for years past been sent over the States for the purpose of managing presidential conventions and securing presidential elections at the public expense.

"I hold in my hand a statement made before the committee which reported this bill, showing that in one of the divisions of the Treasury Department at Washington, where more than nine hundred persons were employed, men and women, five hundred and more of them were entirely useless, and were discharged without in any degree affecting the efficiency of the bureau. I do not intend to misstate any fact to-day if I can avoid it, and therefore I read from the testimony taken before the committee. Every gentleman can find it if he has not it already on his table. The statement to which I refer I read from page 121 of report of committee No. 576:

"The extravagance of the present system was well shown in the examination of the Bureau of Engraving and Printing by a committee of which I was chairman. Of a force of 958 persons, 539, with annual salaries amounting to $390,000, were found to be superfluous and were discharged. The committee reported that for years the force in some branches had been twice and even three times as great as the work required. In one division a sort of platform had been built underneath the iron roof, about seven feet above the floor, to accommodate the surplus counters. It appeared that the room was of ample size without this contrivance for all the persons really needed. In another division were found twenty messengers doing work which it was found could be done by one. The committee reported that the system of patronage was chiefly responsible for the extravagance and irregularities which had marked the administration of the bureau, and declared that it had cost the people millions of dollars in that branch of the service alone. Under this system the office had been made to subserve the purpose of an almshouse or asylum.

"In consequence of this report the annual appropriation for the Printing Bureau was reduced from $800,000 to $200,000, and out of the first year's savings was built the fine building now occupied by that bureau.

"And again, on page 126, this same gentleman says:

"My observation teaches me that there is more pressure and importunity for these places [that is, the $900 clerkships], and that more time is consumed by heads of departments, and those having the appointing power, in listening to applications for that grade than for all the other places in the departments combined; and that when it is discretionary with a department to appoint a man or a woman, the choice is usually exercised in favor of the woman. I know a recent case in the Treasury Department where a vacancy occurred which the head of the bureau deemed it important to fill with a man. It was a position where a man's services were almost indispensable: but the importunity was so great that he was compelled to accept a woman, although her services were not required. In consequence of this importunity for places for women a practice has grown up in the Treasury Department of allowing the salaries of the higher grades of clerkships to lapse when vacancies occur, and of dividing up the amount among clerks, usually women, at lower salaries. In the place of a male clerk at $1,800 a year, for instance, three women may be employed at $600. Often the services of a man are required in its higher grade, while the women are not needed at all; but as the man can not be employed without discharging the women, he can not be had. The persons employed in this way are said to be 'on the lapse.' Out of this grew the practice known in departmental language as 'anticipating the lapse.'

"In the endeavor to satisfy the pressure for place more people are appointed on this roll than the salaries then lapsing will warrant, in the hope that enough more will lapse before the end of the fiscal year to provide funds for their payment. But the funds almost always run short before the end of the year, and then either the 'lapse' appointees must be dropped or clerks discharged from the regular roll to make place for them. In some instances, in former administrations, the employés on the regular roll were compelled, under terror of dismissal, to ask for leaves of absence, without pay, for a sufficient time to make up the deficiency caused by the appointment of unnecessary employés 'on the lapse.' Another bad feature is that these 'lapse' employés being appointed without regard to the necessities of the work, for short periods and usually without regard to their qualifications, are of little service, while their employment prevents the filling of vacancies on the regular roll, and demoralizes the service.

"In one case thirty-five persons were put on the 'lapse fund' of the Treasurer's office for eight days at the end of a fiscal year, to sop up some money which was in danger of being saved and returned to the Treasury.

"Says this gentleman further:

"I have no doubt that under a rigid application of this proposed system the work of the Treasury Department could be performed with two thirds the number of clerks now employed, and that is a moderate estimate of the saving.

"Mr. President, a Senator who is now present in the chamber and who will recognize the statement when I make it, though I shall not indicate his name, told me that the Secretary of one of the departments of the Government said to him, perhaps to the Committee on Appropriations, at the last session, that there were seventeen clerks in his department for whom he could find no employment; that he did need one competent clerk of a higher grade, and if the appropriation were made for that one clerk, at the proper amount, according to the gradations of the service, and the appropriation for the seventeen were left out, he could, without impairing the efficiency of his department, leave those seventeen clerks off the roll; but if the appropriation should be made, the personal, social, and political pressure was so great that he would be obliged to employ and pay them, though he could find no employment for them.

"Need I prove, Mr. President, that which is known to all men, that a systematic pressure has been brought upon the clerks in the departments of the Government this year to extort from them a portion of the salary that is paid to them under a system which the President himself scouts as being voluntary, and that they are led to believe and fairly led to believe that they have bought and paid for the

offices which they hold, and that the good faith of those who take from them a portion of the salary is pledged to their retention in their positions?

"I have said before upon the floor of the Senate that this whole system demoralizes everybody who is engaged in it. It demoralizes the clerks who are appointed. That is inevitable. It demoralizes those who make the appointment. That also is inevitable. And it demoralizes Senators and Representatives, who, by the exercise of their power as Senators and Representatives, exert pressure upon the appointing power.

"I am disposed to speak with due moderation and with respect for every gentleman who sits in this chamber. I certainly desire, in a statement like this, not to make personal reflections upon anybody; but I say that this system, permeating the whole civil service of the country, demoralizes everybody connected with it, the clerks, the appointing power, and those who, by their official position and their relations to the executive administration of the Government, have the influence necessary to put these clerks in office.

"Mr. President, how can you expect purity, economy, efficiency to be found anywhere in the service of the Government if the report made by this committee to the Senate has even the semblance of truth? If the civil service of the country is to be filled up with superfluous persons, if salaries are to be increased in order that assessments may be paid, if members of Congress having friends or partisan supporters are to be able to make places for them in public employment, how can you expect Senators and Representatives to be economical and careful in the administration of the public money?

"Mr. President, it was these methods of administration, it was these acts of the Republican party, which made it possible for the Democratic party, and other men who prized their country higher than they did their party, to elect in Ohio a Democratic ticket by eighteen to twenty thousand majority, and elect sixteen out of the twenty-one members of Congress assigned to that State.

"Under the impulse of this election in Ohio, upon these facts and influences which I have stated as being of great importance there, it became possible for the Democratic party and its allies, whom I have described, to elect a Democratic Governor in New York, in Massachusetts, in Kansas, in Michigan, and various other States in which there has been none but a Republican Governor for many years past. The same influences enable us, having accessions to our ranks from Iowa and Wisconsin and Michigan and Pennsylvania, to have at the beginning of the next session of Congress an aggregate of perhaps sixty or more Democratic majority in the House of Representatives.

"I beg the Democratic party throughout the country not to mistake this result of last fall as a purely Democratic triumph. It was achieved by the Democratic party with the assistance of men of all parties upon whom their love of country sat heavier than their love of party. It was a protest made by an awakened people, who were indignant at the wrongs which had been practiced upon them. It was a tentative stretching out of that same people to find instrumentalities by which those wrongs could be righted.

"The people demanded economy, and the Republican party gave them extravagance. The people demanded a reduction of taxation, and the Republican party gave them an increase of expenditure. The people demanded purity of administration, and the Republican party reveled in profligacy; and when the Republican party came to put themselves on trial before that same people, the people gave them a day of calamity.

"I beg that my colleagues on this side of the chamber may remember, I desire that our party associates throughout the country shall remember, that the people will continue to us their confidence and increase it, that they will continue to us power and increase it, just in the proportion that we honestly and fairly and promptly answer to the demands which the people have made, and which were thus responded to by the Republican party. They asked revenue reform, and they received none. They asked civil-service reform, and they obtained none. They asked that the civil service of this Government should not, either as to its men or its expenditures, be made the basis upon which political contests were to be carried on, and they received for answer that that was an old fashion and a good method of political warfare. I beg gentlemen upon this side of the chamber to remember that, if they desire to escape the fate which now seems to be impending upon their adversaries, they must avoid the example which those adversaries have set them.

"Mr. President, the bill which I have the honor to advocate to-day, and which is reported by a committee of the Senate, is the commencement, in my humble judgment, of an attempt to answer to one of the demands which the people have authoritatively made. I speak advisedly. It is the commencement of an attempt to organize a system which shall respond to one of the demands which the people have made.

"I suppose the most enthusiastic supporter of this bill will not pretend that it is perfect. I suppose he will not pretend that upon the adoption of this bill a system will immediately spring into life which will perfect and purify the civil service of the Government. But it is the commencement of an attempt to lay the foundations of a system which, if it shall answer in any reasonable degree the expectation of those who by experience and faithful study have framed it, it will in the end correct the abuses to which I have alluded, and which have

been delineated by no enemy of the Republican party or of the Administration in the report which I have read to the Senate.

"The bill has for its foundation the simple and single idea that the offices of the Government are trusts for the people; that the performance of the duties of those offices is to be in the interest of the people; that there is no excuse for the being of one office or the paying of one salary except that it is in the highest practicable degree necessary for the welfare of the people; that every superfluous office-holder should be cut off; that every incompetent office-holder should be dismissed; that the employment of two where one will suffice is robbery; that salaries so large that they can submit to the extortion, the forced payment, of 2 or 10 per cent. are excessive and ought to be diminished. I am not speaking of purely voluntary contributions.

"If it be true that offices are trusts for the people, then it is also true that the offices should be filled by those who can perform and discharge the duties in the best possible way. Fidelity, capacity, honesty, were the tests established by Mr. Jefferson when he assumed the reins of government in 1801. He said then, and said truly, that these elements in the public offices of the Government were necessary to an honest civil service, and that an honest civil service was essential to the purity and efficiency of administration, necessary to the preservation of republican institutions.

"Mr. Jefferson was right. The experience of eighty years has shown it. The man best fitted should be the man placed in office, especially if the appointment is made by the servants of the people. It is as true as truth can be that fidelity, capacity, honesty, are essential elements of fitness, and that the man who is most capable and most faithful and most honest is the man who is the most fit, and he should be appointed to office.

"These are truths that in their statement will be denied by none, and yet the best means of ascertaining that fitness has been a vexed question with every administration of this Government and with every man who has been charged with the responsibility of its execution. We know what is the result. Pass examinations have been tried; professions have been tried; honest endeavors have been tried; a disposition to live faithfully up to these requirements has been tried; and yet we know, and the experience of to-day shows it, that they have all made a most lamentable failure. We do know that now so great has been the increase of the powers of this Government and the number of officers under it that no President, no Cabinet, no heads of bureaus, can by possibility know the fitness of all applicants for the subordinate offices of the Government. The result has been, and under the existing system it must always be, that the President and his Cabinet and those who are charged with the responsibility have remitted the question of fitness to their own partisan friends, and those partisan friends have in their turn decided the question of fitness in favor of their partisan friends. The Administration has need of the support of members of Congress in carrying on its work. It therefore remits to members of Congress of its own party the questions of appointment to office in the various districts. These gentlemen, in the course of their political life, naturally (I do not find fault with them for it) find themselves under strain and pressure to secure a nomination or a renomination or election, and they use the places to reward those whose friends and families and connections and aids and deputies will serve their purpose.

"I put it to gentlemen, particularly to my friends on this side of the chamber, because you have not the opportunity to exercise this patronage as much as our friends on the other side, whether or not the element of fitness enters largely into the questions of appointment in your respective districts and States. It can not be. The necessities of the case prevent it. The pressure upon men who want to be elected prevents it. The demands that are made by partisan friends and those who have been influential and potent in securing personal triumph to gentlemen who may happen to be in such relation to the appointing power that they have the influence to secure appointment prevents it. The result is, as I have stated, that instead of making fitness, capacity, honesty, fidelity, the only or the essential qualifications for office, personal fidelity and partisan activity alone control.

"When I came to the Senate I had occasion more than ever before to make some investigation upon this subject, and I found to my surprise the extent to which the demoralization of the service had gone. I saw the civil service debauched and demoralized. I saw offices distributed to incompetent and unworthy men as a reward for the lowest of dirty partisan work. I saw many men employed to do the work of one man. I saw the money of the people shamefully wasted to keep up electioneering funds by political assessments on salaries. I saw the whole body of the public officers paid by the people organized into a compact, disciplined corps of electioneerers obeying a master as if they were eating the bread of his dependence and rendering him personal service.

"I believed then, and I believe now, that the existing system which, for want of a better name, I call the 'spoils system,' must be killed, or it will kill the republic. I believe that it is impossible to maintain free institutions in the country upon any basis of that sort. I am no prophet of evil, I am not a pessimist in any sense of the word, but I do believe that if the present system goes on until 50,000,000 people shall have grown into 100,000,000, and 140,000 officers shall have grown into 300,000, with their compensation in proportion, and all shall depend upon the accession of one party or the other to the presidency and to the execu-

tive functions, the presidency of the country, if it shall last in name so long, will be put up for sale to the highest bidder, even as in Rome the imperial crown was put up to those who could raise the largest fund.

"I beg gentlemen to believe that whatever I may have said as to the relations of parties I do not approach the question of the reform of the civil service in any mere partisan spirit. It was because I thought I saw this danger, because I believed that it was imminent, because I believed then as I do now that it is destructive of republicanism and will end in the downfall of republican government, that I felt it my duty to devote whatever ability I had to the consideration of this subject. It was that which induced me a year or two ago to introduce a bill which after the best reflection, the best study, the best assistance that I could get I did introduce in the Senate, and which, in some degree modified, has come back from the Committee on Civil Service Reform, and is now pending before this body.

"Mr. President, it is because I believe the 'spoils system' to be a great crime, because I believe it to be fraught with danger, because I believe that the highest duty of patriotism is to prevent the crime and to avoid the danger, that I advocate this or a better bill if it can be found for the improvement of the civil service.

"I am told, and I am sure that I am not far out of the way, if I am not exactly accurate, that the number of such offices does not exceed thirty or perhaps thirty-five, and that the number of persons who are employed in them, together with those in the departments here, will not exceed 10,000.

"I said that this was a tentative effort; that it was intended to be an experiment, and it is because it is tentative, because it is intended to be an experiment, that the committee thought it advisable in its initial stages to limit it, as they have limited it, in the bill. The bill does not apply to elective officers of course, nor to officers appointed by the President by and with the advice and consent of the Senate, nor to the military, nor to the naval, nor to the judicial establishment. It applies simply now to those officials who are employed in the departments here and in the large offices of the Government elsewhere, first, because as an experiment it was thought that it gave scope enough to test its value and labor enough to employ all those who are engaged in putting it in operation until its merits shall be fairly tried and it shall commend itself either to the approval or the condemnation of the American people.

"There was another reason. The heads of offices and bureaus, where the number of employés is small, can themselves personally judge of the fitness of persons who are applicants for appointment, knowing as they do more or less in their narrow communities their antecedents, their habits, and their modes of life.

"The bill does not touch the question of tenure of office or of removal from office. I see it stated by those who do not know that it provides for a seven years' tenure of office. There is nothing like it in the bill. I see it stated that it provides against removals from office. There is nothing like it in the bill. Whether or not it would be advisable to fix the tenure of office, whether or not it would be advisable to limit removals, are questions about which men will differ; but the bill as it is and as we invoke the judgment of the Senate upon it contains no provisions either as to tenure of office or removals from office. It leaves those questions exactly where the law now finds them. It concerns itself only with admission to the public service; it concerns itself only with discovering in certain proper ways or in certain ways—gentlemen may differ as to whether they are proper or not—the fitness of the persons who shall be appointed. It takes cognizance of the fact that it is impossible for the head of a department or a large office personally to know all the applicants, and therefore it provides a method by which, when a vacancy occurs by death, by resignation, by the unlimited power of removal, a suitable person may be designated to fill the vacancy. It says in effect that when a vacancy occurs in the civil service of the lowest grade, everybody who desires entrance shall have the right to apply. Everybody, humble, poor, without patronage, without influence, whatever may be his condition in life, shall have the right to go before the parties charged with an examination of his fitness and there be subjected to the test of open, regulated, fair, impartial examination.

"Now, Mr. President, recurring to what I have said as to the scope of this bill, to the officers who are embraced in it, to the avoidance of the question of removal and tenure, I have only to say that the machinery of the bill is that the President shall call to his aid the very best assistance, with or without the concurrence of the Senate—for that is a matter about which gentlemen perhaps would differ, and upon it I have no very fixed opinion—that the President shall, with the concurrence of the best advice which he can obtain, form a plan, a scheme of examination free for all, open to all, which shall secure the very best talent and the very best capacity attainable for the civil offices of the Government. The method adopted in the bill is by competitive examination. That method has been imperfectly tried throughout the country. I have here the statement of the Postmaster of New York who has given much attention and has had great experience in this matter. I have here his statement that the business of his office increased 150 per cent. within a certain number of years, and the expenses increased only 2 per cent.

"Says Mr. Pearson, 'To be specific, while the increase in the volume of matter has been from 150 to 300 per cent., the increase in cost has only been about 2 per cent.'

"Mr. Graves, whose testimony I read before, has stated as the result of the efforts which were made by Gen. Grant during the period that he was allowed any funds for the purpose of putting this scheme into operation, that the expenses of the departments here can be reduced at least one third.

"I have heard it said that this system of examination proposes to present only a scholastic test; that it proposes only to give advantage to those who are college-bred, and have had the advantage in early life of superior education. The committee investigated that subject to some extent, and I have here the result in the city of New York. Says Mr. Burt:

"Taking seven hundred and thirty-one persons examined, 60 per cent. of the appointees selected from them had been educated simply in the common schools of the country; 33½ per cent. had received what they call academic or high-school education; and 6½ per cent. a collegiate education. In all the statistics in regard to common-school education there is one little weakness resulting from the fact that we have to throw in that class men who have had hardly any education, men who will say, 'I went to school until I was eleven years old,' or 'I went to school in the winter,' or something of that kind. We have to throw them in that class, and it rather reduces the average standing in that category. As to the matter of age, we have very thoroughly exploded that objection. There have been some young men of twenty-one and twenty-two who have come in, but the average has been above thirty, and it is astonishing that it is the men above thirty who make the best time on examination, who show a facility to get through work quickly.

"He goes on to say:

"Yet about two thirds of the appointees had a common-school education; had not even an academic education.

"Of course these examinations must be proper; of course they must be regulated upon common-sense principles; of course they must be conducted to test the fitness of the men who are to be appointed to particular offices. You have tests everywhere. To-day the law requires that there shall be a test of examination in the various departments here in Washington. They are pass examinations; they are imperfect; they are insufficient; they are not thorough. Mr. Graves himself says that the only examination in his case was that the superior in the department looked over his shoulder while he was writing and said, 'I think you will pass.' That was when he entered the service twenty-odd years ago.

"If you have examinations, why not have competitive examinations? If you have private pass examinations, why not have open examinations? If examinations are to be made in the departments by subordinates of the departments, why not have them made by responsible examiners amenable to the authority of the President under a system devised by the best intelligence that can be supplied?

"I hear the system of competitive examination spoken of as if it were something extraordinary. Within the last fifteen years it has gotten to be a custom that I might almost say is universal that when a member of Congress has the right to appoint a cadet to West Point or to the Naval Academy he asks his constituents to compete for it. Formerly it was never done; it was looked on as the mere perquisite of a member of Congress. I appointed a gentleman to West Point who graduated at the head of his class, and now is an active and vigorous spirit of the Military Academy. I appointed him simply upon my own personal examination and knowledge. It would not be done now; it could not be done now; the public sentiment is against it. The public sentiment of the district that I then represented would not permit it; but open competitive examinations are demanded, and everybody having the requisite qualifications of age and health and vigor can compete for the appointment.

"Why not apply that system to the Executive Departments of this Government? What earthly reason can there be why when you desire to appoint the best and fittest man for the place that is vacant he should not subject himself to the competition of other people who desire to have that place? Of course, as I said before, this all goes upon the basis that there shall be reasonable examination and reasonable competition."

Mr. Hawley, of Connecticut, followed in the same strain. He said: "This is 'a bill to regulate and improve the civil service of the United States.' It is not a new subject, nor is the bill itself, in its essential particulars, new to the Senate or to the public. Something is to be done upon this subject. Beyond all manner of question there is something to be done. The experience of this country as to the evils of the existing system, the experience of other countries in the trial of improved systems and aside from any evils that exist among us, the extraordinary growth of this country, render the continuance of the present system utterly impossible. All these things combined, with a stronger and stronger manifestation of public sentiment from year to year, show, as I said, that something is to be done.

"When our country began with what I may call the present system, which is a lack of system, there were 850,000 square miles of territory; there are now 4,000,000 square miles. There were 3,000,000 of people; there are now 55,000,000 of people, or will be by next June, and there has been an addition of 25 States. In 1801 there were 906 post-offices; there are now 44,848. There were 69 custom-houses; there are now 135. The revenues were less than $3,000,000; now they are $400,000,000. Our ministers to foreign countries were 4; they are now 33. Our consuls were 63; they are now 728. A thousand men then administered the Government; it now requires more than 100,000.

"In many offices, I might say in every one of the departments and bureaus of the Government, the chief might, originally, well be re-

quired to have personal acquaintance with the character, the mental abilities, the fitness in general of his appointees. To require or expect any such knowledge now is quite ridiculous indeed, with a Treasury Department alone that has more than 3,000 employés, and single subordinate offices outside of Washington that have nearly twice as many employés as the whole Government had ninety years ago.

"The doctrine of old was a better doctrine than that we have lately practiced. It taught that the power and duty of making removals were vested in the President alone. It may be the theory now, but it is not wholly acknowledged to be such by the Tenure-of-Office Act, and in practice it is certainly not the law. Fidelity and efficiency were the measures of tenure, as capacity and character were the tests for appointment.

"Here are some figures which have been made familiar during the discussion of this question. Washington made only nine removals, and all for cause; John Adams only nine, and none, it would seem, by reason of political cause; Jefferson only thirty-nine, and none of them, as he declared, for political reasons; Madison only five; Monroe only nine; John Quincy Adams only two, and all for cause. In general, the Government was very honestly and admirably administered.

"There has been a constant and a steady growth of the idea that offices might be used to strengthen candidates and to reward active workers. The doctrine that 'to the victors belong the spoils' became (though it always provoked a smile) the practical rule of the country. The evils of the existing system can not be denied by any man, whatever his position, with regard to any of the pending measures for civil-service reform. They are obvious, more clearly obvious to members of Congress than to anybody else. They are obvious in the suffering and humiliation of the employés. The condition of the majority of them is pitiable. They are under a sort of degradation that we have no right to impose upon our friends and neighbors and fellow-citizens. They are only partially secured in their positions by their character and by the good work they may do. How well we know that they do not depend upon those things to maintain them in place; that they are constantly coming to members of Congress and applying to influential friends everywhere to strengthen what they call their 'influence,' till the word 'influence' has become a cant term, a slang term among them. 'Who is your influence?' is the phrase. 'I have none. My influence is dead.' Or, 'My influence was in Congress ten or fifteen years ago, and he is not in political life now, or he has no influence himself'; 'I must get some influence,' etc., etc. These are the every-day phrases among the employés; and whenever a new chief of a bureau comes in, not to say a new Cabinet officer or a new President, there is a hurrying and a scurrying among all the terrified flock to strengthen themselves in position; not by the good record they may have or the good character they may have maintained, but by the recommendations of political friends. By this system the inefficient are kept in longer than they would be otherwise. These are facts so well known that I ought to ask pardon for repeating them.

"The man who is less efficient than his fellows, conscious that he has less of character or of ability, or of both, than they, is the man who is almost certain to have the largest pile of papers in support of his position. And thereby it becomes exceedingly difficult to remove him. More persons are needed for the same labor than there would be under some ideal system, I do not say what. We can imagine that if they were appointed purely for efficiency and character and maintained for that, fewer persons—I do not pretend to say how many, because no man knows; the estimates are quite at random; some say a quarter less, some say a half—would do the work equally well.

"Moreover, there is unnecessary expense. The salaries must be kept higher in accordance with obvious laws of economy, because people will not enter into an uncertain service for the price they would be willing to take if they were guaranteed long continuance, or life service. A young man who comes here for one, two, three, four, or five years, is very hungry indeed to get his ten, twelve, or fourteen hundred dollars a year. If he had any guarantee of long service, or of service during good behavior (and absolutely no minute longer than that), there would be in abundance young men of capacity willing to come here and begin at six, seven, eight, or nine hundred dollars a year, trusting to a well-graded system for promotion to nine, ten, eleven, or twelve hundred dollars, as they continued in the service. Our present system is therefore, in that sense, wasteful and extravagant.

"There is another matter upon which I need not dwell in this audience, and that is the torment of the legislative branch. Senators know this well. I am happy to say I know a little less of it than some of my neighbors; but those who represent large States, especially if they are within easy reach of Washington, deserve our commiseration and should every Sunday, in the old fashion of New England, ask for the prayers of the congregation. Their desks are piled with letters, from scores upon scores, and their constituents sometimes stand in their corridors in the same proportions. How large a share and how painful a share of our troubles and anxieties are due to this matter of office-seeking, we all know too well. We are all under the necessity of hearing innumerable applications for office, of reading and preparing papers that will sustain them, of calling in person, and perhaps repeatedly, to enforce applications, of writing innumerable

letters in reference to the matter; of re-enforcing the support that an employé has; or of seeking to restore those who are discharged in times of reduction or for an alleged or a real falling below the standard, or discharged, perhaps, to give place to a *protégé* of some more favored or more ardent politician.

"We listen to the appeals of the utterly destitute. The widow comes here whose husband has been a long time a clerk or public servant somewhere, and it is impossible not to sympathize, it is impossible not to say that it would be reasonable, if she were well qualified, that she should have a clerkship. She has a dependent family; she has, perhaps, dependent relatives. You know there are scattered about these departments many who are the children of men well known in the public service of the United States, and among whose honors it was that they went out of that service penniless, whose misfortune it was that they left dependent relatives. No man can say, 'I will close my eyes and shut my ears to these appeals.' He can not do it. He may put himself upon the cold ground that 'it is my duty to be studying public measures, to be reading and thinking about and preparing for the great measures that concern the whole country'; but he comes up from his breakfast-table and finds his room full of cases that he must at least hear.

"Nor is this a matter that embarrasses one party alone. I have known gentlemen—yes, I see one now in the chamber, not a member of my own party, whom I have heard cry out against the burden, the painful labor that pained and oppressed him, and, in the vexation of the moment, declare that he would leave this hall, and go back to his farm and his happy home. There is something wrong about all this. This Government is not running a great charitable establishment; and yet, if it is to employ people in subordinate positions, you will say that equitably nobody has a better claim than a widow, or daughter, or sister, or brother of some old-time public servant, whose family for many years has been accustomed to the service of the United States, knows what it is, and can discharge the duties well; or than the dependent relative of some faithful soldier.

"There must be some relief. I said there will be. I say there can be one easily found, theoretically. Every man here, whether opposed to civil-service reform, in the ordinary language, or in favor of it, sees that he can devise some plan by which these things can be very much bettered. Well, practically there has been, in a limited area in this country, a vast improvement, and that area can be extended. I forbear to illustrate by the example of Great Britain, chiefly because many of the circumstances there are quite different. The ancient history of the civil service is different; the relations of executive and legislative power are different. They have an avowed life-term; they have pensions; they have a right of pension that grows with the years of service, analogous to what the army calls the 'old fogy ration.' There are various provisions there for which our public sentiment is not ripe, I am sure.

"Now, the bill before us does not attempt to reach the whole possible field of civil-service reform. Say there are a hundred acres over which you may imagine that it could spread. We know we have established it well in one or two or three of the hundred acres, and we know perfectly well that there are ten or fifteen acres quite analogous in conditions in which it can be equally well established; and these are about the proportions of what the present bill proposes to do. It makes no experiment; there is not a thing to be done here in this bill that has not been done, that is not being done every month, in the post-office and custom-house at New York, and to a limited extent in other places.

"The bill contains within itself a power of indefinite extension according to the judgment of the commissioners or the chief executive officer. Now, do not let us indulge in any ideal views on this subject—ideal in the direction of optimism or otherwise. You hear some of the ardent and enthusiastic friends of this measure, just as you will hear in all cases of change or reform, believing that all the evils of the civil service will vanish the moment you shall have put an iron framework of some description upon the statute-book. That is not to be so. There are to be evils, there are to be misfortunes, there are to be, if you choose, weaknesses and corruptions, no matter what system you may adopt. But I protest a great deal more vigorously against an extreme denunciation of the existing system of the country. It has become the fashion—and I take the opportunity to say it here—it has become the fashion, very largely among a class of men who have, or claim for themselves, and may to some extent be admitted to have, a culture superior to the average—the literary, the *dilettante* fashion—to speak of the whole public service of this country as corrupt. I have read, and you all have lately, and you will read frequently, in articles by these gentlemen contributed to the journals and the reviews, and in their speeches and letters, constant reference to the ruinous condition of this country and to the corrupt state of the whole public service, to the degradation of politics. These men will say, and visitors from other nations will hear them and go home and write, that gentlemen here can not enter into political affairs, and that if such and such things were different the men of culture and education and standing in the community, the gentlemen of America, would go into politics. They have no right to this language. The gentleman, the true gentleman, sir, if he sees that his country needs the reform he alleges, if he believes that its politics are in the low, mean, and corrupt condition often described, will charge into the middle of the fray; he will put himself into

politics. I have an unutterable contempt for the man who justifies his neglect of his public duties by talking about the dirty waters of politics. If they are dirty, and he thinks he knows what they ought to be, and that if he were controlling them they would be better, then he is a coward and next door to a moral traitor if he does not come in with all his soul, and not simply sit on the fence and scold the rest of us who are in, and who are conscious of as high and honorable motives, conscious of as devoted worship of the Constitution and the laws and the glory of our country as any man in the republic.

"Sir, this country is not in a ruinous condition; it is the most magnificent nation that ever lived under the sun. There are fifty-five millions of people here; some of us now here will be living when they shall number one hundred millions of people. The nation has gone through the most glorious war known in history. I am not now speaking of it at all in a partisan way. If you go to the very essence of it on both sides, it was a contest over the very fundamental question of society and of government. It was a case where forty millions of people took up the sword by the hundred thousand, and even by the million, to settle controversies, not concerning the control of the Suez canal or the Bosporus, or this, that, or the other mere territorial or trade question, but to decide upon the political and social foundations on which the future hundreds of millions of this continent shall rest.

"Look at our general financial condition. There is not a nation in the world that does not envy us the embarrassment under which we labor to-day, the embarrassment of an extraordinary and excessive revenue. We are pained by what? By debts that stagger and shake us? No; by the question of how we shall reduce our revenue, and how we shall cease to reduce our debt, which we have diminished some $1,200,000,000 since the great war closed. I affirm that throughout the great branches of the public service in general the work of the Government is well done, by men who desire to do it well. I appeal to the records of the collection of our revenue; I appeal to the figures of the reduction of our debt; I appeal to the facility with which we borrow money, and to the matchless credit this nation has now in every money market of the world. I appeal in other fields to the general provisions of our Constitution and of our fundamental laws to show that the rule of the country, however imperfect the practice of it may be, is absolute and universal freedom, equality, justice. These things the people worship; these things are in words in our Constitution and laws; they are essentially in the hearts of our people, and toward the perfection of the administration of them we are steadily aiming and marching. I believe in my country; I believe it is an honest country, as honest as ever lived: I believe it is the strongest and freest and best; and, if I may say it, it has as good a civil service as any other country, or a better one.

"At the same time I am ardently in favor of this bill and measures of this description, to be followed steadily in search of better things. I said, do not let us indulge an idea that we can make a perfect system and eliminate all evils or possibilities of evil. We can lay out some general lines under which the civil service shall be administered, without attempting to fill up the minute details. The more you do that, the more you embarrass the officers charged with the execution of the plan, and the more you relieve them from personal responsibility. I would say generally: 'Within such and such lines you shall conduct it. We do not tell you what you shall do in this, that, and the other minute affair, because the duties and proprieties will vary in each of these cases; but we hold you, the President, or this Cabinet officer, or that chief of a minor bureau, or the head of a post-office or custom-house—we hold you responsible for the thorough administration of all affairs under you under these general rules.'

"Sir, I think perhaps the most perfect human machine in the world is a regiment fully organized, with ranks full, and fully equipped. For every duty there is a man; for every man there is a duty, well graded, well related. If every man but half tries to do his duty there is no more charming movement in the world, not even that of the finest chronometer, than that of a regiment; and the essence of military organization—which military organization we are not expected to copy in civil affairs, but which nevertheless can teach us a great deal—one of the essential things of it at least is the responsibility of chiefs. The general of division or of a corps rides through a camp and perceives one regiment perfect in the performance of duty; another slovenly, dirty, with ill-regulated ranks and ignorant of duty. He does not stop to rebuke individual men. He rides back to his tent and sends word to the colonel, and that colonel makes that a better regiment speedily or he goes.

"In general analogy to that must be any good system of civil service which we shall impose, for if you attempt to tie the hands of the chief of a bureau or the chief of a department in the civil service against removals and against what you may choose to call punishment, and against some control of promotion also, just to that extent you relieve him from responsibility; just to that extent you fortify the subordinate against him, and he will encounter insolence and negligence and freely-expressed criticisms and defiance. I think no man who has had military experience would consent to take charge of a bureau of 100 persons without having something of the power of prompt removal and promotion vested in his own hands. This bill does not seek to remove those entirely, by any means.

"It is said that the President has power to do what we propose to do here. So he has,

substantially. He has it, I might say, generally and without reference to any particular statute, from the fact of his being the Chief Executive, from the general provisions of the Constitution. And we put into the statute-book in 1871 (see section 1753) these words:

"The President is authorized to prescribe such regulations for the admission of persons into the civil service of the United States as may best promote the efficiency thereof, and ascertain the fitness of each candidate in respect to age, health, character, knowledge, and ability for the branch of service into which he seeks to enter; and for this purpose he may employ suitable persons to conduct such inquiries, and may prescribe their duties, and establish regulations for the conduct of persons who may receive appointments in the civil service.

"Under that provision the President might, perhaps, do nearly all that one can here require or expect the executive department to do; but the difficulty is that it is almost impossible to do these things with the tacit and yet actual opposition of the leading body of political men in the country, and without the cordial sanction of Congress. For two years Congress gave Gen. Grant the money necessary to conduct a reform in the civil service, to pay his commission, etc., and then he asked for it in vain three years in succession. He abandoned the effort, saying frankly to Congress that if this work was not sanctioned by the vote of the legislative body, if the country really did not demand it, he should be obliged to surrender his efforts. And yet in the report made in that very year by the able civil-service commission these points are considered as established by their two or three years' practice. I have no doubt they were, because here in my hand is the volume of testimony (Report 576) given before the committee of which I have the honor to be chairman, during the last session, largely from the custom-houses of New York, Boston, and Baltimore, and the post-office of New York, and it shows that similar results are attained to-day. These are the results the civil-service commission claimed to have reached, and in Gen. Grant's message of April 18, 1874, the statements were adopted with the specific approval of the Cabinet, as the message asserts:

"1. They have, on an average, where examinations apply, given persons of superior capacity and character to the service of the Government, and have tended to exclude unworthy applicants.

"2. They have developed more energy in the discharge of duty, and more ambition to acquire information connected with official functions on the part of those in the service.

"3. They have diminished the unreasonable solicitation and pressure which numerous applicants and their friends, competing for appointments, have before brought to bear upon the departments in the direction of favoritism.

"4. They have, especially where competition applies, relieved the heads of departments and of bureaus, to a large extent, of the necessity of devoting to persons soliciting places for themselves or for others time which was needed for official duties.

"5. They have made it more practicable to dismiss from the service those who came in under the civil-service examinations, when not found worthy, than it was or is to dismiss the like unworthy persons who had been introduced into the service through favor or dictation.

"6. They have diminished the intrigue and pressure, before too frequent, for causing the removal of worthy persons for the mere purpose of bringing other, perhaps inferior, persons into the service.

"For these reasons the committee on this subject has reported in favor of continuing it. I have indicated our reasons for proposing a bill to vindicate and strengthen the Executive in carrying this reform into practical effect. And here is the bill."

Mr. Hoar, of Massachusetts, also advocated the passage of the bill. He said:

"Unless I much mistake the signs of the time, the country and Congress are now agreed in support of this measure. We are to be congratulated even upon some of the events which have taken place recently, much as we may have originally disapproved them, in so far as they have tended to bring about so much unanimity between the different political parties upon this question. From the necessity of the case, no reform in the civil-service administration of the country which takes it out from the domain of politics can ever be permanently accomplished to which both of the great parties in the country are not committed. From the necessity of the case, the party which has been in the minority, and whose opponents have possessed the administration, must, when these measures are accomplished, entitle itself to the respect and confidence of the country by a considerable act of immediate self-denial.

"Under the present system the civil service of the country is made up, and always will be made up, largely of the adherents of a single political party, and if the opponents of that party are so short-sighted as to admit that the principal object of their existence is to displace their political opponents and to gain those offices for themselves, by resistance to any well-considered scheme of reform in this particular, the evil will never be overcome. One half, or nearly one half, the American people are asked to indicate and emphasize their patriotism and their fitness for the administration of the country by denying and disdaining the use of a weapon of which they have felt the edge and the weight for many years. There is no doubt of it. It has got to be met; and unless there be statesmanship enough, and confidence in the capacity of the American people to recognize and to reward statesmanship enough, to waive that objection, the evils which now exist and prevail must be taken to be incurable.

"I think we are to be congratulated upon the indication of so far substantial unanimity in the passage of this measure, that the gentleman whose name is connected with it is an honored and distinguished leader of one side, that the chairman of the committee which reports it is an honored and distinguished leader on the other side, and that a President of the United States not identified heretofore specially in the public mind with this reform, promises in advance to give his signature and his

support to the measure if Congress shall agree upon it.

"When the Senator from Ohio (Mr. Pendleton) addressed the Senate, the other day, he directed some very eloquent and very severe reproaches against the Republican party. These reproaches were by no means wholly undeserved. They ought to be met not by counter-reproaches, not by undertaking to show by way of set-off similar conduct, or similar misconduct, on the part of his party, but by admitting and conceding the fact that this system which has come down to us from the very origin of party government in this country has gone on, sometimes operating better and sometimes operating worse, until it has reached a point where some of the abuses to which it is liable have excited the attention of the American people and caused a demand for their reform.

"When Mr. Jefferson came into power in 1801, as I said the other day, he encountered the same condition of things that the Democratic party encounters to-day. He declared that he found the civil offices of the country filled without an exception by the opponents of his administration, and he was obliged to hold back a wave and torrent of indignation from his own associates, demanding the use of the civil service of the country to establish its party in power. I have upon my desk here the correspondence between Mr. Jefferson's Attorney-General and himself with regard to the appointments in the State of Connecticut, in which a large committee of leading Connecticut Republicans set forth the political proscription under which they have labored for the past twelve years, during Adams's and Washington's administrations, at the hands of the Connecticut Federalists, and recommending the exercise of the President's power of removal to cure that condition.

"Mr. Jefferson replies in one letter he thinks the Connecticut Federalists will find that he can be as intolerant as they can; in another he proposes to exercise the power of removal in regard to all United States district attorneys and marshals and to stand at the porch of the courts; in a third, that he proposes to turn out all the men who sympathize with Hamilton and the Essex junta, whom he regards as incurable, fit only for a mad-house; and in another that he shall regard activity in the late revolution (that is, the revolution which had placed him in power) as a good reason for a political appointment, and activity on the other side as a good reason for a political removal. He says that he advises his correspondent to give him a list of the obnoxious Federalists in his State, and 'leave the rest to me.' When these things are done, and the Republican party—as it was then called, the Jefferson party—has attained its fair and just proportion of the civil offices in the country he hopes then, and it is in that connection he uttered his famous sentence, to be able to inquire, as to the person to be appointed to office, 'Is he honest, is he capable, is he faithful to the Constitution?'

"I will have the letter of Mr. Lincoln, Attorney-General of the United States under Mr. Jefferson, placed in the 'Record,' so that it may be read by the Senate and by the public without my reading it. The Attorney-General recommends to Mr. Jefferson that he shall not make all his removals at once, because, he says, that will make all the officers removed and all their friends unite in opposition to his administration; that he had better remove by degrees and let the process extend over a year or two, because then the first batch will be the only ones that will complain, and those who are left, with their friends, will stand by the Administration, thinking they are to escape.

"So that it is an entire injustice to say that when Mr. Marcy, under Jackson, made his coarse and well-known statement, that 'to the victors belong the spoils,' he was introducing for the first time this vicious system. He was avowing not a new system, but was frankly stating a system which had so far preceded the accession of Mr. Jefferson to power in 1801 that when he came in he did not find, he said, a single one of his political associates in office.

"As I said, the thing which the Democratic party is asked to do in giving its assistance to this measure is an immediate and present sacrifice for the permanent and enduring welfare of this country, and the question of its fitness ever to be trusted with administration will in my judgment be very largely determined by the American people at some time in the future as it shall itself decide this question.

"It is, I think, fairly to be said in extenuation (if it were desirable to enter into an extenuation of the conduct of those who have been charged with administration in this country) that it is only within a very recent period that there has been any substantial and adequate support in public opinion of this reform. President Grant entered upon the administration of the Government on the 4th of March, 1869, in my opinion penetrated with an earnest desire to elevate the civil service of the country not only above corruption but above party. The first important political event of his administration was the warfare of the leaders of this body when he attempted to construct the Circuit Court of the United States in favor of their claim to exercise their patronage and to control the Executive in that particular.

"Again and again down to 1874 President Grant nrged upon Congress the necessary appropriation and the necessary legislation to enable him to elevate the civil service of the country above party. The result is shown in President Grant's message of 1874, an extract from which, I think, was read by the honorable Senator from Connecticut. If so, I shall not read it again. In it President Grant declares that he shall regard the refusal by the legislative power of the continuance of the small appropriation of $25,000 in aid of his measure

as a final judgment by Congress against its expediency, and gives notice that he should thereafter abandon the attempt.

"Now, the time has come when these two belligerents are asked to agree to disuse in our political conflicts hereafter an instrument of warfare which has been so injurious to the public interest hitherto. We wish if we can now, taking advantage of the present earnest condition of public sentiment, excited on this subject, to stereotype these expressions of public opinion into a statute which may be permanent.

"Mr. President, I expect to support the bill of the committee, and, without entering upon the details which have been so much discussed, and which will be discussed further I dare say, I expect to support it for these reasons: First, that it is the measure agreed upon by the large majority of persons who have made special study of this cause. I do not propose to surrender to any man or to any body of men the prerogative or the duties of the members of this body; but I think in discharging our duties, taking upon ourselves as we must the ultimate responsibility of every measure, it is proper that a large respect should be had for the opinion of those persons who have specially studied for years the evil which we are seeking to remove, who have specially studied the proper remedy, and to whose efforts the existing public sentiment on the subject is largely due.

"Next, the bill commends itself to my judgment because it proceeds with a statesmanlike caution in making the necessary experiment and proceeding from step to step. It is applicable to only a few of the great public offices in the country besides the seven departments existing in the city of Washington. It applies, I think, to about thirty offices only out of Washington and to the departments here, and it permits the President, if he see fit, to extend gradually, as experience shall warrant, there being full opportunity for the legislative power to amend or supply any defects in this bill hereafter, until finally, if it is found expedient, it shall embrace the entire civil service of the country so far as it can be properly applied.

"Again, it is a measure justified by experience in the great offices at New York, and to some extent in Boston and in the Department of the Interior here. It is difficult to raise a practical objection to any detail of the bill to which an answer is not found in the reports of the experience of Mr. James and Mr. Pearson in the post-office in the city of New York. Every public officer to whom there comes any responsibility in putting on trial this scheme becomes a convert to its practicability and its wisdom. Every public officer under whose administration this scheme is permanently enforced becomes, as the months and years go by, a more enthusiastic and emphatic adherent of this plan.

"The measure commends itself to me also because it carefully and wisely avoids all the disputed constitutional questions which have been raised in the discussion of this subject. It nowhere trenches upon the constitutional power of the President under any definition or limitation, even the largest and broadest, of the executive powers which is to be found in our constitutional discussions. The President's right to make rules, to apply rules, to change rules, the President's responsibility growing out of his constitutional duty to see that the laws are faithfully executed, are not impaired, and in my judgment can not be impaired by legislation. I do not understand that it has been the purpose of the honorable Senator from Ohio in reporting this bill in any degree to infringe upon the constitutional prerogative of the Executive.

"It does not assert any disputed legislative control over the tenure of office. The great debate as to the President's power of removal, the legislative power to establish a tenure of office with which the President could not interfere, which began in the first Congress, which continued during the contests of the Senate with Andrew Jackson, revived again at the time of the impeachment of Johnson, and again in the more recent discussion over the Tenure-of-Office Bill in the beginning of the administration of President Grant, does not in the least become important under the skillful and admirable provisions of this bill.

"It does not even (and that is a criticism made upon it, but in my judgment it is one of its conspicuous merits) deal directly with the question of removals, but it takes away every possible temptation to improper removals. What Executive, what head of a department, what influential public man anywhere can seek in the least to force a worthy and deserving public officer from his office merely that there may be a competitive examination to fill his place—to fill a place at the bottom of the list, not to fill his place, as is well suggested?

"Now, Mr. President, while this avoids the use of any doubtful constitutional power or mechanism to create a removal, it, as I have said, cures the great abuse which has existed recently by removing the temptation to an improper removal. In my own judgment the abuse of improper, cruel, and unjust removals of worthy and deserving public officers is an abuse almost or quite equal to the other against which this bill directly aims, the use of the civil service of the country as a political instrumentality.

"I congratulate the Senator from Ohio, I congratulate the Senator from Connecticut, I congratulate the country, on the auspicious circumstances under which this bill has been presented; and, whatever else may happen, I believe if this system shall be inaugurated now, the session of this winter will be one of the marked and conspicuous eras in the political history of the country, as the time when the two great political parties were willing, under

the spur and excitement of an aroused public opinion, to unite in laying down for the permanent welfare of the country a weapon of offense and of defense which had come down to them from the past, and whose present use in the immediate future might seem to be so convenient. I believe the adoption and inauguration of this scheme, if it shall prove successful, as I confidently expect, will be regarded in the future by the American people almost as the adoption of a new and a better Constitution."

Mr. Brown, of Georgia, opposed the civil-service reform vigorously. He said: "I admit it is very important that there be a better system of administration inaugurated than we have had for many years past. I do not think, however, that the bill now before the Senate, if passed, will inaugurate any such system. I think it will prove a mere delusion. If we pass it we excite popular expectation, and popular expectation will be greatly disappointed in the workings of the system. I have heard the British system spoken very highly of; many eulogies passed upon it. It has been said by advocates of this bill—probably not on the floor, but again and again outside of the chamber—that we should adopt something similar to that system, if not the exact system itself.

"Now, Mr. President, the forms of the two governments are entirely different, the circumstances are different, and the surroundings are different. The system that may work well there in a limited monarchy, the policy of which is to maintain an aristocracy, even a landed aristocracy, is not appropriate to a republican form of government like ours.

"In Great Britain the executive is hereditary. The incumbent derives his right, not by election of the subjects or citizens of that country, but by birthright. The upper house of the British Parliament is not elected, but those who occupy seats there, unlike this body, are dependent upon the accidents of birth for them, not upon any special merits or personal qualifications that they may have, but the duke takes his seat because he is the son of the former duke.

"That is not our American system. It is very consonant, however, with that system to adopt a civil-service rule that, while the executive is for life and hereditary and the higher branch of the legislative department holds for life and is hereditary, will make the subordinate officers hold for life. I say it is consistent and compatible with that system. It is not so here. Under our republican system no man takes anything by hereditary right, but the way is open to the son of the humblest peasant within the broad limits of our domain, if he has merit and energy and ability, to occupy the highest position in the Government. Our theory is that men are to be promoted on account of merit and qualifications. It may not always be carried out—of course it can not always be—but that is the nature of the system and that is the general practice. It is compatible, therefore, with that system to leave the changes in the legislative department, in the executive department, and in every department except the judicial, to the frequent mutations of parties and to the supposed merits of the competitors who compete for the prizes. In all the departments, legislative and executive, qualification is supposed to be looked to. Election of Representatives and the higher officers is the general idea. Why in the face of that should we establish for the subordinate officers in the different executive departments and in all the larger offices within the limit of the United States a system of lifetime tenure for the very large class of persons who fill those places? I say it is not compatible with our very form of government. It is one step in the direction of the establishment of an aristocracy in this country, the establishment of another privileged class.

"It may be said, however, and I believe that sentiment was uttered only a few days ago, though not in the language I use, probably, that it takes away from persons who hold these positions the inducement to be active politicians. In some cases that might be the working of it; but bear in mind, Mr. President, it leaves it in the power of every one of them to become an active politician, and if the spirit of the system is carried out as claimed by the Senator from Massachusetts (Mr. Hoar), the officers can be as active as they choose on one side, and one side alone, and run no risk of losing their positions. It builds up a powerful class supported out of the Treasury of the United States, out of the taxes of the people, and places in their hands the power, if they choose to exercise it—and there is a great deal of human nature in man, so that they probably would exercise it—the power to do much to control the future rulers and destinies of this Government.

"I am not very fresh from my reading of Roman history; but as I recollect it there was a period in the history of that government when it became necessary to establish the prætorian guard to protect the ruler against the populace. It would naturally enough have been claimed that that guard would take no part in the politics of Rome, and yet in the workings of time that prætorian guard became the master of Rome and assumed control of the government. As they protected the sovereign, they dictated who should be the sovereign, and for a large enough amount of money they would displace one sovereign to make room for another. How do we know that we may not build up a similar class here when we build up a lifetime aristocracy in office, or when we establish a lifetime tenure of office? It is contrary to the very genius and spirit of our Government.

"If there be really in the popular mind a demand for any such bill as is usually termed civil-service reform, it is a bill to make perma-

nent the positions of those who hold offices, to confine removals to cause alone. The class who ask for it, I think, are a very small minority of the American people. At the same time they ask for it in that spirit and with that purpose, and they would consider themselves mocked if this bill is passed containing no protection for the incumbents against removal without cause. What good does it do as a measure of reform if the power of removal is unlimited and without cause at the mere will or whim of the appointing power? The civil-service reformers who are most clamorous for action, and who are in earnest about the matter, would consider such a measure, if that is all it means, as a trick, a sham, a delusion.

"But it requires a competitive examination, say the Senators on the other side, before you put a man into office. There again the bill is a cheat and a mockery. It does no such thing in spirit and substance. For fear there might come a day when a Democratic Executive would administer the affairs of this Government, and that day might not be very distant, there is a careful provision in this bill that it shall apply only to the lowest class who are to hold office. There shall be a competitive examination for the lowest grade only; that is free to all; and the Senator from Massachusetts who took his seat a few minutes ago very earnestly stated that that was one of the strong features in it.

"Now, I believe that there is a very large number of employés in the departments at present, occupying different positions in them, some of them high positions, who are not fit for those places, morally, intellectually, or in any other manner; but the charmed circle is not to be disturbed. If there chances to be one of the lower clerkships vacant, then the doors are thrown wide open by this bill and every American citizen may come up and compete for it. It will not do to go higher than that, for too many Democrats might get in. You Democrats can come up and compete for the lowest clerkships that are to be filled; but if a vacancy occurs above that, then the Republican employés and officers already in office, and they alone, can apply for the advancement or promotion. That is the civil-service reform that this bill gives to the country; that is the share that the Democratic party gets in it. I repeat it, under the provisions of this bill the competition is only general for the lowest office that can become vacant. There a Democrat stands a chance to get in this lowest position, but if fifty vacancies occur above it only the present incumbents, the Republican office-holders, can compete for the promotion. That is what it holds out to the Democratic party. That is our share in its benefits.

"Now, I am going to talk plainly to Democrats. It is not required for us to mince words here, for the country very well understands this whole question. The Republican party have had the offices of this Government for the last twenty-two years consecutively. The Executive has been Republican, and they have had the distribution of the offices and places. They still have it. True, an avalanche has swept over the country, and with it the strongest condemnation of the practices of that party. It is true this was in the off year, and not the presidential year, but prudent, sagacious men on the other side of the chamber understand this as well as we do on this side. If we make no great blunders—and I know I have heard it said on the other side that they rely a great deal on Democratic blunders, for we sometimes make them—unless the Democracy is guilty of great folly on some important questions there can be, to my mind, and I think to the minds of Senators generally, but little doubt that the next President of this republic will be a Democrat.

"I am speaking now to Democrats. How do you go into that campaign? Suppose you put my honorable and worthy friend from Ohio (Mr. Pendleton), or my honorable friend from Delaware (Mr. Bayard), or any other one of the prominent and able gentlemen mentioned for the place, in nomination for the presidency, and you go before the Democratic masses of the United States and tell them that you are handicapped; that all the offices that amount to anything, the higher and more important places, are already disposed of. 'Disposed of how?' they will inquire. 'Why, the Republican party have had them for twenty-two years, and seeing that there was a probability of a change of administration'—to put it in no stronger light—'they have hedged, and they have taken good care of themselves; they have passed a civil-service bill and Democrats have helped them to enact it; and we have it on the statute-book now that there is no Democrat to be put into office in any of the executive departments except in the lowest positions. Above them the Republicans alone may compete with each other for the places; but there is no chance for a Democrat.'

"In a free republican government like this those who belong to both parties fight for office as well as principle. Do you believe that the Democratic leaders in all the different States would work with the same energy, and zeal, and ability as they would if you held out to them a chance of a change of the offices, with the change of the Executive? It would be contrary to all the history of the past to expect any such work.

"I know it has been replied to this that the Democratic candidate would not likely have so strong opposition from the Republican office-holders in office. I have no faith in that. The Republican office-holders are usually ardent, true Republicans; they believe in the principles and practices of their party, and they want to promote and perpetuate them, and they believe that that party has a sort of divine right to the offices of this Government, and they will be as true to their party in the campaign

as the needle is to the pole, while you deaden the energies of the Democratic leaders from the lowest to the highest by taking away any inducements you would otherwise hold out to them to fight with the view of reaping any of the rewards of success. They would vote the ticket patriotically as true Democrats, but they would not exert themselves as they would do if they believed there would be a general change, or even a change of one half the persons holding the offices.

"I say, then, take it any way you will, I do not see, with great deference to my friend from Ohio, why at this time a Democrat should vote for this bill; certainly not without important amendments, that destroy the aristocracy of Republican office-holding that this bill provides for. Will Democrats vote for it when it closes the doors of the competitive examination against Democrats for every position except the very lowest? I do not wonder that our Republican friends are very unanimous, and very anxious at this time for the passage of this bill. The only wonder I have is that it has taken them so long to reach this point. The first four years when they were in power were years of war. It was then no time to discuss civil service.

"Perhaps the next two or three years ought not be counted, during the stormier period of reconstruction; but take off six years from twenty-two and it leaves about sixteen years of peace, when Senators and Representatives were in condition here to consider the best interests of the whole country. It has taken them sixteen years to reach the point of, as they consider, a real civil-service reform. Well, now, to show the humbuggery in this whole affair, there was a very good civil-service statute put upon the book some years ago when Gen. Grant was President, and the law was not only enacted but the machinery was provided. The three commissioners—I believe three was the number—were appointed. As is contemplated by the act, they went to work; civil-service reform, it was said, was going to be given to the country then. Broad plenary powers were given to the President. There were some very patriotic and able gentlemen, too, on the commission. One of them was from my own State, Judge D. A. Walker, an honored name, a worthy gentleman, a true Republican. They worked and did, no doubt, the best they knew how; and what real substantial reform did the country see? It became so much of a mockery that Congress in a few years afterward refused to appropriate the salaries of the commissioners. It was seen to be a deception and a fraud in practice, whatever might have been intended and however sincere President Grant might have been in his purpose to carry it out in good faith. It failed. It was an inglorious failure; and matters went on as matters will go on in this Government.

"This is a republican government; it is democratic in form, and you have to change the nature of the government and change human nature also before you will be able to adopt in practice here any Utopian theories about civil service.

"I do not laud the sentiment mentioned by the honorable Senator from Massachusetts, which he attributes to Mr. Marcy, that 'to the victors belong the spoils.' He said it was rather coarse. Probably it was; but yet to a very great extent it has been the system practiced from the first day of the inauguration of this Government: and whatever you may put upon the statute-book it will be the system practiced until its funeral-knell is sounded. And no party in this Government ever practiced the spoils system with more zeal and energy than the Republican party has. 'To the victors belong the spoils' has been its constant motto in practice; and still would be, if impending defeat did not stare it in the face. There may be some reforms, some of the worst features may be cut off; but in the main the Executive who comes into power when his party has long been deprived of power will find a way, and the heads of departments under him will find a way to give to his followers the benefit of the offices or a large proportion of them.

"I say the argument is legitimate, that, give the measure all you claim for it, then as Democrats you should not vote to handicap your candidate, and you should not vote to retain in office for life those who have held the positions for so long a time, and who are your political enemies. But if it is not true that it will be executed or that it amounts to anything, then this is a vain business in which we are engaged, and we had better spend our time in something that is of some practical utility.

"The preamble of this bill promises very finely. I desire to read it:

"*Whereas*, common justice requires that, so far as practicable, all citizens duly qualified shall be allowed equal opportunities, on grounds of personal fitness, for securing appointments, employment, and promotion, in the subordinate civil service of the United States.

"That is very broad. It would seem to be a very good doctrine. But I confess I was struck when I looked further over and saw that in the very teeth of that recital of the proper principle the competitive examinations are limited to the lowest grade of offices. That means, I suppose, that it is justice in case of the lowest grade to give everybody a chance; but above that the benefit must be confined to the inner circle, those who have held office a long time and want to continue to hold it; in other words, to Republicans.

"Again, the preamble says:

"*Whereas*, justice to the public likewise requires that the Government shall have the largest choice among those likely to answer the requirements of the public service.

"That is good doctrine, but the body of the

act is in the teeth of it. The Government should have the largest choice among those likely to answer the requirements as to qualifications for office, and yet you limit the choice of the Government in the body of the bill to the lowest grade.

"Again:

"*Whereas*, justice, as well as economy, efficiency, and integrity in the public service, will be promoted by substituting open and uniform competitive examinations for the examinations heretofore held in pursuance of the statutes of 1853 and 1855.

"Economy, efficiency, and the integrity of the service will be promoted, says the preamble, by substituting competitive examinations, and yet the body of the bill denies the competitive examination, so far as the public generally are concerned, to all persons except for the lowest grade of offices. But reference has been made here to the letter and doctrines of Mr. Jefferson on this question. He has been cited as authority, and he is very high authority on any subject that he ever handled. There are certain expressions in his letter to Mr. Lincoln that are warped to mean that removals should take place for cause only, and that qualifications and fitness alone should be looked to. Mr. Jefferson made very important qualifications of that doctrine in that letter. I propose to read a portion of it. He speaks of the action of the leaders of the Federal party at that time, and says (see his letter to Levi Lincoln, dated 25th of October, 1802, vol. iv, Jefferson's Works, page 450):

"They are trying slanders now which nothing could prompt but a gall which blinds their judgments as well as their consciences. I shall take no other revenge than by a steady pursuit of economy and peace, and by the establishment of republican principles in substance and in form, to sink Federalism into an abyss from which there shall be no resurrection for it. I still think our original idea as to office is best; that is, depend for the obtaining a just participation on deaths, resignations, and delinquencies.

"But Mr. Jefferson says more than that:

"This will least affect the tranquillity of the people and prevent their giving in to the suggestion of our enemies, that ours has been a contest for office, not for principle. This is rather a slow operation—[and if he had been confined to the lowest grade of office alone he would have thought it a great deal slower]—but it is sure if we pursue it steadily, which, however, has not been done with the undeviating resolution I could have wished.

"Mr. Jefferson only waited for deaths, resignations, and delinquencies. When these came, a Republican, as the Democrats were then called, was to be put into office. He declares that was very slow. And what does this bill do? It waits in the same manner for deaths, resignations, or delinquencies, but only in the lower grades. It does not give us the chance of putting in a Democrat in every grade that becomes vacant, because the competitive examination must be from those in office at the time; for all above the lowest grade. It confines us to the lowest grade. What would Mr. Jefferson have said if there had been an attempt to confine him to the lowest grade in filling offices where vacancies occurred in the manner already designated? He would have thought it was a great deal slower than the slowness of which he complained.

"Again, he said:

"To these means of obtaining a just share in the transaction of the public business shall be added one other, to wit, removal for electioneering activity.

"What would he have said to the hundreds of clerks who are given time when elections come on to go to Ohio, and the extreme limits, wherever there is a Republican State, to take an active part in controlling the State elections? Would he not have swept the last one of them from office? He adds 'Or open and industrious opposition to the principles of the present Government, legislative and executive.'

"If they took an active part in politics against him, or if they were open in opposition to the principles of the party in power administering the Government, they were to go by the board. Hear him again:

"Every officer of the Government may vote at elections according to his conscience; but we should betray the cause committed to our care were we to permit the influence of official patronage to be used to overthrow that cause. Your present situation will enable you to judge of prominent offenders in your State, in the case of the present election.

"'Prominent offenders in your State.' That is, those who had taken a prominent part against his party in Connecticut. That was what he meant, and it would be left to Mr. Lincoln to judge of those who had been prominent in that way. Then he adds, 'I pray you to seek them, to mark them, to be quite sure of your ground, that we may commit no error or wrong, and leave the rest to me.'

"He was President and said: 'Seek them; mark them; be quite sure of your ground, and then leave the rest' to him; he would take care of it. Again he says:

"I have been urged to remove Mr. Whittemore, the surveyor of Gloucester, on grounds of neglect of duty and industrious opposition. Yet no facts are so distinctly charged as to make the step sure which we should take in this. Will you take the trouble to satisfy yourself on this point? I think it not amiss that it should be known that we are determined to remove officers who are active or open-mouthed against the Government, by which I mean the Legislature as well as the Executive.

"Mark his language. He thought it not amiss that it should be known that they were determined to remove from office those who had been active and open-mouthed against the Government whether in the legislative or the executive department. That was the sort of civil service that Mr. Jefferson advocated; that was the advice he gave to his friend Lincoln, of Connecticut; and mind you, he says, 'Mark them, and leave the rest to me.' And so it will be, no matter what civil-service bill you may pass; whenever the President and the heads of departments desire to do so, they will mark them, and they will find a way of getting rid of them.

"Now, Mr. President, one word as to the natural inherent justice of this case aside from all political views of it, or any partisan view; what is right, what is just. According to this preamble, it is right and just that men should take their chances in procuring office, and have a fair chance in accordance with their ability, their intelligence, and their fitness for the place; all tax-payers and all citizens should stand upon grounds of equality, taking chances alike, with no favored class and no proscribed class.

"What is the state of things in this republican Government of ours? There are now, it is said, about 55,000,000 people; there are about 110,000 officers and persons holding employment under the Government, and those places are held by Republicans almost invariably. It is true the Senator from Massachusetts told us a while ago that the President of the United States now stands pledged to sign and support a measure for civil-service reform. Why does he stand so? What new-born idea has put him on that platform? I speak kindly of him personally, for I have great regard for him; but his political course we have a right to discuss. What administration, at any time since the foundation of this Government, has ever been more proscriptive, so far as appointments to office are concerned? How many Democrats has he left in, holding offices of any importance? Some of his predecessors were more liberal on that subject. But when he came in I presume those having influence required of him that he should make a clean sweep, and he has made it as near as any administration ever can.

"What, then, is the modest proposition here? It is to give to the Republican party, according to the theory of the advocates of the bill, especially the theory of the Senator from Massachusetts, a permanency in these offices. What is the Republican party of this country? It is a minority of the people of this country. In 1876 Samuel J. Tilden was elected President of these United States, and he got a popular majority of about 250,000. In 1880 James A. Garfield was legally and constitutionally elected President of these United States, but he was elected by a plurality only; adding the Democratic vote and the Greenback vote together, he was beaten on the popular vote by over 800,000 majority. The Republican party, then, are a minority of the people of the United States, and yet they hold to-day almost all the offices connected with the Government of the United States. Is it right, Mr. President, as a naked question of justice, equity, and fair play, that this state of things should continue? They have had this advantage for twenty-two years. How long has this minority a divine right to govern this country?

"No, if we are to have a just and equitable civil-service reform, let it be a reform of the abuses of the party that has so long wielded the power of the Government, and let that reform be put upon the basis that in future competitive examinations, when you ascertain the two highest, the Democrat shall be preferred until one half the office-holders are Democrats. I can see an equity in that; not if you confine it, however, as this bill does, to the lowest grade of officers; but if you will throw all the offices in these departments open to competition when vacancies occur, and then take the two highest and give the preference to the Democrat until the Democrats have half the offices, there is something like a just and equitable civil service. You would have to give the Greenback party some portion; but I am willing to meet this question anywhere upon the equity and justice of the case. I do not fear to go before the populace upon it, and say that I do not favor this policy of civil service, because of its injustice, its inequality, and its want of equity. The Democrats perform their part of the duties and bear their part of the burdens of this Government; they pay their portion of the taxes; they do their part of the military service; in a word, they do faithfully the duties incumbent upon citizens.

"Why is it, then, that they should be proscribed not only for the long period, when it has already been so, but for all future time? Why are they not worthy of their part in the patronage and offices of the Government if they bear their part in the burdens of the Government? Will some Senator who is so anxious for this civil-service reform please tell me why it is that the Democrats have no equity, no rights as a class? I know it has become popular to prate about civil-service reform. We have had it in Presidents' messages and in reports of heads of the departments until it is in everybody's mouth, and yet how delusive! In practice it amounted to nothing from the very commencement, and now this bill proposes to make it an engine of inequality, injustice, and wrong to the larger half of the tax-payers and voters and people of the United States.

"I will give my sanction to no such measure, and if no other man in this chamber votes against it I will pride myself in recording my vote against a measure that proscribes a majority of the people of the United States, with which majority I act, and drives them from public positions for almost a generation to come, opens the way to the lowest grades that we may come into the lowest positions only, and leaves the balance to those already in, who are all Republicans. I treat it on its equities, I treat it on its justice, and denounce it as unfair, as fraught with wrong, injustice, and inequality, and I ask any one who can to defend it as a principle of equity. If the Democracy had been twenty-two years in power, and had the control of the offices and patronage of this Government, I say to my colleagues on this side you would hear a different voice from the other side, in my opinion; I think they would see, and have no difficulty in reaching the con-

clusion, that the bill was unjust, unequal, and ought not to pass.

"But there is another provision in connection with this bill which may require some attention. The country has been greatly shocked by the practices of the Republican party, by their levying assessments upon subordinates in the various offices of the Government to be used for political purposes, and both sides seem now to agree on the propriety of enacting stringent laws against such a practice in future. In other words, we propose in future to make it highly penal, if not a penitentiary crime, for any officer or committee to do what the Republican committee did in the last campaign. And while I deny that the great majority of the people of the United States have either clamored or called for a civil-service measure of the character contemplated by this act, I admit that there is a general demand for the enactment of a law to punish, and punish severely, the practice of soliciting and virtually compelling donations of part of their salaries from subordinates in the different departments. But why pass a civil-service bill of the character of this to get that provision into it? Why not meet the question fairly and squarely, like bold, sensible men, and amend the penal code of the United States by the enactment of a law providing ample punishment for those who practice this system in future? No civil-service bill is necessary. It wants a penal statute to make the infamous practice a high misdemeanor, if not a felony. Those who claim that the people at the last election not only condemned the corrupt methods and practices of the Republican party, but that they demand the so-called civil-service reform contemplated by this bill as a remedy, make a great mistake. The corrupt practices have been condemned. The people have spoken in thunder-tones of condemnation and denunciation, which can neither be ignored nor misunderstood. They denounce the admitted malpractice of Republican officials, and demand a remedy. But what remedy? Not that we pass a law to continue the perpetrators of these great wrongs in office for life or a term of years. The party to which they belong has held power twenty-two years. It is time there was a change. And the people demand, as a remedy for existing abuses, a change of officials. They demand that the unfaithful public servants, whose maladministration can not be denied, be hurled from power, and that their places be filled by honest, capable men, who will reform the public service by a return to the purer and better methods practiced by the fathers of the republic; who will cut off all surplus and unnecessary officials, clerks and employés; and all extravagant waste of the public treasure, which is wrung by taxation from the labor of the people."

Many Senators participated in the debate on the passage of the bill; but the discussion, though long, was not interesting, and frequently degenerated into partisan recriminations. Senators Voorhees, Vest, and Cockrell, especially took occasion to bring out the record of the party in power, in contrast with the principles of the measure. The bill finally passed the Senate, Dec. 27, 1882, by the following vote:

YEAS—Aldrich, Allison, Anthony, Bayard, Cameron of Pennsylvania, Cameron of Wisconsin, Cockrell, Coke, Conger, Davis of Illinois, Davis of West Virginia, Edmunds, Frye, Garland, George, Gorman, Groome, Harrison, Hawley, Hill, Hoar, Jackson, Jones of Florida, Jones of Nevada, Lamar, Lapham, Logan, Miller of California, Miller of New York, Morrill, Pendleton, Platt, Plumb, Rollins, Sewell, Vest, Walker, Windom—38.

NAYS—Brown, Call, Jonas, McPherson, Morgan—5.

ABSENT—Barrow, Beck, Blair, Butler, Camden, Chilcott, Dawes, Fair, Farley, Ferry, Grover, Hale, Hampton, Harris, Ingalls, Johnston, Kellogg, McDill, McMillan, Mahone, Maxey, Mitchell, Pugh, Ransom, Saulsbury, Saunders, Sawyer, Sherman, Slater, Vance, Van Wyck, Voorhees, Williams—33.

In the House, the bill was referred to the select committee on civil-service reform, and reported back without amendment by Mr. Kasson, of Iowa, Jan. 4, 1883. He at once moved the previous question, which was carried, and after a brief discussion the measure passed the House by the following vote:

YEAS—Aldrich, Anderson, Barr, Bayne, Beach, Belford, Belmont, Beltzhoover, Berry, Bingham, Bisbee, Blanchard, Bowman, Bragg, Briggs, Buck, Buckner, Julius C. Burrows, Jos. H. Burrows, Butterworth, Calkins, Campbell, Candler, Cannon, Carlisle, Carpenter, Cassidy, Caswell, Chace, Clark, Cobb, Sam'l S. Cox, Wm. R. Cox, Crapo, Cravens, Cullen, Curtin, Lowndes H. Davis, Deering, De Motte, Deuster, Dezendorf, Dingley, Ermentrout, Erret, Sewell S. Farwell, Fisher, Flower, Ford, Frost, George, Godshalk, Grout, Guenther, Gunter, Hall, Jno. Hammond, Hardy, Harmer, Benj. W. Harris, Haseltine, Haskell, Hatch, Hepburn, Herbert, Abram S. Hewitt, G. W. Hewitt, Hill, Hiscock, Hitt, Hoblitzell, Holman, Houk, Humphrey, Jacobs, Jadwin, Geo. W. Jones, Phineas Jones, Jorgensen, Kasson, Kelley, Ketcham, Klotz, Lacey, Lewis, Lindsey, Lord, Matson, McClure, McCook, McKinley, Robt. M. McLane, Jas. H. McLean, Miles, Miller, Morey, Morrison, Morse, Moulton, Mutchler, Neal, Nolan, Norcross, O'Neill, Payson, Peelle, Peirce, Pettibone, Phelps, Pound, Ranney, Reed, Wm. W. Rice, Rich, D. P. Richardson, Ritchie, Robeson, Geo. D. Robinson, Wm. E. Robinson, Rosecrans, Ryan, Scoville, Scranton, Sherwin, Otho R. Singleton, Skinner, A. Herr Smith, J. Hyatt Smith, Speer, Spooner, Springer, Stockslager, Talbott, Taylor, P. B. Thompson, Wm. G. Thompson, Amos Townsend, Tyler, Updegraff, Urner, Vance, Van Aernam, Van Horn, Wadsworth, Wait, Walker, Ward, Washburn, Watson, Webber, Chas. G. Williams, Willis, Willits, Wilson, Walter A. Wood.—155.

NAYS—Aiken, Atherton, Atkins, Blackburn, Bland, Bliss, Blount, Brumm, Buchanan, Caldwell, Clements, Culberson, Dunn, Forney, Garrison, Geddes, N. J. Hammond, Hardenbergh, Hoge, Hubbs, Kenna, King, Knott, Leedom, Le Fevre, Manning, Marsh, McKenzie, McMillin, Mills, Moore, Oates, Reagan, Jas. S. Robinson, Ross, Smalls, Sparks, Steele, Thomas, Henry G. Turner, Oscar Turner, Upson, Warner, Wellborn, Whitthorne, Thos. Williams, Geo. D. Wise.—47.

NOT VOTING—Armfield, Barbour, Black, Brewer, Browne, Cabell, Camp, Chapman, Clardy, Colerick, Converse, Cook, Cornell, Covington, Crowley, Cutts, Darrall, Davidson, Geo. R. Davis, Dawes, Dibrell, Dowd, Dugro, Dunnell, Dwight, Ellis, Evins, Chas.

B. Farwell, Fulkerson, Gibson, Henry S. Harris, Hazelton, Heilman, Henderson, Herndon, Hooker, Horr, House, Hubbell, Hutchins, Jas. K. Jones, Joyce, Ladd, Latham, Lynch, Mackey, Martin, Mason, McCoid, Money, Mosgrove, Muldrow, Murch, Pacheco, Page, Parker, Paul, Phister, Prescott, Randall, Ray, Reese, Jno. B. Rice, Theron M. Rice, J. S. Richardson, Robertson, Russell, Scales, Shackelford, Shallenberger, Shelley, Shultz, Simonton, Jas. W. Singleton, Dietrich C. Smith, Spaulding, Stone, Strait, R. W. Townsend, Tucker, Valentine, Van Voorhis, West, White, Morgan R. Wise, Benj. Wood, Young—87.

January 16th the bill was approved by the President. It is as follows:

An act (S. 133) to regulate and improve the civil service of the United States.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the President is authorized to appoint, by and with the advice and consent of the Senate, three persons, not more than two of whom shall be adherents of the same party, as civil-service commissioners, and said three commissioners shall constitute the United States civil-service commission. Said commissioners shall hold no other official place under the United States.

The President may remove any commissioner; and any vacancy in the position of commissioner shall be so filled by the President, by and with the advice and consent of the Senate, as to conform to said conditions for the first selection of commissioners.

The commissioners shall each receive a salary of $3,500 a year. And each of said commissioners shall be paid his necessary traveling expenses incurred in the discharge of his duty as a commissioner.

SECTION 2. That it shall be the duty of said commissioners: 1. To aid the President, as he may request, in preparing suitable rules for carrying this act into effect, and when said rules shall have been promulgated it shall be the duty of all officers of the United States in the departments and offices to which any such rules may relate to aid, in all proper ways, in carrying said rules, and any modifications thereof, into effect.

2. And, among other things, said rules shall provide and declare, as nearly as the conditions of good administration will warrant, as follows:

1. For open, competitive examinations for testing the fitness of applicants for the public service now classified or to be classified hereunder. Such examinations shall be practical in their character, and so far as may be shall relate to those matters which will fairly test the relative capacity and fitness of the persons examined to discharge the duties of the service into which they seek to be appointed.

2. That all the offices, places, and employments so arranged or to be arranged in classes shall be filled by selections according to grade from among those graded highest as the results of such competitive examinations.

3. Appointments to the public service aforesaid in the departments at Washington shall be apportioned among the several States and Territories and the District of Columbia upon the basis of population as ascertained at the last preceding census. Every application for an examination shall contain, among other things, a statement, under oath, setting forth his or her actual *bona fide* residence at the time of making the application, as well as how long he or she has been a resident of such place.

4. That there shall be a period of probation before any absolute appointment or employment aforesaid.

5. That no person in the public service is for that reason under any obligation to contribute to any political fund, or to render any political service, and that he will not be removed or otherwise prejudiced for refusing to do so.

6. That no person in said service has any right to use his official authority or influence to coerce the political action of any person or body.

7. There shall be non-competitive examinations in all proper cases before the commission, when competent persons do not compete, after notice has been given of the existence of the vacancy, under such rules as may be prescribed by the commissioners as to the manner of giving notice.

8. That notice shall be given in writing by the appointing power to said commission of the persons selected for appointment or employment from among those who have been examined, of the place of residence of such persons, of the rejection of any such persons after probation, of transfers, resignations, and removals, and of the date thereof, and a record of the same shall be kept by said commission.

And any necessary exceptions from said eight fundamental provisions of the rules shall be set forth in connection with such rules, and the reasons therefor shall be stated in the annual reports of the commission.

3. Said commission shall, subject to the rules that may be made by the President, make regulations for, and have control of, such examinations, and, through its members or the examiners, it shall supervise and preserve the records of the same; and said commission shall keep minutes of its own proceedings.

4. Said commission may make investigations concerning the facts, and may report upon all matters touching the enforcement and effects of said rules and regulations, and concerning the action of any examiner or board of examiners hereinafter provided for, and its own subordinates, and those in the public service, in respect to the execution of this act.

5. Said commission shall make an annual report to the President for transmission to Congress, showing its own action, the rules and regulations and the exceptions thereto in force, the practical effects thereof, and any suggestions it may approve for the more effectual accomplishment of the purpose of this act.

SEC. 3. That said commission is authorized to employ a chief examiner, a part of whose duty it shall be, under its direction, to act with the examining boards, so far as practicable, whether at Washington or elsewhere, and to secure accuracy, uniformity, and justice in all their proceedings, which shall be at all times open to him.

The chief examiner shall be entitled to receive a salary at the rate of $3,000 a year, and he shall be paid his necessary traveling expenses incurred in the discharge of his duty.

The commission shall have a secretary, to be appointed by the President, who shall receive a salary of $1,600 per annum. It may, when necessary, employ a stenographer and a messenger, who shall be paid, when employed, the former at the rate of $1,600 a year, and the latter at the rate of $600 a year. The commission shall, at Washington, and in one or more places in each State and Territory, where examinations are to take place, designate and select a suitable number of persons, not less than three, in the official service of the United States, residing in said State or Territory, after consulting the head of the department or office in which such persons serve, to be members of boards of examiners, and may at any time substitute any other person in said service living in such State or Territory in the place of any one so selected. Such boards of examiners shall be so located as to make it reasonably convenient and inexpensive for applicants to attend before them; and where there are persons to be examined in any State or Territory, examinations shall be held therein at least twice in each year.

It shall be the duty of the collector, postmaster, and other officers of the United States, at any place outside of the District of Columbia where examinations are directed by the President or by said board to be held, to allow the reasonable use of the public buildings for holding such examinations, and in all proper ways to facilitate the same.

SEC. 4. That it shall be the duty of the Secretary of the Interior to cause suitable and convenient rooms and accommodations to be assigned or provided, and to be furnished, heated, and lighted, at the city of Washington, for carrying on the work of said commission and said examinations, and to cause the necessary stationery and other articles to be supplied, and the necessary printing to be done for said commission.

SEC. 5. That any said commissioner, examiner, copyist, or messenger, or any person in the public service who shall willfully and corruptly, by himself or in cooperation with one or more other persons, defeat, deceive, or obstruct any person in respect of his or her right of examination according to any such rules or regulations, or who shall willfully, corruptly, and falsely mark, grade, estimate, or report upon the examination or proper standing of any person examined hereunder, or aid in so doing, or who shall willfully and corruptly make any false representations concerning the same or concerning the person examined, or who shall willfully and corruptly furnish to any person any special or secret information for the purpose of either improving or injuring the prospects or chances of any person so examined, or to be examined, being appointed, employed, or promoted, shall for each such offense be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than $100, nor more than $1,000, or by imprisonment not less than ten days, nor more than one year, or by both such fine and imprisonment.

SEC. 6. That within sixty days after the passage of this act it shall be the duty of the Secretary of the Treasury, in as near conformity as may be to the classification of certain clerks now existing under the one hundred and sixty-third section of the Revised Statutes, to arrange in classes the several clerks and persons employed by the collector, naval officer, surveyor, and appraisers, or either of them, or being in the public service, at their respective offices in each customs district where the whole number of said clerks and persons shall be altogether as many as fifty. And thereafter, from time to time, on the direction of the President, said Secretary shall make the like classification or arrangement of clerks and persons so employed, in connection with any said office or offices, in any other customs district. And, upon like request, and for the purposes of this act, said Secretary shall arrange in one or more of said classes, or of existing classes, any other clerks, agents, or persons employed under his department in any said district not now classified; and every such arrangement and classification upon being made shall be reported to the President.

2. Within said sixty days it shall be the duty of the Postmaster-General, in general conformity to said one hundred and sixty-third section, to separately arrange in classes the several clerks and persons employed or in the public service at each post-office, or under any postmaster of the United States, where the whole number of said clerks and persons shall together amount to as many as fifty. And thereafter, from time to time, on the direction of the President, it shall be the duty of the Postmaster-General to arrange in like classes the clerks and persons so employed in the postal service in connection with any other post-office; and every such arrangement and classification upon being made shall be reported to the President.

3. That from time to time said Secretary, the Postmaster-General, and each of the heads of departments mentioned in the one hundred and fifty-eighth section of the Revised Statutes, and each head of an office shall, on the direction of the President, and for facilitating the execution of this act, respectively revise any then existing classification or arrangement of those in their respective departments and offices, and shall, for the purpose of the examination herein provided for, include in one or more of such classes, so far as practicable, subordinate places, clerks, and officers in the public service pertaining to their respective departments not before classified for examination.

SEC. 7. That after the expiration of six months from the passage of this act no officer or clerk shall be appointed, and no person shall be employed to enter or be promoted in either of the said classes now existing, or that may be arranged hereunder pursuant to said rules, until he has passed an examination, or is shown to be specially exempted from such examination in conformity herewith.

But nothing herein contained shall be construed to take from those honorably discharged from the military or naval service any preference conferred by the seventeen hundred and fifty-fourth section of the Revised Statutes, nor to take from the President any authority not inconsistent with this act conferred by the seventeen hundred and fifty-third section of said statutes; nor shall any officer not in the executive branch of the Government, or any person merely employed as a laborer or workman, be required to be classified hereunder; nor, unless by direction of the Senate, shall any person who has been nominated for confirmation by the Senate be required to be classified or to pass an examination.

SEC. 8. That no person habitually using intoxicating beverages to excess shall be appointed to, or retained in, any office, appointment, or employment to which the provisions of this act are applicable.

SEC. 9. That whenever there are already two or more members of a family in the public service in the grades covered by this act, no other member of such family shall be eligible to appointment to any of said grades.

SEC. 10. That no recommendation of any person who shall apply for office or place under the provisions of this act which may be given by any Senator or member of the House of Representatives, except as to the character or residence of the applicant, shall be received or considered by any person concerned in making any examination or appointment under this act.

SEC. 11. That no Senator or Representative or Territorial Delegate of the Congress, or Senator, Representative, or Delegate elect, or any officer or employé of either of said Houses, and no executive, judicial, military, or naval officer of the United States, and no clerk or employé of any department, branch, or bureau of the executive, judicial, or military or naval service of the United States shall, directly or indirectly, solicit or receive, or be in any manner concerned in soliciting or receiving, any assessment, subscription, or contribution for any political purpose whatever, from any officer, clerk, or employé of the United States, or any department, branch, or bureau thereof, or from any person receiving any salary or compensation from moneys derived from the Treasury of the United States.

SEC. 12. That no person shall, in any room or building occupied in the discharge of official duties by any officer or employé of the United States mentioned in this act, or in any navy-yard, fort, or arsenal, solicit in any manner whatever, or receive any contribution of money or any other thing of value for any political purpose whatever.

SEC. 13. No officer or employé of the United States mentioned in this act shall discharge, or promote, or degrade, or in any manner change the official rank or compensation of any other officer or employé, or promise or threaten so to do, for giving or withholding or neglecting to make any contribution of money or other valuable thing for any political purpose.

SEC. 14. That no officer, clerk, or other person in the service of the United States shall, directly or indirectly, give or hand over to any other officer, clerk, or person in the service of the United States, or to any Senator or member of the House of Representatives, or Territorial Delegate, any money or other valuable thing on account of or to be applied to the promotion of any political object whatever.

SEC. 15. That any person who shall be guilty of violating any provision of the four foregoing sections shall be deemed guilty of a misdemeanor, and shall,

on conviction thereof, be punished by a fine not exceeding $5,000, or by imprisonment for a term not exceeding three years, or by such fine and imprisonment both, in the discretion of the court.

Reduction of the Rates for Letter-Postage.—In the Post-Office Appropriation Bill, as reported from the House Committee on Appropriations, there was a provision for the reduction of postage on letters from 3 cents to 2 cents per half-ounce, recommended by the Committee on the Post-Offices and Post-Roads. The proposition was discussed at some length in both branches of Congress. Mr. Bingham, of Pennsylvania, in advocating the measure, Dec. 14, 1882, before the House, said:

"I desire, before the House passes judgment upon the question of reduction of postage incorporated in the bill now before us, to submit some facts as well as some figures (figures which have been verified by the Post-Office officials and found correct), warranting and justifying the proposition, reported by the Committee on the Post-Office and Post-Roads, for a reduction of the rate of letter-postage from 3 cents per half-ounce to 2 cents per half-ounce, or fraction thereof, as the law for the future, and that this measure should go into effect on the 1st of January, 1884, that date being fixed as the time the reduction could be made without the necessity of a deficiency in the present bill; for at the end of the next fiscal year, June 30, 1884, there will be under a 2-cent rate no deficiency called for by the Post-Office Department to be appropriated from the Treasury.

"Taking the estimates submitted by the department of the amount of business which will be done during the next fiscal year, it will be $8,000,000. The way that is reached is by a sum total of the sales of postage-stamps and stamped envelopes during the past year and 10 per cent. added for the current year and 10 per cent. of increase for the next fiscal year. That 10 per cent. is an average estimate of the increase of the postal business of the country, and is added for this and the next year.

"It is believed, Mr. Chairman, so far as an examination of the discussion of this question has been common to the newspaper press and the great monthly leading publications of the country, that in view of the vast sums of money flowing into the Treasury of the Government at the present time, not only from the Post-Office Department but from the various other sources of revenue which come to the Government from the systems of taxation to which the people are subject, now is the time for the reduction of letter-postage from 3 cents to 2 cents, and that such legislation will find a hearty approval from every community and section of the country.

"Sir, in order that the House may understand that 2-cent postage is not a temporary expedient or an unduly considered proposition of to-day, the Committee on the Post-Office and Post-Roads in their bill reported to this House one week ago, asking that this reduction might take effect on the 1st of January, 1884, referred to the history of postage, and developed in the investigation information of a character that can with directness, and to my mind convincing force, be called to the attention of this House, without reference at this time to the several reductions of postage on letter matter since the first act of Congress fixing rate of postage on domestic letters, Feb. 20, 1792, was passed. It seems but just that the recommendation under date of Nov. 30, 1850, of Postmaster-General N. K. Hall, and the approval of the same by President Fillmore, should receive attention.

"Ex-Postmaster-General Hall, in his report, 1850, makes the following recommendation:

"A considerable reduction of letter-postage and the adoption of a uniform inland rate are desired by a large portion of the people of the United States. . . . I recommend that the inland letter-postage be reduced to 3 cents the single letter when prepaid, and be fixed at the uniform rate of 5 cents when not prepaid; and also that the Postmaster-General be required to reduce this prepaid rate to 2 cents the single letter whenever it shall be ascertained that the revenues of the department, after the reductions now recommended, shall have exceeded its expenditures by more than 5 per cent. for two consecutive fiscal years.

"President Fillmore, under date of Dec. 2, 1850, calls the attention of Congress to the recommendations of his Post-master General, in this language:

"I am happy to find that the fiscal condition of the department is such as to justify the Postmaster-General in recommending the reduction of our inland letter-postage to 3 cents the single letter when prepaid and 5 cents when not prepaid. He also recommends that the prepaid shall be reduced to 2 cents whenever the revenues of the department, after the reductions, shall exceed its expenditures by more than 5 per cent. for two consecutive years.

"Congress acted upon the recommendation of President Fillmore and Postmaster-General Hall, and for the first time gave to the people a uniform inland rate and adopted the 3-cent postage for all distances not exceeding 3,000 miles.

"The conditions suggested in 1850 are now almost literally fulfilled, and the reduction to the 2-cent rate has found equally as able and sincere indorsers in the several recommendations of gentlemen who have carefully investigated the subject.

"In 1862 a committee, appointed by the merchants and business men of New York, presented a petition to Congress asking for postal reform and a reduction of rates in letter matter. The paper is so able and comprehensive that I ask the indulgence of the House while I read several paragraphs pertinent to the question at issue. The committee use this language:

"The committee to whom it was referred to prepare an address to the people of the United States upon the necessity of postal reform, and also as to the nature and extent of the changes that should be introduced into our postal system, beg leave to report:

"There is no feature that more peculiarly characterizes the Government under which we live, there is nothing perhaps upon which its peculiar character depends more than the rapid, constant, and general intercommunication between its citizens. Unlike the countries of Europe, no material obstacle of dialect, much less of language, interposes itself from one end of the republic to the other; no class privileges or prejudices separate one portion of the community from another; the methods of communication are various and extensive; and it may safely be affirmed that there is no country in the world where there is the same uniformity of habits, opinions, and modes of action as in the United States. Of the various methods of communication that of rapid, punctual, and safe correspondence by mail is the most important and the most highly valued by the citizen. Were our post-office the most efficient and the best conducted in the world, and were it at the same time the most expensive branch of the General Government, it is believed that no one would object to the cost, whatever it might be.

"Following the example of the monarchical governments of the Old World, the framers of our Constitution invested Government with a monopoly of mail operations. The people of the United States have never seen fit to revoke that power. It then unquestionably becomes the duty of Government to bring our postal establishment to the highest possible state of efficiency; but the almost unanimous voice of public opinion declares that our post-office is entirely inadequate to meet the wants of the people. . . .

"With very material reductions of postage that we have had within the last twelve years, we do not believe we have established that rate which will best accommodate the public and give the highest revenue. All experience, both in our own and other countries, demonstrates clearly that the number of letters written and sent by mail is in proportion to the facilities of transmission and in an inverse ratio to the cost of postage. The postal statistics of every nation show conclusively that, however great the reduction of postage, the revenue and profits have invariably increased. . . .

"It might not be unreasonable to maintain, with the economy of management attending a uniform rate of postage and the vast increase of correspondence that would attend a material reduction of charges, that the Post-Office would sustain itself under the uniform rate of 1 cent. One half of the postal revenue of Great Britain being clear profit, shows that this rate would be abundantly able to support the post-office in that country. Without, however, instituting a direct comparison between that country and this, we are fully convinced that a uniform rate of two cents a letter is the most equitable and convenient charge that can be made; a rate that will eventually produce the largest revenue, and a rate justified by every consideration of justice, economy, and sound national policy. . . .

"With most persons of ample means three cents would not be considered a high rate of postage, but with large numbers of the poorer and humbler classes that charge unquestionably abridges correspondence and retards business and social intercourse.

"Hon. A. D. Hazen, Third Assistant Postmaster-General, uses this language in a public document concerning a discussion of postal questions:

"The deficiency of revenue from the Treasury to meet the expenditures was only 7·5 per cent. at the close of the last year; and with a gain of more than 10 per cent. in receipts over expenditures during the past three years, it is not improbable that the postal service will be self-sustaining within the next three years. More than this: with the increasing intelligence of our people; with a continuation of our present business prosperity; with the rapidly-growing density of our population, more especially in the sparsely-settled regions of the country; with wise and faithful administration of the Government, the way will be paved not only for a still greater efficiency of the service, but for a reduction of postage, even on the basis of an equality between the postal receipts and the postal expenditures. The present decade may witness a reduction of the domestic letter rate of postage from three to two cents upon these conditions. The Post-Office Department must continue to keep pace with the development and growth of the material interests of the country, if it would deserve to remain the 'cherished favorite' with the American people.

"Again, ex-Postmaster-General James uses this language in his official report:

"If these suggestions are deemed worthy of consideration and Congress carries them out, the reduction of letter-postage from three to two cents will be possible within three years. I believe the reduction could be accomplished without a proportional diminution of receipts, which followed the adoption of three-cent postage in 1851. The people have shown their appreciation of cheap postage. The introduction of the postal-card, instead of diminishing the receipts, has, on the whole, largely increased them. Two-cent postage would, I believe, after one or two years' trial, produce the same result. It is my deliberate judgment that two-cent postage is possible in the near future.

"This was under date of Nov. 15, 1881.

"The message of President Arthur, submitted to this House under date of Dec. 4, 1882, is strong, forcible, and clear in its distinct and unequivocal recommendation of the 2-cent rate.

"The proposition is a simple one, that any reduction, large or small, in the rate of postage that may be directed by legislation will benefit the masses of the people. I assert, Mr. Chairman, that the mere statement of the proposition carries its own conclusion. The census enumeration of 1880 gives the statistics showing the average degree of education of the people, and the statistics of the Post-Office Department show to what extent the people have exercised their educational opportunities and have availed themselves of the facilities of the Post-Office Department.

"As illustrating the extent to which the mails of the country are used, the following report, which has been incidentally referred to by the gentleman from Kansas in his debate with the gentleman from Massachusetts, for the year ending Dec. 30, 1880, will best indicate that which I am referring to, and will explain the general as well as special effects of postage relief which the people of each and every State will enjoy when the reduction recommended is accomplished. The table I refer to, and which I will append as a part of my remarks, and which is a part of the report as emanating from the Committee on the Post-Office and Post-Roads, is based upon the result of an actual count of mail matter originating at all the post-offices and railway post-offices of the United States during the first seven days of December, 1880. I use the data of December, 1880, because no count has been made for the year 1881. And right in that connection, before referring to the table, I want this committee to understand the exact relations that the American people hold with the people of

other nations and governments of the world in the use of the mails as a means of communication. The number of post-offices are in the following relative proportion, and I will insert the table in full in my remarks in order that the details may be examined.

"I quote from the report of the Superintendent of Foreign Mails for the year ending July 30, 1882:

"It appears by these statistics that the relative rank of the principal union countries, in respect to the following particulars, was as follows:

"1. In number of post-offices the United States ranks first, with 42,989 offices; then Great Britain, with 14,549; Germany, with 9,460; France, 5,942; Japan, 4,665; Russia, 4,458; British India, 4,409; Austria, 4,025; Italy, 3,328; Switzerland, 2,852; Spain, 2,642; Hungary, 2,301; Sweden, 1,785; the Netherlands, 1,316; Norway, 924; Mexico, 897; Belgium, 792; Portugal, 755; Denmark, 560.

"2. In respect to the relative proportion between the number of post-offices and that of population the principal countries of the union rank as follow: Switzerland has an average of 993 inhabitants to each post-office; the United States, 1,167 to each office; Norway, 2,078; Great Britain, 2,872; Sweden, 2,565; the Netherlands, 3,085; Luxemburg, 3,175; Denmark, 3,537; Germany, 4,778; Austria, 5,498; France, 6,211; Portugal, 6,285; Spain, 6,333; the Argentine Republic, 6,400; Belgium, 6,991; Hungary, 7,258; Japan, 7,701; Italy, 8,545.

"3. In number of letter-boxes for reception of correspondence the principal countries rank as follow: France, 57,960 letter-boxes; Germany, 57,782; Great Britain, 27,782; the United States, 18,460; Italy, 11,550; Spain, 9,406; Austria, 8,013; Russia, 7,957; Japan, 6,935; British India, 6,392; Belgium, 5,456; Switzerland, 5,270; Denmark, 3,382; Hungary, 3,263; the Netherlands, 3,047; Sweden, 2,700; Portugal, 1,303.

"4. In number of letters conveyed in the mails the principal countries rank as follow: Great Britain, 1,176,423,600 letters; the United States, 847,830,029; Germany, 522,689,800; France, 488,462,763; Austria, 174,999,000; Italy, 151,471,018; British India, 118,-072,439; Russia, 92,451,476; Spain, 66,525,891; Hungary, 64,647,572; Belgium, 61,209,200; the Netherlands, 48,070,539; Switzerland, 45,739,594; Japan, 36,898,795; Sweden, 27,130,454; Denmark, 22,011,999; Portugal, 14,124,919.

"5. In number of postal-cards conveyed in the mails the principal countries rank as follow: The United States, 275,324,224 postal-cards; Germany, 135,-135,100; Great Britain, 122,884,000; Austria, 36,026,-000; France, 27,540,065; Japan, 19,884,451; Italy, 19,714,710; Belgium, 14,720,342; the Netherlands, 13,775,947; Hungary, 12,965,458; British India, 7,471,984; Switzerland, 6,649,297; Russia, 4,682,544; Sweden, 1,250,081; Roumania, 685,802; Portugal, 252,751; Norway, 209,014; Denmark, 173,128; Spain, 161,986; Luxemburg, 155,883.

"6. In respect to the number of letters and postal-cards per each inhabitant the principal countries rank as follow: Great Britain, 37·6 to each inhabitant; the United States, 22·8; Switzerland, 22·4; the Netherlands, 17·1; Belgium, 16·2; Germany, 15·6; France, 14·9; Denmark, 12·6; Luxemburg, 11·7; Austria, 11·1; Sweden, 6·9; Italy, 6·6; Norway, 5·7; Spain, 4·1; Portugal, 3·3; Greece, 1·7; Japan, 1·6; Roumania, 1·2; Russia, 1·1.

"7. In number of newspapers conveyed in domestic mails the principal countries rank as follow: The United States, 730,269,063 newspapers; Germany, 420,944,000; France, 285,691,654; Great Britain, 133,796,100; Russia, 83,233,945; Italy, 81,060,778; Austria, 75,282,900; Belgium, 64,680,000; Switzerland, 49,967,736; the Netherlands, 33,682,452; Hungary, 27,722,577; Denmark, 25,007,457; Sweden, 21,087,036; Japan, 17,596,758; British India, 11,251,-021; Norway, 10,402,002; Argentine Republic, 7,500,-000; Greece, 1,688,841.

"Several of the bills that have received the attention of the post-office committee indicate one ounce as the basis or minimum weight for the first rate of postage. It is not considered that the change from one half ounce to one ounce as the basis would afford relief to the great body of correspondents. While the large business houses and firms would enjoy the reduction, the average letter would not be carried for a less rate. Nor is it deemed advisable at this time to embrace the two propositions of an increase in weight and a reduction in rate in the legislation recommended. The half-ounce weight is the basis in the Universal Postal Union, now embracing all the civilized countries and colonies of the world except Bolivia and the British Australasian colonies. The half-ounce is also the basis for the domestic rate of postage in the principal countries of the world.

"The official reports of the Post-Office Department for the year ended June 30, 1882, show a marked surplus over expenditures. A small surplus, $132,202.65, however, occurred in the year 1851, and again in the year 1865, when it amounted to $861,430, doubtless occasioned by the suspension of mail service in the Southern States. During the year ended June 30, 1851, the receipts amounted to $6,410,-604.33, and the expenditures to $6,278,401.68. In the year 1852 the receipts were $5,184,-526.84, and the expenditures $7,108,459.04, leaving a deficiency of $1,923,932.20, or 27 per per cent., to be supplied from the general Treasury. This deficiency steadily grew, principally by reason of largely increased expenditures, until 1860, nearly one half of the expenditures for which year were paid out of the Treasury.

"During the four years of the war, from 1861 to 1865, the receipts fell only 4·7 per cent. short of the expenditures. In 1865 alone, as before indicated, there was a small surplus of receipts. The restoration of service in the Southern States again increased the burden on the Treasury, so that in 1868 28·3 per cent. of the expenditures were supplied from that source. From this point the tendency was generally toward lower deficiencies, but still in 1875 the Treasury contributed 20·2 per cent. of the expenditures. In 1879 the deficiency was 10·1 per cent., and for 1881 the receipts fell 7 per cent. short of the expenditures. This deficiency was not only wiped out during the last year, but a surplus of 3·6 per cent. of the receipts will remain after extinguishing all the liabilities for the year.

"I believe the introduction of the postal-card for 1 cent contributed largely to the increase of the revenues of the Post-Office Department. But I go further and will say that I believe that when we reduce the postage on letters to 2 cents, many who have recognized the economy of saving 2 cents as between the letter

and the postal-card, and now use the postal-card as a means of economy and thereby save 2 cents of postage, will under the 2-cent rate for letters give up the postal-card, in order to secure secrecy in their correspondence.

"From the establishment of the Government the principle has been recognized and the effort of every administration has been directed to the making of the postal service self-supporting, while at the same time every facility possible has been extended to the people. In the British service, as well as in our own, the rate charged for the transmission of mail matter was based on the estimated absolute service rendered, the distances the mail was carried being the basis of the rate charged. The act of Congress of 1851 qualifiedly changed the existing statutes and made the inland service uniform in the rate charged for distances less than 3,000 miles. The limit, however, of 3,000 miles was wiped out by the act of 1863, which gave us the uniform rate of 3 cents the half-ounce or fraction thereof, and which is the statute enforced to-day. The people have never complained when the deficiency in the postal service required appropriations from the Treasury. Nor, on the other hand, has any special effort been made to secure large surplus results, greater conveniences, larger facilities, and cheaper rates of postage for all classes of mail matter seem to have been recommended and to have formed a part of every Postmaster-General's report for many years.

"General Hazen, in a paper submitted to me, asserts that the department is surely on a paying basis, and as the receipts are increasing at a much greater rate than the expenditures, the general Treasury will at an early day, unless there should be a change in the present conditions, be a large gainer from the profits of the postal service. If, however, the theory be correct that the earnings should not be permitted to exceed the outlays of the service, the question is squarely presented as to how the balance shall be maintained. If the present profits could be used advantageously to extend facilities and to afford conveniences to the public not now enjoyed, there can be scarcely a doubt of the popular willingness to have them applied in this direction.

"Popular as has been the idea of a self-sustaining service, public opinion has ever sanctioned the granting of needful sums from the Treasury, rather than the usefulness of the service should be impaired by a lack of means from the postal revenues. But the expenditures for the coming year have been estimated upon the full measure of the public requirements, as well as the same can now be anticipated, and yet they fall considerably short of the estimated revenues. The result promises to be a large increase on the present profits. The time would seem to be auspicious, therefore, for a reduction in the rates of postage.

"In reference to the effect of reduction in postage the experience of the past has been found instructive. The changes in rates of domestic matter were comparatively unimportant up to the 1st of July, 1845. In order that the several changes in the domestic rates may be fully understood by the House I have inserted in my remarks a part of the report of the Committee on the Post-Office and Post-Roads, which cites the various statutes since 1792, when the first statute was enacted covering the first postage on letter matter. Then gentlemen can see for themselves the gradual changes and observe the many reductions:

1. February 20, 1792, was the first act fixing rates of postage on domestic letters, and established the following rates, to take effect June 1, 1792:

Act February 20, 1792, section 9, by land: For every single letter not exceeding 30 miles, 6 cents.

For every single letter over 30 miles, and not exceeding 60 miles, 8 cents.

For every single letter over 60 miles, and not exceeding 100 miles, 10 cents.

For every single letter over 100 miles, and not exceeding 150 miles, 12½ cents.

For every single letter over 150 miles and not exceeding 200 miles, 15 cents.

For every single letter over 200 miles, and not exceeding 250 miles, 17 cents.

For every single letter over 250 miles, and not exceeding 350 miles, 20 cents.

For every single letter over 350 miles, and not exceeding 450 miles, 22 cents.

For every single letter over 450 miles, 25 cents.

For every double letter, double the said rates.

For every triple letter, triple the said rates.

For every packet weighing one ounce avoirdupois to pay at the rate of four single letters for each ounce, and in that proportion for any greater weight.

2. Act March 2, 1799, section 7, establishes a General Post-Office at the seat of Government of the United States.

For every letter composed of single sheet of paper conveyed not exceeding 40 miles, 8 cents; over 40 miles, and not exceeding 90 miles, 10 cents; over 90 miles, and not exceeding 150 miles, 12½ cents; over 150 miles and not exceeding 300 miles, 17 cents; over 300 miles, and not exceeding 500 miles, 20 cents; over 500 miles, 25 cents.

Double letter or two pieces of paper, double rates.

Triple letter or three pieces of paper, triple rates; and for every packet composed of four or more pieces of paper, or other thing, and weighing 1 ounce avoirdupois, quadruple rate, and in same proportion for greater weights.

3. Act April 30, 1810, section 11: Rates of postage on letters and packets:

	Cents.
Single sheet of paper, less than 40 miles	8
Single sheet of paper, 40 to 90 miles	10
Single sheet of paper, 90 to 150 miles	12½
Single sheet of paper, 150 to 300 miles	17
Single sheet of paper, 300 to 500 miles	20
Single sheet of paper, over 500 miles	25

Double letters or two pieces of paper, double rates; triple letters or three pieces of paper, triple rates; every packet composed of four or more pieces of paper or other thing, and weighing one ounce avoirdupois, quadruple rate; and in same proportion for greater weight.

4. Act April 9, 1816, section 1: Rates of postage after May 1, 1816:

	Cents.
Every letter composed of a single sheet of paper, less than 30 miles	6
Over 30 miles and not exceeding 80 miles	10
Over 80 miles and not exceeding 150 miles	12½
Over 150 miles and not exceeding 400 miles	18¾
Over 400 miles	25

Every double letter or two pieces of paper, double rates.

Every triple letter or three pieces of paper, triple rates.

Every packet containing four or more pieces of paper or one or more other articles, and weighing one ounce avoirdupois, quadruple these rates, and in that proportion for all greater rates.

5. Act of March 3, 1825, section 13: Same as act of April 9, 1816.

6. Act March 3, 1845, section 1: After July 1, 1845. Postage on letters: For every single letter in manuscript, or marks and signs, by mail, under three hundred miles, 5 cents; over three hundred miles, 10 cents; double letter, double rates; treble letter, treble rates; quadruple letter, quadruple rates; and every letter or parcel not exceeding one half ounce in weight shall be deemed a single letter, and every additional weight of one half ounce or less shall be charged with an additional single postage.

7. Act March 3, 1851, section 1: Rates of postage on letters: From and after June 30, 1851, in lieu of rates of postage now fixed by law, there shall be charged the following rates:

Every single letter, in writing, marks, or signs, by mail, not exceeding three thousand miles, prepaid postage, 3 cents; not prepaid, 5 cents; for any greater distance, double these rates.

8. Act March 3, 1855, section 1: In lieu of the rates of postage now fixed by law, there shall be charged the following rates:

For every single letter, in manuscript or paper of any kind, in writing, marks, or signs, conveyed in the mail between places in the United States, not exceeding 3,000 miles, 3 cents; and for any greater distance, 10 cents; for a double letter, double rates; treble letter, treble rates; quadruple letter, quadruple rates; every letter or parcel not exceeding one half ounce in weight shall be deemed a single letter, and every additional weight of one half ounce or less shall be charged an additional rate.

9. Act March 3, 1863, section 22, fixes the rate of postage on domestic letters not exceeding one half ounce in weight at 3 cents, and 3 cents additional for each additional half ounce or fraction thereof, to be prepaid by postage-stamps affixed.

Taking distance into account, it will be observed that the reduction in the charges was very great if the comparison is made on the rates prior to July 1, 1845, and the rates fixed to take effect July 1, 1845. The rates established by the act of March 3, 1851, also mark a great reduction.

Although a temporary loss of revenue followed these two reductions, it was speedily followed in both cases by a large increase.

"I again avail myself of the valuable figures of Mr. Hazen, Third Assistant Postmaster-General:

For several years prior to 1845 the revenues were almost stationary in amount; indeed, for the four years ended June 30, 1845, the total amount was $304,433.64 less than for the four years immediately preceding that period. For the year ended June 30, 1845, the revenue was $4,289,841.80, and for the next year, under the reduced rates, it was $3,487,199.35, showing a falling off of $802,642.45. For the year 1847 it increased to $3,880,309.23, and for the year 1848 to $4,555,211.10, or $265,369.30 more than for the year 1845, the entire recovery of the loss of revenue from the reduction in the rates having thus occurred within three years. The increase continued at a rapid pace, so that for the year ended June 30, 1851, the revenue was $6,410,604.33, being $2,120,762.53, or 49·4 per cent., more than for the last year (1845) under the old rates, and $2,923,404.98, or 83·8 per cent., more than for the first year (1846) of the new rates.

The immediate loss of revenue by the act of March 3, 1851, was still greater, but this, too, was speedily recovered. The falling off in the first year of the change was $1,226,077.49, the entire receipts for the year ended June 30, 1852, having been $5,184,526.84. For the year ended June 30, 1854, the revenue amounted to $6,255,586.22, or only $155,018.11 less than for the year 1851, the loss by the reduction of the rates having been nearly recovered in three years. For the year 1855 the revenue was $231,531.80 more than for 1851. The increase steadily continued, and for the year ended June 30, 1860, the revenue was swelled to $8,518,067.40, being $2,107,463.07, or 32·8 per cent., more than for the year 1851, and $3,333,540.56, or 64·2 per cent., more than for 1852.

Again, during the eight years from 1837 to 1845 there were no material changes in the rates of postage, and yet the revenue for 1845 was $655,826.41, or 13·2 per cent., less than for 1837, while the revenue for the year ended June 30, 1853, was $950,882.90, or 22·1 per cent., over that of 1845, notwithstanding that both of the great reductions in the rates of postage had occurred during the intermediate eight years.

For the year 1882 the receipts were more than eight times as much as for 1852, and the increase alone for 1882 over 1881 was only $93,514.66 short of the entire receipts for the year ended June 30, 1852, the first year of the 3-cent rate. Some idea of the immediate loss by a reduction from 3 cents to 2 cents in the rate of letter-postage may be obtained from the issues of the ordinary 3-cent adhesive stamps and stamped envelopes.

It is true that many letters calling for more than one rate of postage bear the higher denominations of stamps, but it is also true that many 3-cent stamps are used for parcels of merchandise and other matter not belonging to the first class. The amount of 3-cent stamps used in this way will probably exceed that of the larger stamps used on letters, so that a diminution of 33⅓ per cent. in the value of the 3-cent stamps would represent the maximum loss on an equal volume of business. The number of the ordinary 3-cent stamps and stamped envelopes issued during the fiscal year ended June 30, 1882, was 849,159,950. An increase of 10 per cent. on these would give 934,075,945 as the issue for the current year. This latter number increased by 10 per cent. would give 1,027,483,539 for the next fiscal year. One cent taken from the value of each of these would amount to $10,274,835.39.

"Now the act of 1863 fixed the rate of postage on domestic letters not exceeding one half ounce in weight at 3 cents, and 3 cents additional for each additional half ounce or fraction thereof, to be prepaid by postage-stamps. The recommendation of the Committee on the Post-Office and Post-Roads, which I am glad to see has been almost literally adopted in this bill, makes a simple change in the law of 1863, that of the reduction of rate from 3 to 2 cents per half ounce, and the same shall go into effect the 1st of January, 1884.

"It is claimed that the stimulus of the lower rate would be felt at once, and that there would be a large increase of letters mailed, which is the history of all legislation that pertains to a reduction on domestic matter. It is probable that a cheaper letter rate would tend also in a measure to dispense with a large number of postal-cards for written communications. In view also of the fact that sealed communications invite closer attention by the recipients than do open ones, it is not improbable that to some extent circulars would be inclosed under a seal at the 2-cent rate. Taking these special reasons into account, it is believed by the Post-Office Department that the loss of revenue for the first year may be safely put at $8,000,000, leaving the revenue

for the year at $42,670,456.27 instead of $50,-670,456.27, as already estimated upon the basis of existing rates. This estimate of $42,670,-456.27 for the year 1884 on a 2-cent rate is $3,393,594.89, or 7·3 per cent., less than the estimated revenue for 1883, and it is $794,046.12 more than the actual revenue for 1882.

"Unless the experience of past reductions in this and other countries should be at fault in this instance, the reduction now proposed in the letter rate will be speedily followed by a large augmentation of business, and it will at no distant day prove to have been an economic measure of the highest importance to the postal service as well as to the country."

The appropriation bill, containing the provision for the reduction of letter-postage, to go into effect Jan. 15, 1884, was passed by the House Dec. 20, 1882, and was taken up for discussion in the Senate Jan. 17, 1883. Among the opponents of the proposed reduction was Senator Platt, of Connecticut, who said: "I believe that this proposition to reduce postage from 3 cents to 2 cents upon sealed letters is premature, and I desire that Congress shall have the opportunity for a second sober thought before the law goes into operation. I will endeavor in the briefest manner possible to give my reasons why I think this proposed reduction is premature.

"In the first place, if postage is to be reduced there are other directions in which the reduction is as imperatively demanded as in this direction. The additional postage of 1 cent upon drop-letters in cities having free delivery is a real burden upon the business correspondence of those cities. I think it should receive first attention, as I will endeavor to show as I proceed. It doubles the postage upon letters as a penalty for having free delivery which the Government ought not only to give without additional pay but ought very largely to extend.

"Then I think the postage on unsealed letters, business correspondence in unsealed letters, might be reduced to 2 cents quite as properly as this reduction; but I think that the whole scheme of the reduction of postage at this time is premature. I know that there seems to be the opinion prevailing in Congress and in certain newspapers that there is a very general demand for this reduction in letter-postage. I confess I have not heard it out of Congress and out of the newspapers. I have not heard it among the people, and I do not believe that the people esteem it to be any hardship upon them to pay 3 cents postage upon a letter sent to any part of this country. Where one person has spoken to me on that subject ten persons have spoken to me on other matters connected with the post-office system, and I think the general desire among the people is that there shall be no reduction of postage till the revenues of the Post-Office Department have been expended to develop and perfect the post-office system and give the people greater conveniences than they now have, and make that system more efficient.

"I make no criticism upon the Post-Office Department. The growth and development of the post-office system has been great. Postmasters-General have done all that they could under the disposition in Congress not to make large expenditures for the Post-Office Department so long as there was a deficiency. Many improvements which they would have desired to introduce and have recommended to Congress time and time again they have not been able to carry out because Congress would not make the necessary appropriations, and the reason given in Congress for not making the necessary appropriations always has been that the Post-Office Department entailed a large deficiency. Now, for the first time in twenty years, I think, the Post-Office Department is self-sustaining, and we have arrived just at that point where we ought to improve this system, where we ought to make it more efficient, where we ought to study the convenience of the people and see that the United States is not behind the rest of the world in the conveniences which it affords to the people through this postal system.

"Now, allow me to refer to some minor matters. The matter of office accommodations at the third and fourth class offices is a matter in which there may be very great improvement. The convenience to the people can be wonderfully enhanced. I will not weary the Senate by going into detail. It is within the personal observation of every Senator who is familiar with the post-offices in the smaller places, that the conveniences might be increased 100 and 200 per cent. with very little additional expense. I think it ought to be done. I think the expenses necessary to make this increase should be borne now when the department is self-sustaining. If it is not done now it never will be.

"Another thing that I wish to speak of is this: We should have more frequent mails. Take New England and the Middle States, and Senators will be surprised to learn, I think, that certainly one fifth of the mail routes in the New England and Middle States are less than daily. Is there any reason why in these States, where a railroad reaches usually within ten or fifteen miles of every town, every town should not have a daily mail? I know towns in my own State, within eight or ten miles of a railroad, that have but a semi-weekly mail. I have endeavored to have it increased to a daily mail, but I have been met continually with the statement that Congress would not appropriate sufficient money for that purpose, and the reason Congress would not do it was because there was a deficiency in the Post-Office Department. Take the towns and cities that are situated upon railroads, the mails carried upon railroads should be increased in frequency. A town of three or five thousand inhabitants, situated upon a railroad, should never be dependent upon one daily mail. And

upon this point, there is no reason why we should not have special mail facilities by fast trains. That subject, which was discussed here yesterday, points what I am saying upon this matter. The speed of mails should be increased. We should carry mails as fast as passengers are carried in this country, and we should not stand here higgling and debating whether we will spend $185,000 in a year to increase the speed of mails, to make it possible to send a letter to Chicago or St. Louis and get an answer a day quicker than we should otherwise. What the people want in these matters is to be well served, served as well as it is possible that they shall be served, no matter what the expense is. Take the matter of box-rents. The whole subject of box-rents needs readjusting. They need to be cheapened. We want better offices, better box accommodations, better service at offices.

"But, Mr. President, there is another thing that we want still more. We want the free delivery of the mails extended, and largely extended. There are in the United States, according to the census, 246 cities of over 10,000 inhabitants. In those cities very nearly one quarter of the population of the United States resides. There is no reason why the Government should not deliver in every one of those cities of the United States, without the additional charge of one cent upon each drop-letter, the letters received in those cities, at the doors of the individuals to whom they are addressed. Oh, but, Senators say, that will cost money. Indeed, it will cost money, but I desire that the Post-Office revenues shall not be reduced until a convenience like that shall be extended just as far as it is practicable to extend it.

"I find by the Postmaster-General's report that only 112 cities now have free delivery. The law only makes it obligatory upon the Postmaster-General to give a free delivery of letters in cities of 30,000 inhabitants, and makes it discretionary with him to allow it in cities where the population is 20,000, or the gross revenues are $20,000. I think that that law should be repealed. I find by the Postmaster-General's report, desirous as he has been and desirous as Congress has been that there should be no deficiency in the Post-Office Department any longer, that this free-delivery system has been extended to but three cities in the United States during the past fiscal year.

"Take my own State. From recollection, I say that there are something over fifteen towns and cities having a population compact, I think, within a mile or two of the post-office to the farthest delivery, ranging in population from five to twenty-five thousand inhabitants. I think it much better to spend the surplus revenues of the Post-Office Department in seeing that within such towns and cities as those letters are delivered at the doors of those to whom they are addressed without extra charge for the service, rather than that postage should be reduced. I believe that the people think so too. I do not believe that the people are clamoring at the doors of Congress to reduce postage from three cents to two cents until these improvements have been adopted. In Great Britain more than 90 per cent. of the letters are delivered to the individuals at their residences or places of business, and I think, without extra charge. It is a principle of the English system that the delivery of letters shall be universal.

"More than 90 per cent. of the letters going through the British Post-Office are delivered at the doors of the persons to whom they are addressed. In the early history of the postal system in England it was the law that it should be so done. As far back as 1794 there are cases in the reports where actions were brought against postmasters for not delivering letters wherever they were addressed, and it was decided to be the law of England that they should be so delivered. It was the law in this country during the Confederate Congress. Letter-carriers were always appointed in this country at the discretion of the postmaster to deliver letters without additional charge, until this free-delivery system, as it is called, came into vogue. It should be one of the fundamental principles of a well-regulated postal system that every letter should be delivered to the individual addressed, where it is possible and practicable that it should be done. It would be an improvement which the people would hail with joy, ten times the joy that they will hail the reduction of postage, but it never will be done until the Post-Office is not only self-sustaining but earns a surplus revenue. I can not, with the pressure of time that there is upon the Senate, stop to dwell upon these things; I can merely outline them; I can merely call the attention of Senators to what I believe to be the real desire of the people upon this question, and I will, when I close, propose an amendment to change the existing law with reference to the free delivery of letters.

"But there is another subject to which I desire to allude, a subject in which there is already a great interest, a growing interest, an interest that will grow and make a voice that will have to be heard and heeded in the halls of legislation, and that is the question of the transmission of messages by electricity, by the telegraph. The telegraph to-day is the rich man's mail. The time is coming, and it is hastening rapidly, when the people of this country will demand that it shall be no longer the rich man's mail, but that it shall be brought within the reach and ability of every individual in this land. I can not understand how it is that a Government like ours, that professes to be in advance of the world, that boasts of its progressive spirit and tendencies, that boasts of its invention, that boasts of the utilization of the arts and sciences in its borders, should fall back on the slow railroad and steamboat for the transmission of its messages, and allow

quick transmission to be in the hands of a single corporation substantially in this country.

"I said that the telegraph to-day was the rich man's mail. The transmission of letters and messages is a Government function, it pertains to the Government, and it ought never to have been suffered to go out of the hands of Government. We ought just as much to utilize the telegraph as to utilize the sending of letters by the railway. Formerly letters were carried on foot or on horseback. I remember when the saddle-bags thrown across the horse contained the letters which were sent through the country. Then we adopted the steamboat and then the railroad, and then we insist that we shall have fast trains. Why? that we may get a letter to California in a week and get an answer in a week, and the Government proposes to do it for three cents. The Government can send a letter of twenty words to California and get an answer in a single day at an expense, I verily believe, of not more than 25 cents. Ought not the Government to do it? Can the Government excuse itself for not serving the people with this new means of communicating messages?

"I said that the transmission of messages by electricity was mainly in the hands of a single corporation. I am not continually talking about monopolies, but I do say that this business of carrying letters, of transmitting messages, is a monopoly which belongs to the Government of the United States and not to corporations, and if those gentlemen who are troubled with the power and the increasing power of monopolies, and justly troubled, desire to look about for the greatest monopoly of the world in proportion to its capital, they will find it in this same telegraph company. Its receipts the last year were $17,000,000 and its acknowledged profits were $7,000,000, more than 40 per cent. of its receipts. I say its acknowledged profits; what its real profits were no one knows.

"If the Government, as it ought to have done under the statute of 1866 authorizing it to do so, had taken control of the telegraph system of this country it would have saved last year $7,000,000 to the people of this country; and that is a better saving than the saving which they propose to effect upon postage, because with that saving would have come the added convenience, as the telegraph would have been brought within the reach of the humblest individual. If an individual in common life now receives a telegraphic dispatch he fears that it means death or disaster. If the Government in 1866 had taken the telegraph, it would be a common means of communication between the common people of this country to-day.

"The enormous profits which are lost to the individuals of the country and are put in the pockets of the stockholders of this corporation are nothing to what they are expected to be. The president of the corporation in his last annual report estimates that the receipts of the company in the year 1887 will be between $31,000,000 and $32,000,000, and the profits $16,000,000.

"I insist upon it that there should be no diminution of the revenues of the Post-Office Department until its surplus funds have been used at least to make a fund for the purchase, at an appraised value, of the telegraph lines of the United States. Looking forward five years to 1887, taking the report and estimate of the president of that corporation in the year 1887, it would save $16,000,000 to the people of the United States and afford them vastly increased facilities for corresponding with each other. I have no time to elaborate this proposition to-day. I believe that when the people come to think of these matters they will vastly prefer that the convenience of the present system shall be extended; that new improvements shall be adopted; that the frequency of mails shall be increased; that the speed of mails shall be increased; that free delivery shall be extended almost indefinitely; and that Congress shall take steps before the coming storm to see to it that the control of the telegraph system of this country passes into the hands of the Government."

Mr. Edmunds, of Vermont, offered an amendment proposing to strike out the whole clause of the bill relating to the reduction of letter-postage, on the ground that legislation of a general nature in an appropriation bill was in violation of rule 29, which is as follows:

No amendment which proposes general legislation shall be received to any general appropriation bill; nor shall any amendment not germane or relevant to the subject-matter contained in the bill be received; nor shall any amendment to any item or clause of such bill be received which does not directly relate thereto; and all questions of relevancy of amendments under this rule, when raised, shall be submitted to the Senate and be decided without debate; and any amendment to a general appropriation bill may be laid on the table without prejudice to the bill.

The amendment was rejected by the following vote, which shows the attitude of the Senate on the question of postal reduction:

YEAS—Anthony, Blair, Cameron of Pennsylvania, Cameron of Wisconsin, Davis of Illinois, Edmunds, Hawley, Hoar, Jones of Florida, Lapham, Miller of New York, Morrill, Platt, Rollins, Sherman—15.

NAYS—Barrow, Beck, Brown, Call, Camden, Cockrell, Coke, Conger, Dawes, Frye, Garland, George, Gorman, Groome, Hale, Hampton, Harris, Harrison, Hill, Ingalls, Johnston, Jonas, Kellogg, Lamar, McDill, McMillan, Mahone, Maxey, Morgan, Pendleton, Plumb, Pugh, Sewell, Slater, Vance, Van Wyck, Vest, Voorhees, Walker, Williams—40.

ABSENT—Aldrich, Allison, Bayard, Butler, Chilcott, Davis of West Virginia, Fair, Farley, Ferry, Grover, Jackson, Jones of Nevada, Logan, McPherson, Miller of California, Mitchell, Ransom, Saulsbury, Saunders, Sawyer, Windom—21.

January 20th, the bill passed the Senate with several important amendments. One of them changed the date of the proposed reduction in the rate of letter-postage; another added an appropriation for fast mails; another provided

an appropriation for steamboat mail service; and another struck out the following provision of the original bill:

Provided, That for the better accomplishment of the objects of the acts authorizing the construction of the railroads hereinafter referred to, and the better to secure to the Government the use and benefit of the same, the acts authorizing the building and construction of those railroads which have received, in addition to land grants, Government aid by the loan or guarantee of bonds by the United States, and all other acts, parts of acts, and provisions having relation thereto, are hereby so altered, amended, and modified that hereafter the compensation paid or allowed for the carrying and transportation of the United States mails by such railroad companies, or their assigns or successors, shall be fixed by the Postmaster-General, at a rate not exceeding that fixed by him or allowed by law to other railway companies of the same class to which the United States have furnished aid by grant of land, right of way, or otherwise.

The House non-concurred in these amendments, and three conference committees in succession discussed the points of difference, and failed to come to a complete agreement. The last committee fixed Oct. 1, 1883, as the date for the reduction of the rate of letter-postage; and finally, on March 2d, the House receded from its non-concurrence in the striking out of the provision in regard to the land-grant railroads and the insertion of an appropriation for fast mails. The next day the measure as amended was approved by the President.

Internal Revenue and Tariff Legislation.—The Tariff Commission appointed under the act of Congress, approved May 15, 1882, made a report to the House of Representatives Dec. 4, 1882, and the report submitted became the basis of the legislation for tariff revision that took up so great a part of the session. The report, after a general view of the tariff problem, took up each class of articles and gave an account of the condition of trade in them and the nature of the action to be taken with respect to duties levied on them, and the data on which such action was based. It closed with a schedule of proposed duties and a statement of proposed amendments to the revised statutes. The reduction which the committee recommended averaged not less than 20 per cent. In some cases it was slight; in others no reduction was attempted at all; and in many instances there was a scaling down of from 40 to 50 per cent. On the report of the commission as a basis, the House Committee of Ways and Means reported a tariff bill Jan. 16, 1883, which was taken up and elaborated with great care; but in the mean while, a bill to reduce internal revenue taxation which had passed the House and had been referred to the Finance Committee of the Senate, was reported back to that body Jan. 4, 1883, with amendments virtually revising the whole tariff system and the machinery for carrying it out, which amendments were based also upon the report of the tariff commission. The Senate entered upon the discussion of this measure with zeal, and debated it item by item at great length. It was passed Feb. 20, 1883, by the following vote:

YEAS—Aldrich, Allison, Anthony, Barrow, Bayard, Blair, Brown, Camden, Cameron of Wisconsin, Conger, Davis of Illinois, Davis of West Virginia, Dawes, Edmunds, Frye, Gorman, Hale, Harrison, Hawley, Hoar, Ingalls, Jackson, Jones of Florida, Jones of Nevada, Kellogg, Logan, McMillan, McPherson, Miller of California, Miller of New York, Morrill, Platt, Plumb, Rollins, Sawyer, Sewell, Sherman, Slater, Tabor, Van Wyck, Windom—42.

NAYS—Beck, Call, Cockrell, Coke, Farley, Garland, George, Hampton, Harris, Maxey, Mitchell, Pendleton, Pugh, Ransom, Vance, Vest, Voorhees, Walker, Williams—19.

ABSENT—Butler, Cameron of Pennsylvania, Fair, Ferry, Groome, Grover, Johnston, Jonas, Lamar, Lapham, McDill, Mahone, Morgan, Saulsbury, Saunders—15.

It was determined by the majority in the House to abandon the tariff bill of that body and act upon the internal-revenue bill as amended by the Senate, and in order to facilitate the consideration of the measure in the House, the Committee on Rules reported Feb. 24, 1883, the following amendment to the rules of that body:

During the remainder of this session it shall be in order at any time to move to suspend the rules, which motion shall be decided by a majority vote, to take from the Speaker's table House bill No. 5538, with the Senate amendment thereto, entitled "A bill to reduce internal-revenue taxation," and to declare a disagreement with the Senate amendment to the same, and to ask for a committee of conference thereon, to be composed of five members on the part of the House. If such motion shall fail, the bill shall remain upon the Speaker's table unaffected by the decision of the House upon said motion.

After a brief but bitter opposition, this special rule was adopted Feb. 27th. As a question of privilege, Mr. Hammond, of Georgia, then submitted the following resolution:

Resolved, That the substitute of the Senate (H. R. 5538) entitled "An act to reduce internal-revenue taxation, and for other purposes," under the form of an amendment to the bill of the House (H. R. 5538) entitled "An act to reduce internal-revenue taxation," containing a general revision and repeal of laws imposing both import duties and internal taxes, is in conflict with the true intent and purposes of that clause of the Constitution which requires "all bills for raising revenue shall originate in the House of Representatives"; and that therefore said bill so amended do lie upon the table.

And be it further resolved, That the Clerk of the House be and is hereby directed to notify the Senate of the passage of the foregoing resolution.

On motion of Mr. Haskell, of Kansas, the following preamble and resolution were substituted and adopted:

Whereas, House bill 5538, entitled "An act to reduce internal revenue taxation, and for other purposes," under the form of an amendment in the Senate, to title 33 of the Revised Statutes, which provides for duties on imports, has been so modified and changed by the introduction of new provisions, containing among other things a general revision of the statutes referred to so as both to increase and reduce duties on imports, and in many instances to repeal and in others to amend the laws imposing import duties; and

Whereas in the opinion of this House it is believed that such changes and alterations are in conflict with the true intent and purpose of the Constitution, which requires that all bills for raising revenue shall originate in the House of Representatives: therefore,

Resolved, That if this bill shall be referred to a committee of conference, it shall be the duty of the conferees on the part of the House on said committee to consider fully the constitutional objections to said bill as amended by the Senate herein referred to, and to bring the same, together with the opinion of the House in regard thereto, before said committee of conference, and if necessary, in their opinion, after having conferred with the Senate conferees, said conferees on said committee may make report to the House in regard to the objections to said bill herein referred to.

The House non-concurred in the Senate amendments to the original bill, and a conference committee was appointed Feb. 27th. Two of the conferees on the part of the Senate, Messrs. Bayard and Beck, asked, March 1st, to be excused from service on learning the nature of the conditions imposed by the House upon its representatives in the conference committee, holding that such instructions were a breach of senatorial privilege. March 2d the report of the conference committee was submitted in the Senate. It was sharply criticised by leading Democrats, but was finally concurred in by the following vote:

YEAS—Aldrich, Allison, Anthony, Blair, Cameron of Wisconsin, Conger, Davis of Illinois, Dawes, Edmunds, Frye, Harrison, Hawley, Hill, Hoar, Ingalls, Jones of Nevada, Kellogg, Lapham, Logan, McDill, McMillan, McPherson, Mahone, Miller of New York, Morrill, Platt, Plumb, Rollins, Sawyer, Sewell, Sherman, Windom—32.

NAYS—Barrow, Bayard, Brown, Butler, Call, Cameron of Pennsylvania, Cockrell, Coke, Fair, Garland, George, Gorman, Groome, Harris, Jackson, Jonas, Jones of Florida, Lamar, Maxey, Morgan, Pendleton, Pugh, Ransom, Saulsbury, Slater, Vance, Van Wyck, Vest, Voorhees, Walker, Williams—31.

ABSENT—Beck, Camden, Davis of West Virginia, Farley, Ferry, Grover, Hale, Hampton, Johnston, Miller of California, Mitchell, Saunders, Tabor—13.

March 3d the report of the conference committee was taken up in the House, and concurred in by the following vote:

YEAS—Aldrich, Anderson, Barr, Belford, Beltzhoover, Bingham, Bisbee, Bliss, Bowman, Brewer, Briggs, Browne, Buck, Julius C. Burrows, Joseph H. Burrows, Butterworth, Calkins, Camp, Candler, Cannon, Carpenter, Caswell, Chace, Crapo, Crowley, Cullen, George R. Davis, Deering, De Motte, Dezendorf, Dingley, Doxey, Dunnell, Dwight, Ermentrout, Charles B. Farwell, Sewell S. Farwell, Fisher, Fulkerson, George, Godshalk, Grout, Guenther, Hall, John Hammond, Hardenbergh, Hardy, Harmer, Benjamin W. Harris, Henry S. Harris, Haskell, Hazelton, Heilman, Henderson, Hepburn, Hill, Hiscock, Hitt, Horr, Houk, Hubbs, Humphrey, Jacobs, Jadwin, Phineas Jones, Jorgensen, Joyce, Kasson, Kelley, Ketcham, Klotz, Lacey, Ladd, Lewis, Lindsey, Lord, Lynch, Mackey, Marsh, Mason, McCoid, McCook, James H. McLean, Miles, Moore, Morey, Morse, Mutchler, Neal, Norcross, O'Neill, Pacheco, Page, Parker, Payson, Peele, Peirce, Pettibone, Pound, Randall, Ranney, Ray, Reed, Rich, D. P. Richardson, Ritchie, Robeson, George D. Robinson, Ross, Ryan, Scoville, Scranton, Sessinghaus, Shallenberger, Shelley, Sherwin, Shultz, Skinner, Smalls, A. Herr Smith, Dietrich C. Smith, J. Hyatt Smith, Spaulding, Speer, Spooner, Steele, Stone, Strait, Thomas, Amos Townsend, Tyler, Updegraff, Valentine, Van Aernam, Van Horn, Van Voorhis, Wadsworth, Wait, Walker, Ward, Washburn, Watson, Webber, West, White, Charles G. Williams, Willits, Wilson, George D. Wise, Morgan R. Wise, Walter A. Wood, Young—152.

NAYS—Aiken, Armfield, Atherton, Atkins, Barbour, Bayne, Beach, Belmont, Berry, Blackburn, Blanchard, Bland, Blount, Bragg, Brumm, Buchanan, Buckner, Cabell, Caldwell, Campbell, Carlisle, Cassidy, Chapman, Clark, Clements, Cobb, Colerick, Converse, John C. Cook, Philip Cook, Covington, Samuel S. Cox, William R. Cox, Culberson, Davidson, Lowndes H. Davis, Dawes, Deuster, Dibrell, Dowd, Dugro, Dunn, Ellis, Errett, Evins, Flower, Ford, Forney, Garrison, Geddes, Gibson, Gunter, N. J. Hammond, Haseltine, Hatch, Herbert, Abram S. Hewitt, Hoblitzell, Hoge, Holman, House, Hubbell, Hutchins, George W. Jones, James K. Jones, Kenna, King, Knott, Latham, Leedom, Le Fevre, Manning, Martin, Matson, McKenzie, McKinley, Robert M. McLane, McMillin, Miller, Mills, Money, Morrison, Moulton, Muldrow, Murch, Reese, John B. Rice, Theron M. Rice, J. S. Richardson, Robertson, James S. Robinson, William E. Robinson, Rosecrans, Scales, Simonton, Otho R. Singleton, Sparks, Springer, Stockslager, Talbott, Ezra B. Taylor, Joseph D. Taylor, P. B. Thompson, R. W. Townshend, Tucker, Henry G. Turner, Oscar Turner, Upson, Urner, Vance, Warner, Wellborn, Wheeler, Whitthorne, Thomas Williams, Willis—116.

NOT VOTING—Black, Clardy, Cornell, Cravens, Curtain, Darrall, Herndon, G. W. Hewitt, Hooker, McClure, Mosgrove, Nolan, Oates, Paul, Phelps, Phister, Prescott, Reagan, William W. Rice, Russell, James W. Singleton, William G. Thompson, Benjamin Wood—23.

The measure was approved by the President the same day and became a law. It is as follows:

An act to reduce internal revenue taxation and for other purposes:

Be it enacted by the Senate and House of Representatives of the United States in Congress assembled:

That the taxes herein specified, imposed by the laws now in force, be and the same are hereby repealed, as hereinafter provided, namely: On capital and deposits of banks, bankers, and national banking associations, except such taxes as are now due and payable; and on and after the first day of July, eighteen hundred and eighty-three, the stamp tax on bank checks, drafts, orders, and vouchers, and the tax on matches, perfumery, medicinal preparations, and other articles imposed by Schedule A following section thirty-four hundred and thirty-seven of the Revised Statutes: Provided, That no drawback shall be allowed upon articles embraced in said schedule that shall be exported on and after the first day of July, eighteen hundred and eighty-three: Provided, further, That on and after May fifteenth, eighteen hundred and eighty-three, matches may be removed by manufacturers thereof from the place of manufacture to warehouses within the United States without attaching thereto the stamps required by law, under such regulations as may be prescribed by the Commissioner of Internal Revenue.

SEC. 2. That on and after the first day of May, eighteen hundred and eighty-three, dealers in leaf-tobacco shall annually pay twelve dollars; dealers in manufactured tobacco shall pay two dollars and forty cents; all manufacturers of tobacco shall pay six dollars; manufacturers of cigars shall pay six dollars; peddlers of tobacco, snuff and cigars shall pay special taxes as follows: Peddlers of the first class, as now defined by law, shall pay thirty dollars; peddlers of the second class shall pay fifteen dollars; peddlers of the third class shall pay seven dollars and twenty cents; and peddlers of the fourth class shall pay

three dollars and sixty cents. Retail dealers in leaf-tobacco shall pay two hundred and fifty dollars, and thirty cents for each dollar on the amount of their monthly sales in excess of the rate of five hundred dollars per annum: Provided, That farmers and producers of tobacco may sell at the place of production tobacco of their own growth and raising at retail directly to consumers, to an amount not exceeding one hundred dollars annually.

SEC. 3. That hereafter the special tax of a dealer in manufactured tobacco shall not be required from any farmer, planter, or lumberman who furnishes such tobacco only as rations or supplies to his laborers or employés in the same manner as other supplies are furnished by him to them: Provided, That the aggregate of the supplies of tobacco so by him furnished shall not exceed in quantity one hundred pounds in any one special tax year; that is, from the first day of May in any year until the thirtieth day of April in the next year: And provided further, That such farmer, planter, or lumberman shall not be, at the time he is furnishing such supplies, engaged in the general business of selling dry goods, groceries, or other similar supplies in the manner of a merchant or storekeeper to others than his own employés or laborers.

SEC. 4. That on and after May first, eighteen hundred and eighty-three, the internal taxes on snuff, smoking and manufactured tobacco, shall be eight cents per pound; and on cigars which shall be manufactured and sold or removed for consumption or sale on and after the first day of May, eighteen hundred and eighty-three, there shall be assessed and collected the following taxes, to be paid by the manufacturer thereof: On cigars of all descriptions, made of tobacco or any substitute therefor, three dollars per thousand; on cigarettes weighing not more than three pounds per thousand, fifty cents per thousand; on cigarettes weighing more than three pounds per thousand, three dollars per thousand: Provided, That on all original and unbroken factory packages of smoking and manufactured tobacco and snuff, cigars, cheroots, and cigarettes held by manufacturers or dealers at the time such reduction shall go into effect, upon which the tax has been paid, there shall be allowed a drawback or rebate of the full amount of the reduction, but the same shall not apply in any case where the claim has not been presented within sixty days following the date of the reduction; and such rebate to manufacturers may be paid in stamps at the reduced rate; and no claim shall be allowed or drawback paid for a less amount than ten dollars. It shall be the duty of the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, to adopt such rules and regulations and to prescribe and furnish such blanks and forms as may be necessary to carry this section into effect.

SEC. 5. That from and after the passage of this act every manufacturer of tobacco or snuff shall, in addition to all other requirements of law, print on each package, or securely affix by pasting on each package containing tobacco or snuff manufactured by or for him, a label on which shall be printed the number of the manufactory, the district and State in which it is situated, and these words:

NOTICE.

The manufacturer of this tobacco has complied with all requirements of law. Every person is cautioned, under penalties of law, not to use this package for tobacco again.

SEC. 6. That on and after the first day of July, eighteen hundred and eighty-three, the following sections shall constitute and be a substitute for title thirty-three of the Revised Statutes of the United States.

TITLE XXXIII.

DUTIES UPON IMPORTS.

SEC. 2491. All persons are prohibited from importing into the United States from any foreign country, any obscene book, pamphlet, paper, writing, advertisement, circular, print, picture, drawing, or other representation, figure, or image on or of paper or other material, or any cast, instrument, or other article of an immoral nature, or any drug or medicine, or any article whatever, for the prevention of conception, or for causing unlawful abortion. No invoice or package whatever, or any part of one, in which any such articles are contained shall be admitted to entry; and all invoices and packages whereof any such articles shall compose a part are liable to be proceeded against, seized, and forfeited by due course of law. All such prohibited articles in the course of importation shall be detained by the officer of customs, and proceedings taken against the same as prescribed in the following section: Provided, That the drugs hereinbefore mentioned, when imported in bulk and not put up for any of the purposes hereinbefore specified, are excepted from the operation of this section.

SEC. 2492. Whoever, being an officer, agent, or employé of the Government of the United States, shall knowingly aid or abet any person engaged in any violation of any of the provisions of law prohibiting importing, advertising, dealing in, exhibiting, or sending or receiving by mail obscene or indecent publications or representations, or means for preventing conception or procuring abortion, or other articles of indecent or immoral use or tendency, shall be deemed guilty of a misdemeanor, and shall for every offense be punishable by a fine of not more than five thousand dollars or by imprisonment at hard labor for not more than ten years, or both.

SEC. 2493. Any judge of any district or circuit court of the United States, within the proper district, before whom complaint in writing of any violation of the preceding sections is made, to the satisfaction of such judge, and founded on knowledge or belief, and, if upon belief, setting forth the grounds of such belief, and supported by oath or affirmation of the complainant, may issue, conformably to the Constitution, a warrant directed to the marshal, or any deputy-marshal, in the proper district, directing him to search for, seize, and take possession of any such article or thing hereinbefore mentioned, and to make due and immediate return thereof, to the end that the same may be condemned and destroyed by proceedings which shall be conducted in the same manner as other proceedings in the case of municipal seizure, and with the same right of appeal or writ of error.

SEC. 2494. The importation of neat cattle and the hides of neat cattle from any foreign country into the United States is prohibited: Provided, That the operation of this section shall be suspended as to any foreign country or countries, or any parts of such country or countries, whenever the Secretary of the Treasury shall officially determine, and give public notice thereof, that such importation will not tend to the introduction or spread of contagious or infectious diseases among the cattle of the United States; and the Secretary of the Treasury is hereby authorized and empowered, and it shall be his duty, to make all necessary orders and regulations to carry this law into effect, or to suspend the same as therein provided, and to send copies thereof to the proper officers in the United States, and to such officers or agents of the United States in foreign countries as he shall judge necessary.

SEC. 2495. Any person convicted of a willful violation of any of the provisions of the preceding section shall be fined not exceeding five hundred dollars, or imprisoned not exceeding one year, or both, in the discretion of the court.

SEC. 2496. No watches, watch-cases, watch-movements, or parts of watch-movements, or any other articles of foreign manufacture, which shall copy or simulate the name or trade-mark of any domestic manufacturer, shall be admitted to entry at the custom-houses of the United States, unless such domestic manufacturer is the importer of the same. And in order to aid the officers of the customs in enforcing this prohibition, any domestic manufacturer who has adopted trade-marks may require his name and residence and a description of his trade-marks to be re-

corded in books which shall be kept for that purpose in the Department of the Treasury, under such regulations as the Secretary of the Treasury shall prescribe, and may furnish to the department fac-similes of such trade-marks; and thereupon the Secretary of the Treasury shall cause one or more copies of the same to be transmitted to each collector or other proper officer of the customs.

SEC. 2497. No goods, wares, or merchandise, unless in cases provided for by treaty, shall be imported into the United States from any foreign port or place, except in vessels of the United States, or in such foreign vessels as truly and wholly belong to the citizens or subjects of that country of which the goods are the growth, production, or manufacture; or from which such goods, wares, or merchandise can only be, or most usually are, first shipped for transportation. All goods, wares, or merchandise imported contrary to this section, and the vessel wherein the same shall be imported, together with her cargo, tackle, apparel, and furniture, shall be forfeited to the United States; and such goods, wares, or merchandise, ship, or vessel, and cargo shall be liable to be seized, prosecuted, and condemned, in like manner, and under the same regulations, restrictions, and provisions, as have been heretofore established for the recovery, collection, distribution, and remission of forfeitures to the United States by the several revenue laws.

SEC. 2498. The preceding section shall not apply to vessels, or goods, wares, or merchandise, imported in vessels of a foreign nation which does not maintain a similar regulation against vessels of the United States.

SEC. 2499. There shall be levied, collected, and paid on each and every non-enumerated article which bears a similitude, either in material, quality, texture, or the use to which it may be applied, to any article enumerated in this title as chargeable with duty, the same rate of duty which is levied and charged on the enumerated article which it most resembles in any of the particulars before mentioned; and if any non-enumerated article equally resembles two or more enumerated articles on which different rates are chargeable, there shall be levied, collected, and paid on such non-enumerated article the same rate of duty as is chargeable on the article which it resembles paying the highest duty; and on all articles manufactured from two or more materials the duty shall be assessed at the highest rates at which the component material of chief value may be chargeable. If two or more rates of duty should be applicable to any imported article, it shall be classified for duty under the highest of such rates: Provided, That non-enumerated articles similar in material and quality and texture, and the use to which they may be applied, to articles on the free list, and in the manufacture of which no dutiable materials are used, shall be free.

SEC. 2500. Upon the reimportation of articles once exported of the growth, product, or manufacture of the United States, upon which no internal tax has been assessed or paid, or upon which such tax has been paid and refunded by allowance or drawback, there shall be levied, collected, and paid a duty equal to the tax imposed by the internal-revenue laws upon such articles.

SEC. 2501. A discriminating duty of ten per centum ad valorem, in addition to the duties imposed by law, shall be levied, collected, and paid on all goods, wares, and merchandise which shall be imported on vessels not of the United States; but this discriminating duty shall not apply to goods, wares, and merchandise which shall be imported in vessels not of the United States, entitled, by treaty or any act of Congress, to be entered in the ports of the United States on payment of the same duties as shall then be paid on goods, wares, and merchandise imported in vessels of the United States.

SEC. 2502. There shall be levied, collected, and paid upon all articles imported from foreign countries, and mentioned in the schedules herein contained, the rates of duty which are, by the schedules, respectively prescribed, namely:

SCHEDULE A.—CHEMICAL PRODUCTS.

Glue, twenty per centum ad valorem.

Beeswax, twenty per centum ad valorem.

Gelatine and all similar preparations, thirty per centum ad valorem.

Glycerine, crude, brown or yellow, of the specific gravity of one and twenty-five hundredths or less at a temperature of sixty degrees Fahrenheit, not purified by refining or distilling, two cents per pound.

Glycerine, refined, five cents per pound.

Fish-glue or isinglass, twenty-five per centum ad valorem.

Phosphorus, ten cents per pound.

Soap, hard and soft, all which are not otherwise specially enumerated or provided for in this act, and castile soap, twenty per centum ad valorem.

Fancy, perfumed, and all descriptions of toilet soap, fifteen cents per pound.

Sponges, twenty per centum ad valorem.

Sumac, ground, three tenths of one cent per pound, and sumac extract, twenty per centum ad valorem.

Acid, acetic, acetous, or pyroligneous acid, not exceeding the specific gravity of one and forty-seven one thousandths, two cents per pound; exceeding the specific gravity of one and forty-seven one thousandths, ten cents per pound.

Acid, citric, ten cents per pound.

Acid, tartaric, ten cents per pound.

Camphor, refined, five cents per pound.

Castor beans, or seeds, fifty cents per bushel of fifty pounds.

Castor-oil, eighty cents per gallon.

Cream of tartar, six cents per pound.

Dextrine, burnt starch, gum substitute, or British gum, one cent per pound.

Extract of hemlock, and other bark used for tanning, not otherwise enumerated or provided for in this act, twenty per centum ad valorem.

Glucose, or grape-sugar, twenty per centum ad valorem.

Indigo, extracts of, and carminod, ten per centum ad valorem.

Iodine, resublimed, forty cents per pound.

Licorice, paste or roll, seven and one half cents per pound; licorice-juice, three cents per pound.

Oil of bay-leaves, essential, or bay rum essence or oil, two dollars and fifty cents per pound.

Oil, croton, fifty cents per pound.

Oil, flaxseed or linseed, and cotton-seed oil, twenty-five cents per gallon; seven and one half pounds weight to be estimated as a gallon.

Hemp-seed oil and rape-seed oil, ten cents per gallon.

Soda and potassa, tartrate, or rochelle salt, three cents per pound.

Strychnia, or strychnine, and all salts thereof, fifty cents per ounce.

Tartars, partly refined, including lees crystals, four cents per pound.

Alumina, alum, patent alum, alum substitute, sulphate of alumina, and aluminous cake, and alum in crystals or ground, sixty cents per hundred pounds.

Ammonia, anhydrous, liquefied by pressure, twenty per centum ad valorem.

Ammonia aqua, or water of ammonia, twenty per centum ad valorem.

Ammonia, muriate of, or sal-ammoniac, ten per centum ad valorem.

Ammonia, carbonate of, twenty per centum ad valorem.

Ammonia, sulphate of, twenty per centum ad valorem.

All imitations of natural mineral waters and all artificial mineral waters, thirty per centum ad valorem.

Asbestus, manufactured, twenty-five per centum ad valorem.

Baryta, sulphate of, or barytes, unmanufactured, ten per centum ad valorem.

Baryta, sulphate of, or barytes, manufactured, one fourth of one cent per pound.

Refined borax, five cents per pound.

Pure boracic acid, five cents per pound; commercial boracic acid, four cents per pound; borate of lime, three cents per pound; crude borax, three cents per pound.

Cement, Roman, Portland, and all others, twenty per centum ad valorem.

Whiting and Paris white, dry, one half cent per pound; ground in oil, or putty, one cent per pound.

Prepared chalk, precipitated chalk, French chalk, red chalk, and all other chalk preparations which are not specially enumerated or provided for in this act, twenty per centum ad valorem.

Chromic acid, fifteen per centum ad valorem.

Chromate of potash, three cents per pound.

Bichromate of potash, three cents per pound.

Cobalt, oxide of, twenty per centum ad valorem.

Copper, sulphate of, or blue vitriol, three cents per pound.

Iron, sulphate of, or copperas, three tenths of one cent per pound.

Acetate of lead, brown, four cents per pound.

Acetate of lead, white, six cents per pound.

White lead, when dry or in pulp, three cents per pound.

When ground or mixed in oil, three cents per pound.

Litharge, three cents per pound.

Orange mineral, and red lead, three cents per pound.

Nitrate of lead, three cents per pound.

Magnesia, medicinal, carbonate of, five cents per pound.

Magnesia, calcined, ten cents per pound.

Magnesia, sulphate of, or Epsom salts, one half of one cent per pound.

Potash:

Crude, carbonate of, or fused, and caustic potash, twenty per centum ad valorem.

Chlorate of, three cents per pound.

Hydriodate, iodide and iodate of, fifty cents per pound.

Prussiate of, red, ten cents per pound.

Prussiate of, yellow, five cents per pound.

Nitrate of, or saltpeter, crude, one cent per pound.

Nitrate of, or refined saltpeter, one and one half cent per pound.

Sulphate of, twenty per centum ad valorem.

Soda:

Soda-ash, one quarter of one cent per pound.

Soda sal, or soda crystals, one quarter of one cent per pound.

Bicarbonate of, or super-carbonate of, and saleratus, calcined or pearl ash, one and one half cents per pound.

Hydrate, or caustic, one cent per pound.

Sulphate, known as salt cake, crude or refined, or niter cake, crude or refined, and Glauber's salt, twenty per centum ad valorem.

Soda, silicate of, or other alkaline silicate, one half of one cent per pound.

Sulphur:

Refined, in rolls, ten dollars per ton.

Sublimed, or flowers of, twenty dollars per ton.

Wood-tar, ten per centum ad valorem.

Coal-tar, crude, ten per centum ad valorem.

Coal-tar, products of, such as naphtha, benzine, benzole, dead oil, and pitch, twenty per centum ad valorem.

All coal-tar colors or dyes, by whatever name known and not specially enumerated or provided for in this act, thirty-five per centum ad valorem.

All preparations of coal-tar, not colors or dye, not specially enumerated or provided for in this act, twenty per centum ad valorem.

Logwood and other dyewoods, extracts and decoctions of, ten per centum ad valorem.

Ultramarine, five cents per pound.

Turpentine, spirits of, twenty cents per gallon.

Colors and paints, including lakes, whether dry or mixed, or ground with water or oil, and not specially enumerated or provided for in this act, twenty-five per centum ad valorem.

The pigment known as bone-black, and ivory-drop black, and bone-char, twenty-five per centum ad valorem.

Ochre and ochrey earths, umber and umber earths, and sienna and sienna earths, when dry, one half of one cent per pound; when ground in oil, one and one half cent per pound.

Zinc, oxide of, when dry, one and one fourth cent per pound.

Zinc, oxide of, when ground in oil, one and three fourths cent per pound.

All preparations known as essential oils, expressed oils, distilled oils, rendered oils, alkalies, alkaloids, and all combinations of any of the foregoing, and all chemical compounds and salts, by whatever name known, and not specially enumerated or provided for in this act, twenty-five per centum ad valorem.

Preparations: all medicinal preparations known as cerates, conserves, decoctions, emulsions, extracts, solid or fluid; infusions, juices, liniments, lozenges, mixtures, mucilages, ointments, oleo-resins, pills, plasters, powders, resins, suppositories, sirups, vinegars, and waters, of any of which alcohol is not a component part, and which are not specially enumerated or provided for in this act, twenty-five per centum ad valorem.

All barks, beans, berries, balsams, buds, bulbs, and bulbous roots, and excrescences, such as nutgalls, fruits, flowers, dried fibers, grains, gums, and gum-resins, herbs, leaves, lichens, mosses, nuts, roots and stems, spices, vegetables, seeds (aromatic, not garden seeds), and seeds of morbid growth, weeds, woods used expressly for dyeing, and dried insects, any of the foregoing of which are not edible, but which have been advanced in value or condition by refining or grinding, or by other process of manufacture, and not specially enumerated or provided for in this act, ten per centum ad valorem.

All non-dutiable crude minerals, but which have been advanced in value or condition by refining or grinding, or by other process of manufacture, not specially enumerated or provided for in this act, ten per centum ad valorem.

All ground or powdered spices not specially enumerated or provided for in this act, five cents per pound.

All earths or clays, unwrought or unmanufactured, not specially enumerated or provided for in this act, one dollar and fifty cents per ton.

All earths or clays, wrought or manufactured, not specially enumerated or provided for in this act, three dollars per ton; china clay, or kaolin, three dollars per ton.

Proprietary preparations, to wit: All cosmetics, pills, powders, troches, or lozenges, sirups, cordials, bitters, anodynes, tonics, plasters, liniments, salves, ointments, pastes, drops, waters, essences, spirits, oils or preparations or compositions recommended to the public as proprietary articles, or prepared according to some private formula, as remedies or specifics for any disease or diseases, or affections whatever, affecting the human or animal body, including all toilet preparations whatever, used as applications to the hair, mouth, teeth, or skin, not specially enumerated or provided for in this act, fifty per centum ad valorem.

Alcoholic preparations:

Alcoholic perfumery, including cologne-water, two dollars per gallon and fifty per centum ad valorem.

Distilled spirits, containing fifty per centum of anhydrous alcohol, one dollar per gallon.

Alcohol, containing ninety-four per centum anhydrous alcohol, two dollars per gallon.

Alcoholic compounds, not otherwise specially enumerated or provided for, two dollars per gallon for the alcohol contained and twenty-five per centum ad valorem.

Chloroform, fifty cents per pound.

Collodion, and all compounds of pyroxyline, by whatever name known, fifty cents per pound; rolled or in sheets, but not made up into articles, sixty cents per pound, and when in finished or partly finished articles, sixty cents per pound and twenty-five per centum ad valorem.

Ether, sulphuric, fifty cents per pound.

Hoffman's anodyne, thirty cents per pound.

Iodoform, two dollars per pound.

Acid, tannic and tannin, one dollar per pound.

Ether, nitrous, spirits of, thirty cents per pound.

Santonine, three dollars per pound.

Amylic alcohol, or fusel-oil, ten per centum ad valorem.

Oil of Cognac, or œnanthic ether, four dollars per ounce.

Fruit ethers, oils, or essences, two dollars and fifty cents per pound.

Oil or essence of rum, fifty cents per ounce.

Ethers of all kinds, not specially enumerated or provided for in this act, one dollar per pound.

Coloring for brandy, fifty per centum ad valorem.

Preparations: All medicinal preparations known as essences, ethers, extracts, mixtures, spirits, tinctures, and medicated wines, of which alcohol is a component part, not specially enumerated or provided for in this act, fifty cents per pound.

Varnishes of all kinds, forty per centum ad valorem; and on spirit varnishes, one dollar and thirty-two cents additional per gallon.

Opium, crude, containing nine per cent. and over of morphia, one dollar per pound. The importation of opium containing less than nine per cent. morphia is hereby prohibited.

Opium, prepared for smoking, and all other preparations of opium not specially enumerated or provided for in this act, ten dollars per pound; but opium prepared for smoking, and other preparations of opium deposited in bonded warehouses shall not be removed therefrom for exportation without payment of duties, and such duties shall not be refunded.

Opium, aqueous extract of, for medicinal uses, and tincture of, as laudanum, and all other liquid preparations of opium, not specially enumerated or provided for in this act, forty per centum ad valorem.

Morphia or morphine, and all salts thereof, one dollar per ounce.

SCHEDULE B.—EARTHENWARE AND GLASSWARE.

Brown earthenware, common stoneware, gas-retorts, and stoneware not ornamented, twenty-five per centum ad valorem.

China, porcelain, parian, and bisque, earthen, stone, and crockery ware, including plaques, ornaments, charms, vases, and statuettes, painted, printed, or gilded, or otherwise decorated or ornamented in any manner, sixty per centum ad valorem.

China, porcelain, parian, and bisque ware, plain white, and not ornamented or decorated in any manner, fifty-five per centum ad valorem.

All other earthen, stone, and crockery ware, white, glazed, or edged, composed of earthy or mineral substances, not specially enumerated or provided for in this act, fifty-five per centum ad valorem.

Stoneware, above the capacity of ten gallons, twenty per centum ad valorem.

Encaustic tiles, thirty-five per centum ad valorem.

Brick, fire-brick, and roofing and paving tile, not specially enumerated or provided for in this act, twenty per centum ad valorem.

Slates, slate-pencils, slate chimney-pieces, mantels, slabs for tables, and all other manufactures of slate, thirty per centum ad valorem.

Roofing-slates, twenty-five per centum ad valorem.

Green and colored glass bottles, vials, demijohns, and carboys (covered or uncovered), pickle or preserve jars, and other plain, molded, or pressed green and colored bottle glass, not cut, engraved, or painted, and not specially enumerated or provided for in this act, one cent per pound; if filled, and not otherwise in this act provided for, said articles shall pay thirty per centum ad valorem in addition to the duty on the contents.

Flint and lime glass bottles and vials, and other plain, molded, or pressed flint or lime glassware, not specially enumerated or provided for in this act, forty per centum ad valorem; if filled, and not otherwise in this act provided for, said articles shall pay, exclusive of contents, forty per centum ad valorem in addition to the duty on the contents.

Articles of glass, cut, engraved, painted, colored, printed, stained, silvered, or gilded, not including plate-glass, or looking-glass plates, forty-five per centum ad valorem.

All glass bottles and decanters, and other like vessels of glass, shall, if filled, pay the same rates of duty, in addition to any duty chargeable on the contents, as if not filled, except as in this act otherwise specially provided for.

Cylinder and crown glass, polished, not exceeding ten by fifteen inches square, two and one half cents per square foot; above that, and not exceeding sixteen by twenty-four inches square, four cents per square foot; above that, and not exceeding twenty-four by thirty inches square, six cents per square foot; above that, and not exceeding twenty-four by sixty inches square, twenty cents per square foot; all above that, forty cents per square foot.

Unpolished cylinder, crown, and common window-glass, not exceeding ten by fifteen inches square, one and three eighths cents per pound; above that, and not exceeding sixteen by twenty-four inches square, one and seven eighths cents per pound; above that, and not exceeding twenty-four by thirty inches square, two and three eighths cents per pound; all above that, two and seven eighths cents per pound: *Provided*, That unpolished cylinder, crown, and common window-glass, imported in boxes containing fifty square feet, as nearly as sizes will permit, now known and commercially designated as fifty feet of glass, single thick and weighing not to exceed fifty-five pounds of glass per box, shall be entered and computed as fifty pounds of glass only; and that said kinds of glass imported in boxes containing, as nearly as sizes will permit, fifty feet of glass, now known and commercially designated as fifty feet of glass, double thick and not exceeding ninety pounds in weight, shall be entered and computed as eighty pounds of glass only; but in all other cases the duty shall be computed according to the actual weight of glass.

Fluted, rolled, or rough plate-glass, not including crown, cylinder, or common window-glass, not exceeding ten by fifteen inches square, seventy-five cents per one hundred square feet; above that, and not exceeding sixteen by twenty-four inches square, one cent per square foot; above that, and not exceeding twenty-four by thirty inches square, one cent and a half per square foot; all above that, two cents per square foot. And all fluted, rolled, or rough plate-glass, weighing over one hundred pounds per one hundred square feet, shall pay an additional duty on the excess at the same rates herein imposed.

Cast polished plate-glass, unsilvered, not exceeding ten by fifteen inches square, three cents per square foot; above that, and not exceeding sixteen by twenty-four inches square, five cents per square foot; above that, and not exceeding twenty-four by thirty inches square, eight cents per square foot; above that, and not exceeding twenty-four by sixty inches square, twenty-five cents per square foot; all above that, fifty cents per square foot.

Cast polished plate-glass, silvered, or looking-glass plates, not exceeding ten by fifteen inches square, four cents per square foot; above that, and not exceeding sixteen by twenty-four inches square, six cents per square foot; above that, and not exceeding twenty-four by thirty inches square, ten cents per square foot; above that, and not exceeding twenty-four by

sixty inches square, thirty-five cents per square foot; all above that, sixty cents per square foot.

But no looking-glass plates or plate-glass, silvered, when framed, shall pay a less rate of duty than that imposed upon similar glass of like description not framed, but shall be liable to pay, in addition thereto, thirty per centum ad valorem upon such frames.

Porcelain and Bohemian glass, chemical glassware, painted glassware, stained glass, and all other manufactures of glass or of which glass shall be the component material of chief value, not specially enumerated or provided for in this act, forty-five per centum ad valorem.

SCHEDULE C.—METALS.

Iron-ores, including manganiferous iron-ore, also the dross or residuum from burnt pyrites, seventy-five cents per ton. Sulphur-ore, as pyrites, or sulphuret of iron in its natural state, containing not more than three and one half per centum of copper, seventy-five cents per ton: Provided, That ore containing more than two per centum of copper shall pay, in addition thereto, two and one half cents per pound for the copper contained therein.

Iron in pigs, iron kentledge, spiegeleisen, wrought and cast scrap-iron, and scrap-steel, three tenths of one cent per pound, but nothing shall be deemed scrap-iron or scrap-steel except waste or refuse iron or steel that has been in actual use and is fit only to be remanufactured.

Iron railway-bars, weighing more than twenty-five pounds to the yard, seven tenths of one cent per pound.

Steel railway-bars and railway-bars made in part of steel, weighing more than twenty-five pounds to the yard, seventeen dollars per ton.

Bar-iron, rolled or hammered, comprising flats not less than one inch wide, nor less than three eighths of one inch thick, eight tenths of one cent per pound; comprising round iron not less than three fourths of one inch in diameter, and square iron not less than three fourths of one inch square, one cent per pound; comprising flats less than one inch wide, or less than three eighths of one inch thick; round iron less than three fourths of one inch and not less than seven sixteenths of one inch in diameter, and square iron less than three fourths of one inch square, one and one tenth of one cent per pound: Provided, That all iron in slabs, blooms, loops, or other forms less finished than iron in bars, and more advanced than pig-iron, except castings, shall be rated as iron in bars, and pay a duty accordingly; and none of the above iron shall pay a less rate of duty than thirty-five per centum ad valorem: Provided further, That all iron bars, blooms, billets, or sizes or shapes of any kind, in the manufacture of which charcoal is used as fuel, shall be subject to a duty of twenty-two dollars per ton.

Iron or steel tee rails, weighing not over twenty-five pounds to the yard, nine tenths of one cent per pound; iron or steel flat rails, punched, eight tenths of one cent per pound.

Round iron, in coils or rods, less than seven sixteenths of one inch in diameter, and bars or shapes of rolled iron not specially enumerated or provided for in this act, one and two tenths of one cent per pound.

Boiler or other plate iron, sheared or unsheared, skelp-iron, sheared or rolled in grooves, one and one fourth cents per pound; sheet-iron, common or black, thinner than one-inch and one half and not thinner than number twenty wire gauge, one and one tenth of one cent per pound; thinner than number twenty wire gauge and not thinner than number twenty-five wire gauge, one and two tenths of one cent per pound; thinner than number twenty-five wire gauge and not thinner than number twenty-nine wire gauge, one and five tenths of one cent per pound; thinner than number twenty-nine wire gauge, and all iron commercially known as common or black taggers iron, whether put up in boxes or bundles or not, thirty per centum ad valorem: And provided, That on all such iron and steel sheets or plates aforesaid, excepting on what are known commercially as tin-plates, terne-plates, and taggers tin, and hereafter provided for, when galvanized or coated with zinc or spelter, or other metals, or any alloy of those metals, three fourths of one cent per pound additional.

Polished, planished, or glanced sheet-iron, or sheet-steel, by whatever name designated, two and one half cents per pound: Provided, That plate or sheet or taggers iron, by whatever name designated, other than the polished, planished, or glanced herein provided for, which has been pickled or cleaned by acid, or by any other material or process, and which is cold-rolled, shall pay one quarter cent per pound more duty than the corresponding gauges of common or black sheet or taggers iron.

Iron or steel sheets, or plates, or taggers iron, coated with tin or lead, or with a mixture of which these metals is a component part, by the dipping or any other process, and commercially known as tin-plates, terne-plates, and taggers tin, one cent per pound; corrugated or crimped sheet iron or steel, one and four tenths of one cent per pound.

Hoop, or band, or scroll, or other iron, eight inches or less in width and not thinner than number ten wire gauge, one cent per pound; thinner than number ten wire gauge and not thinner than number twenty wire gauge, one and two tenths of one cent per pound; thinner than number twenty wire gauge, one and four tenths of one cent per pound: Provided, That all articles not specially enumerated or provided for in this act, whether wholly or partly manufactured, made from sheet, plate, hoop, band, or scroll iron herein provided for, or of which such sheet, plate, hoop, band, or scroll iron shall be the material of chief value, shall pay one fourth of one cent per pound more duty than that imposed on the iron from which they are made, or which shall be such material of chief value.

Iron and steel cotton-ties, or hoops for baling purposes, not thinner than number twenty wire gauge, thirty-five per centum ad valorem.

Cast-iron pipe of every description, one cent per pound.

Cast-iron vessels, plates, stove-plates, andirons, sad-irons, tailors' irons, hatters' irons, and castings of iron not specially enumerated or provided for in this act, one and one quarter of one cent per pound.

Cut nails and spikes, of iron or steel, one and one quarter of one cent per pound.

Cut tacks, brads, or sprigs, not exceeding sixteen ounces to the thousand, two and one half cents per thousand; exceeding sixteen ounces to the thousand, three cents per pound.

Iron or steel railway fish-plates, or splice-bars, one and one fourth of one cent per pound.

Malleable iron castings, not specially enumerated or provided for in this act, two cents per pound.

Wrought-iron or steel spikes, nuts, and washers, and horse, mule, or ox shoes, two cents per pound.

Anvils, anchors or parts thereof, mill-irons and mill-cranks of wrought-iron, and wrought-iron for ships, and forgings of iron and steel, for vessels, steam-engines, and locomotives, or parts thereof, weighing each twenty-five pounds or more, two cents per pound.

Iron or steel rivets, bolts, with or without threads or nuts, or bolt-blanks, and finished hinges or hinge-blanks, two and one half of one cent per pound.

Iron or steel blacksmiths' hammers and sledges, track-tools, wedges, and crowbars, two and one half of one cent per pound.

Iron or steel axles, parts thereof, axle-bars, axle-blanks, or forgings for axles, without reference to the stage or state of manufacture, two and one half of one cent per pound.

Forgings of iron and steel, or forged iron, of whatever shape, or in whatever stage of manufacture, not specially enumerated or provided for in this act, two and one half cents per pound.

Horseshoe-nails, hob-nails, and wire nails, and all

other wrought-iron or steel nails, not specially enumerated or provided for in this act, four cents per pound.

Boiler tubes, or flues, or stays of wrought-iron or steel, three cents per pound.

Other wrought-iron or steel tubes or pipes, two and one quarter cents per pound.

Chain or chains of all kinds, made of iron and steel, not less than three fourths of one inch in diameter, one and three quarter cents per pound; less than three fourths of one inch and not less than three eighths of one inch in diameter, two cents per pound; less than three eighths of one inch in diameter, two and one half cents per pound.

Cross-cut saws, eight cents per linear foot.

Mill, pit, and drag saws, not over nine inches wide, ten cents per linear foot; over nine inches wide, fifteen cents per linear foot.

Circular saws, thirty per centum ad valorem.

Hand, back, and all other saws, not specially enumerated or provided for in this act, forty per centum ad valorem.

Files, file-blanks, rasps, and floats of all cuts and kinds, four inches in length and under, thirty-five cents per dozen; over four inches in length and under nine inches, seventy-five cents per dozen; nine inches in length and under fourteen inches, one dollar and fifty cents per dozen; fourteen inches in length and over, two dollars and fifty cents per dozen.

Steel ingots, cogged ingots, blooms, and slabs, by whatever process made; die blocks or blanks; billets and bars and tapered or beveled bars; bands, hoops, strips and sheets, of all gauges and widths; plates of all thicknesses and widths; steamer, crank, and other shafts; wrist or crank-pins; connecting-rods and piston-rods; pressed, sheared, or stamped shapes, or blanks of sheet or plate steel, or combination of steel and iron, punched or not punched; hammer-molds or swaged steel; gun-molds, not in bars; alloys used as substitutes for steel tools; all descriptions and shapes of dry sand, loam, or iron-molded steel castings; all of the above classes of steel not otherwise specially provided for in this act, valued at four cents a pound or less, forty-five per centum ad valorem; above four cents a pound and not above seven cents per pound, two cents per pound; valued above seven cents a pound and not above ten cents per pound, two and [one fourth] three fourths cents per pound; valued at above ten cents per pound, three and one fourth cents per pound: Provided, That on all iron or steel bars, rods, strips, or steel sheets of whatever shape, and on all iron or steel bars of irregular shape or section, cold-rolled, cold-hammered, or polished in any way in addition to the ordinary process of hot-rolling or hammering, there shall be paid one fourth cent per pound in addition to the rates provided in this act, and on steel circular saw-plates there shall be paid one cent per pound in addition to the rate provided for in this act.

Iron or steel beams, girders, joists, angles, channels, car-truck channels, TT, columns and posts, or parts or sections of columns and posts, deck and bulb beams, and building forms, together with all other structural shapes of iron or steel, one and one fourth of one cent per pound.

Steel wheels and steel-tired wheels for railway purposes, whether wholly or partly finished, and iron or steel locomotive, car, and other railway tires, or parts thereof, wholly or partly manufactured, two and one half of one cent per pound; iron or steel ingots, cogged ingots, blooms or blanks for the same, without regard to the degree of manufacture, two cents per pound.

Iron or steel rivet, screw, nail, and fence-wire rods, round, in coils and loops, not lighter than number five wire gauge, valued at three and one half cents or less per pound, six tenths of one cent per pound. Iron or steel, flat with longitudinal ribs for the manufacture of fencing, six tenths of a cent per pound.

Screws, commonly called wood screws, two inches or over in length, six cents per pound; one inch and less than two inches in length, eight cents per pound; over one half inch and less than one inch in length, ten cents per pound; one half inch and less in length, twelve cents per pound.

Iron or steel wire, smaller than number five and not smaller than number ten wire gauge, one and one half cents per pound; smaller than number ten and not smaller than number sixteen wire gauge, two cents per pound; smaller than number sixteen and not smaller than number twenty-six wire gauge, two and one half cents per pound; smaller than number twenty-six wire gauge, three cents per pound: Provided, That iron or steel wire, covered with cotton, silk, or other material, and wire commonly known as crinoline, corset, and hat wire, shall pay four cents per pound in addition to the foregoing rates: And provided further, That no article made from iron or steel wire, or of which iron or steel wire is a component part of chief value, shall pay a less rate of duty than the iron or steel wire from which it is made either wholly or in part: And provided further, That iron or steel wire cloths, and iron or steel wire nettings, made in meshes of any form, shall pay a duty equal in amount to that imposed on iron or steel wire of the same gauge, and two cents per pound in addition thereto. There shall be paid on galvanized iron or steel wire (except fence-wire), one half of one cent per pound in addition to the rate imposed on the wire of which it is made. On iron-wire rope and wire strand, one cent per pound in addition to the rates imposed on the wire of which it is made. On steel-wire rope and wire strand, two cents per pound in addition to the rates imposed on the wire of which it is made.

Steel not specially enumerated or provided for in this act, forty-five per centum ad valorem: Provided, That all metal produced from iron or its ores, which is cast and malleable, of whatever description or form, without regard to the percentage of carbon contained therein, whether produced by cementation, or converted, cast, or made from iron or its ores, by the crucible, Bessemer, pneumatic, Thomas-Gilchrist, basic, Siemens-Martin, or open-hearth process, or by the equivalent of either, or by the combination of two or more of the processes, or their equivalents, or by any fusion or other process which produces from iron or its ores a metal either granular or fibrous in structure, which is cast and malleable, excepting what is known as malleable iron castings, shall be classed and denominated as steel.

No allowance or reduction of duties for partial loss or damage in consequence of rust or of discoloration shall be made upon any description of iron or steel, or upon any partly manufactured article of iron or steel, or upon any manufacture of iron and steel.

Argentine, albata, or German silver, unmanufactured, twenty-five per centum ad valorem.

Copper, imported in the form of ores, two and one half cents on each pound of fine copper contained therein; regulus of and black and coarse copper, and copper cement, three and one half cents on each pound of fine copper contained therein; old copper, fit only for remanufacture, clippings from new copper, and all composition metal of which copper is a component material of chief value not specially enumerated or provided for in this act, three cents per pound; copper in plates, bars, ingots, Chili or other pigs, and in other forms, not manufactured, or enumerated in this act, four cents per pound; in rolled plates, called brazier's copper, sheets, rods, pipes, and copper bottoms, and all manufactures of copper, or of which copper shall be a component of chief value, not specially enumerated or provided for in this act, thirty-five per centum ad valorem.

Brass, in bars or pig, old brass, and clippings from brass or Dutch metal, one and one half cent per pound.

Lead-ore and lead-dross, one and one half cent per pound.

Lead, in pigs and bars, molten and old refuse lead run into blocks and bars, and old scrap-lead, fit only to be remanufactured, two cents per pound.

Lead, in sheets, pipes, or shot, three cents per pound.

Nickel, in ore, matte, or other crude form not ready for consumption in the arts, fifteen cents per pound on the nickel contained therein.

Nickel, nickel-oxide, alloy of any kind in which nickel is the element of chief value, fifteen cents per pound.

Zinc, spelter, or tutenegue, in blocks or pigs, and old worn-out zinc, fit only to be remanufactured, one and one half cent per pound; zinc, spelter, or tutenegue in sheets, two and one half cents per pound.

Sheathing, or yellow-metal, not wholly of copper, nor wholly nor in part of iron, ungalvanized, in sheets, forty-eight inches long and fourteen inches wide, and weighing from fourteen to thirty-four ounces per square foot, thirty-five per centum ad valorem.

Antimony, as regulus or metal, ten per centum ad valorem.

Bronze powder, fifteen per centum ad valorem.

Cutlery, not specially enumerated or provided for in this act, thirty-five per centum ad valorem.

Dutch or bronze metal, in leaf, ten per centum ad valorem.

Steel plates, engraved, stereotype plates, and new types, twenty-five per centum ad valorem.

Gold-leaf, one dollar and fifty cents per package of five hundred leaves.

Hollow-ware, coated, glazed, or tinned, three cents per pound.

Muskets, rifles, and other fire-arms, not specially enumerated or provided for in this act, twenty-five per centum ad valorem.

All sporting breech-loading shot-guns, and pistols of all kinds, thirty-five per centum ad valorem.

Forged shot-gun barrels, rough-bored, ten per centum ad valorem.

Needles for knitting or sewing machines, thirty-five per centum ad valorem.

Needles, sewing, darning, knitting, and all others not specially enumerated or provided for in this act, twenty-five per centum ad valorem.

Pen-knives, pocket-knives, of all kinds, and razors, fifty per centum ad valorem; swords, sword-blades, and side-arms, thirty-five per centum ad valorem.

Pens, metallic, twelve cents per gross; pen-holder tips and pen-holders, or parts thereof, [forty] thirty per centum ad valorem.

Pins, solid-head or other, thirty per centum ad valorem.

Britannia ware, and plated and gilt articles and wares of all kinds, thirty-five per centum ad valorem.

Quicksilver, ten per centum ad valorem.

Silver-leaf, seventy-five cents per package of five hundred leaves.

Type-metal, twenty per centum ad valorem.

Chromate of iron, or chromic ore, fifteen per centum ad valorem.

Mineral substances in a crude state, and metals unwrought, not specially enumerated or provided for in this act, twenty per centum ad valorem.

Manufactures, articles or wares, not specially enumerated or provided for in this act, composed wholly or in part of iron, steel, copper, lead, nickel, pewter, tin, zinc, gold, silver, platinum, or any other metal, and whether partly or wholly manufactured, forty-five per centum ad valorem.

SCHEDULE D.—WOOD AND WOODEN-WARES.

Timber, hewn and sawed, and timber used for spars and in building wharves, twenty per centum ad valorem.

Timber, squared or sided, not specially enumerated or provided for in this act, one cent per cubic foot.

Sawed boards, planks, deals, and other lumber of hemlock, white-wood, sycamore, and bass-wood, one dollar per one thousand feet, board measure; all other articles of sawed lumber, two dollars per one thousand feet, board measure. But when lumber of any sort is planed or finished, in addition to the rates herein provided, there shall be levied and paid for each side so planed or finished, fifty cents per one thousand feet, board measure.

And if planed on one side and tongued and grooved, one dollar per one thousand feet, board measure.

And if planed on two sides, and tongued and grooved, one dollar and fifty cents per one thousand feet, board measure.

Hubs for wheels, posts, last-blocks, wagon-blocks, ore-blocks, gun-blocks, heading-blocks, and all like blocks or sticks, rough-hewn or sawed only, twenty per centum ad valorem.

Staves of wood of all kinds, ten per centum ad valorem.

Pickets and palings, twenty per centum ad valorem.

Laths, fifteen cents per one thousand pieces.

Shingles, thirty-five cents per one thousand.

Pine clapboards, two dollars per one thousand.

Spruce clapboards, one dollar and fifty cents per one thousand.

House or cabinet furniture, in piece or rough, and not finished, thirty per centum ad valorem.

Cabinet-ware and house furniture, finished, thirty-five per centum ad valorem.

Casks and barrels empty, sugar-box shooks, and packing-boxes, and packing-box shooks, of wood, not specially enumerated or provided for in this act, thirty per centum ad valorem.

Manufactures of cedar-wood, granadilla, ebony, mahogany, rose-wood, and satin-wood, thirty-five per centum ad valorem.

Manufactures of wood, or of which wood is the chief component part, not specially enumerated or provided for in this act, thirty-five per centum ad valorem.

Wood, unmanufactured, not specially enumerated or provided for in this act, twenty per centum ad valorem.

SCHEDULE E.—SUGAR.

All sugars not above No. 13 Dutch standard in color shall pay duty on their polariscopic test as follows, viz.:

All sugars not above No. 13 Dutch standard in color, all tank bottoms, sirups of cane-juice or of beet-juice, melada, concentrated melada, concrete and concentrated molasses, testing by the polariscope not above seventy-five degrees, shall pay a duty of one and forty hundredths cent per pound, and for every additional degree or fraction of a degree shown by the polariscopic test, they shall pay four hundredths of a cent per pound additional.

All sugars above No. 13 Dutch standard in color shall be classified by the Dutch standard of color, and pay duty as follows, namely:

All sugar above No. 13 and not above No. 16 Dutch standard, two and seventy-five hundredths cents per pound.

All sugar above No. 16 and not above No. 20 Dutch standard, three cents per pound.

All sugars above No. 20 Dutch standard, three and fifty hundredths cents per pound.

Molasses testing not above fifty-six degrees by the polariscope, shall pay a duty of four cents per gallon: molasses testing above fifty-six degrees, shall pay a duty of eight cents per gallon.

Sugar-candy, not colored, five cents per pound.

All other confectionery, not specially enumerated or provided for in this act, made wholly or in part of sugar, and on sugars after being refined, when tinctured, colored, or in any way adulterated, valued at thirty cents per pound or less, ten cents per pound.

Confectionery valued above thirty cents per pound, or when sold by the box, package, or otherwise than by the pound, fifty per centum ad valorem.

SCHEDULE F.—TOBACCO.

Cigars, cigarettes, and cheroots of all kinds, two dollars and fifty cents per pound and twenty-five per

centum ad valorem; but paper cigars and cigarettes, including wrappers, shall be subject to the same duties as are herein imposed upon cigars.

Leaf-tobacco, of which eighty-five per cent. is of the requisite size and of the necessary fineness of texture to be suitable for wrappers, and of which more than one hundred leaves are required to weigh a pound, if not stemmed, seventy-five cents per pound; if stemmed, one dollar per pound.

All other tobacco in leaf, unmanufactured, and not stemmed, thirty-five cents per pound.

Tobacco-stems, fifteen cents per pound.

Tobacco, manufactured, of all descriptions, and stemmed tobacco, not specially enumerated or provided for in this act, forty cents per pound.

Snuff and snuff-flour, manufactured of tobacco, ground, dry, or damp, and pickled, scented or otherwise, of all descriptions, fifty cents per pound.

Tobacco, unmanufactured, not specially enumerated or provided for in this act, thirty per centum ad valorem.

SCHEDULE G.—PROVISIONS.

Animals, live, twenty per centum ad valorem.

Beef and pork, one cent per pound.

Hams and bacon, two cents per pound.

Meat, extract of, twenty per centum ad valorem.

Cheese, four cents per pound.

Butter, and substitutes therefor, four cents per pound.

Lard, two cents per pound.

Wheat, twenty cents per bushel.

Rye and barley, ten cents per bushel.

Barley, pearled, patent, or hulled, one half cent per pound.

Barley-malt, per bushel of thirty-four pounds, twenty cents.

Indian corn or maize, ten cents per bushel.

Oats, ten cents per bushel.

Corn-meal, ten cents per bushel of forty-eight pounds.

Oatmeal, one half cent per pound.

Rye-flour, one half cent per pound.

Wheat-flour, twenty per centum ad valorem.

Potato or corn starch, two cents per pound; rice-starch, two and a half cents per pound; other starch, two and a half cents per pound.

Rice, cleaned, two and one fourth cents per pound; uncleaned, one and one half cent per pound.

Paddy, one and one fourth cent per pound.

Rice-flour and rice-meal, twenty per centum ad valorem.

Hay, two dollars per ton.

Honey, twenty cents per gallon.

Hops, eight cents per pound.

Milk, preserved or condensed, twenty per centum ad valorem.

Fish:

Mackerel, one cent per pound.

Herrings, pickled or salted, one half of one cent per pound.

Salmon, pickled, one cent per pound; other fish, pickled, in barrels, one cent per pound.

Foreign-caught fish, imported otherwise than in barrels or half-barrels, whether fresh, smoked, dried, salted, or pickled, not specially enumerated or provided for in this act, fifty cents per hundred pounds.

Anchovies and sardines, packed in oil or otherwise, in tin boxes measuring not more than five inches long, four inches wide, and three and one half inches deep, ten cents per whole box; in half-boxes, measuring not more than five inches long, four inches wide, and one and five eighths deep, five cents each; in quarter-boxes, measuring not more than four inches and three quarters long, three and one half inches wide, and one and a quarter deep, two and one half cents each; when imported in any other form, forty per centum ad valorem.

Fish preserved in oil, except anchovies and sardines, thirty per centum ad valorem.

Salmon, and all other fish, prepared or preserved, and prepared meats of all kinds, not specially enumerated or provided for in this act, twenty-five per centum ad valorem.

Pickles and sauces, of all kinds, not otherwise specially enumerated or provided for in this act, thirty-five per centum ad valorem.

Potatoes, fifteen cents per bushel of sixty pounds.

Vegetables, in their natural state, or in salt or brine, not specially enumerated or provided for in this act, ten per centum ad valorem.

Vegetables, prepared or preserved, of all kinds, not otherwise provided for, thirty per centum ad valorem.

Chiccory-root, ground or unground, burnt or prepared, two cents per pound.

Vinegar, seven and one half cents per gallon. The standard for vinegar shall be taken to be that strength which requires thirty-five grains of bicarbonate of potash to neutralize one ounce troy of vinegar; and all import duties that may by law be imposed on vinegar imported from foreign countries shall be collected according to this standard.

Acorns and dandelion-root, raw or prepared, and all other articles used or intended to be used as coffee, or as substitutes therefor, not specially enumerated or provided for in this act, two cents per pound.

Chocolate, two cents per pound.

Cocoa, prepared or manufactured, two cents per pound.

Fruits:

Currants, Zante or other, one cent per pound.

Dates, plums, and prunes, one cent per pound.

Figs, two cents per pound.

Oranges, in boxes of capacity not exceeding two and one half cubic feet, twenty-five cents per box; in one half boxes, capacity not exceeding one and one fourth cubic feet, thirteen cents per half-box; in bulk, one dollar and sixty cents per thousand; in barrels, capacity not exceeding that of the one hundred and ninety-six pounds flour-barrel, fifty-five cents per barrel.

Lemons, in boxes of capacity not exceeding two and one half cubic feet, thirty cents per box; in one half boxes, capacity not exceeding one and one fourth cubic feet, sixteen cents per half-box; in bulk, two dollars per thousand.

Lemons and oranges, in packages, not specially enumerated or provided for in this act, twenty per centum ad valorem.

Limes and grapes, twenty per centum ad valorem.

Raisins, two cents per pound.

Fruits, preserved in their own juices, and fruit-juice, twenty per centum ad valorem.

Comfits, sweetmeats, or fruits preserved in sugar, spirits, sirup, or molasses, not otherwise specified or provided for in this act, and jellies of all kinds, thirty-five per centum ad valorem.

Nuts:

Almonds, five cents per pound; shelled, seven and one half cents per pound; filberts, and walnuts, of all kinds, three cents per pound.

Peanuts or ground beans, one cent per pound; shelled, one and one half cent per pound.

Nuts of all kinds, shelled or unshelled, not specially enumerated or provided for in this act, two cents per pound.

Mustard, ground or preserved, in bottles or otherwise, ten cents per pound.

SCHEDULE H.—LIQUORS.

Champagne, and all other sparkling wines, in bottles containing each not more than one quart and more than one pint, seven dollars per dozen bottles; containing not more than one pint each and more than one half pint, three dollars and fifty cents per dozen bottles; containing one half pint each, or less, one dollar and seventy-five cents per dozen bottles; in bottles containing more than one quart each, in addition to seven dollars per dozen bottles, at the rate of two dollars an dtwenty-five cents per gallon on the quantity in excess of one quart bottle.

Still wines in casks, fifty cents per gallon; in bot-

tles, one dollar and sixty cents per case of one dozen bottles containing each not more than one quart and more than one pint, or twenty-four bottles containing each not more than one pint; and any excess beyond these quantities found in such bottles shall be subject to a duty of five cents per pint or fractional part thereof; but no separate or additional duty shall be collected on the bottles: *Provided*, That any wines imported containing more than twenty-four per centum of alcohol shall be forfeited to the United States: *Provided further*, That there shall be no allowance for breakage, leakage, or damage on wines, liquors, cordials, or distilled spirits.

Vermuth, the same duty as on still wines.

Wines, brandy, and other spirituous liquors imported in bottles, shall be packed in packages containing not less than one dozen bottles in each package; and all such bottles, except as specially enumerated or provided for in this act, shall pay an additional duty of three cents for each bottle.

Brandy, and other spirits manufactured or distilled from grain or other materials and not specially enumerated or provided for in this act, two dollars per proof gallon; each and every gauge or wine gallon of measurement shall be counted as at least one proof gallon; and the standard for determining the proof of brandy and other spirits or liquors of any kind imported shall be the same as that which is defined in the laws relating to internal revenue; but any brandy or other spirituous liquors imported in casks of less capacity than fourteen gallons shall be forfeited to the United States.

On all compounds or preparations of which distilled spirits are a component part of chief value, not specially enumerated or provided for in this act, there shall be levied a duty not less than that imposed upon distilled spirits.

Cordials, liquors, arrack, absinthe, kirschwasser, ratafia, and other similar spirituous beverages or bitters, containing spirits, and not specially enumerated or provided for in this act, two dollars per proof gallon.

No lower rate or amount of duty shall be levied, collected, and paid on brandy, spirits, and other spirituous beverages than that fixed by law for the description of first proof; but it shall be increased in proportion for any greater strength than the strength of first proof; and all imitations of brandy or spirits or wines imported by any names whatever shall be subject to the highest rate of duty provided for the genuine articles respectively intended to be represented, and in no case less than one dollar per gallon.

Bay-rum or bay-water, whether distilled or compounded, one dollar per gallon of first proof, and in proportion for any greater strength than first proof.

Ale, porter, and beer, in bottles or jugs of glass, stone or earthenware, thirty-five cents per gallon; otherwise than in bottles or jugs of glass, stone, or earthenware, twenty cents per gallon.

Ginger ale or ginger beer, twenty per centum ad valorem, but no separate or additional duty shall be collected on bottles or jugs containing the same.

SCHEDULE I.—COTTON AND COTTON GOODS.

Cotton thread, yarn, warps, or warp-yarn, whether single or advanced beyond the condition of single, by twisting two or more single yarns together, whether on beams or in bundles, skeins or cops, or in any other form, valued at not exceeding twenty-five cents per pound, ten cents per pound; valued at over twenty-five cents per pound, and not exceeding forty cents per pound, fifteen cents per pound; valued at over forty cents per pound, and not exceeding fifty cents per pound, twenty cents per pound; valued at over fifty cents per pound and not exceeding sixty cents per pound, twenty-five cents per pound; valued at over sixty cents per pound and not exceeding seventy cents per pound, thirty-three cents per pound; valued at over seventy cents per pound and not exceeding eighty cents per pound, thirty-eight cents per pound; valued at over eighty cents per pound, and not exceeding one dollar per pound, forty-eight cents per pound; valued at over one dollar per pound, fifty per centum ad valorem.

On all cotton cloth not bleached, dyed, colored, stained, painted, or printed, and not exceeding one hundred threads to the square inch, counting the warp and filling, two and one half cents per square yard; if bleached, three and one half cents per square yard; if dyed, colored, stained, painted, or printed, four and one half cents per square yard.

On all cotton cloth, not bleached, dyed, colored, stained, painted, or printed, exceeding one hundred and not exceeding two hundred threads to the square inch, counting the warp and filling, three cents per square yard; if bleached, four cents per square yard; if dyed, colored, stained, painted, or printed, five cents per square yard: *Provided*, That on all cotton cloth not exceeding two hundred threads to the square inch, counting the warp and filling, not bleached, dyed, colored, stained, painted, or printed, valued at over eight cents per square yard; bleached, valued at over ten cents per square yard; dyed, colored, stained, painted, or printed, valued at over thirteen cents per square yard, there shall be levied, collected, and paid a duty of forty per centum ad valorem.

On all cotton cloth exceeding two hundred threads to the square inch, counting the warp and filling, not bleached, dyed, colored, stained, painted, or printed, four cents per square yard; if bleached, five cents per square yard, if dyed, colored, stained, painted, or printed, six cents per square yard: *Provided*, That on all such cotton cloths not bleached, dyed, colored, stained, painted, or printed, valued at over ten cents per square yard; bleached, valued at over twelve cents per square yard; and dyed, colored, stained, painted, or printed, valued at over fifteen cents per square yard, there shall be levied, collected, and paid a duty of forty per centum ad valorem.

On stockings, hose, half-hose, shirts, and drawers, and all goods made on knitting-machines or frames, composed wholly of cotton, and not herein otherwise provided for, thirty-five per centum ad valorem.

On stockings, hose, half-hose, shirts, and drawers, fashioned, narrowed, or shaped wholly or in part by knitting-machines or frames, or knit by hand, and composed wholly of cotton, forty per centum ad valorem.

Cotton cords, braids, gimps, galloons, webbing, goring, suspenders, braces, and all manufactures of cotton not specially enumerated or provided for in this act, and corsets, of whatever material composed, thirty-five per centum ad valorem.

Cotton laces, embroideries, insertings, trimmings, lace window-curtains, cotton damask, hemmed handkerchiefs, and cotton-velvet, forty per centum ad valorem.

Spool-thread of cotton, seven cents per dozen spools, containing on each spool not exceeding one hundred yards of thread; exceeding one hundred yards on each spool, for every additional one hundred yards of thread or fractional part thereof in excess of one hundred yards, seven cents per dozen.

SCHEDULE J.—HEMP, JUTE, AND FLAX GOODS.

Flax-straw, five dollars per ton.

Flax, not hackled or dressed, twenty dollars per ton.

Flax, hackled, known as "dressed line," forty dollars per ton.

Tow, of flax or hemp, ten dollars per ton.

Hemp, manila, and other like substitutes for hemp not specially enumerated or provided for in this act, twenty-five dollars per ton.

Jute-butts, five dollars per ton.

Jute, twenty per centum ad valorem; sunn, Sisal grass, and other vegetable substances, not specially enumerated or provided for in this act, fifteen dollars per ton.

Brown and bleached linens, ducks, canvas, paddings, cot-bottoms, diapers, crash, huckabacks, hand-

kerchiefs, lawns, or other manufactures of flax, jute, or hemp, or of which flax, jute, or hemp shall be the component material of chief value, not specially enumerated or provided for in this act, thirty-five per centum ad valorem.

Flax, hemp, and jute-yarns, thirty-five per centum ad valorem.

Flax or linen thread, twine, and pack-thread, and all manufactures of flax, or of which flax shall be the component material of chief value, not specially enumerated or provided for in this act, forty per centum ad valorem.

Flax or linen laces and insertings, embroideries, or manufactures of linen, if embroidered or tamboured in the loom or otherwise, by machinery or with the needle or other process, and not specially enumerated or provided for in this act, thirty per centum ad valorem.

Burlaps, not exceeding sixty inches in width, of flax, jute, or hemp, or of which flax, jute, or hemp, or either of them, shall be the component material of chief value (except such as may be suitable for bagging for cotton), thirty per centum ad valorem.

Oil-cloth foundations, or floor-cloth canvas, or burlaps exceeding sixty inches in width, made of flax, jute, or hemp, or of which flax, jute, or hemp, or either of them, shall be the component material of chief value, forty per centum ad valorem.

Oil-cloths for floors, stamped, painted, or printed, and on all other oil-cloth (except silk oil-cloth), and on water-proof cloth, not otherwise provided for, forty per centum ad valorem.

Gunny-cloth, not bagging, valued at ten cents or less per square yard, three cents per pound; valued at over ten cents per square yard, four cents per pound.

Bags and bagging, and like manufactures, not specially enumerated or provided for in this act (except bagging for cotton), composed wholly or in part of flax, hemp, jute, gunny-cloth, gunny-bags, or other material, forty per centum ad valorem.

Bagging for cotton, or other manufactures not specially enumerated or provided for in this act, suitable to the uses for which cotton-bagging is applied, composed in whole or in part of hemp, jute, jute-butts, flax, gunny-bags, gunny-cloth, or other material, and valued at seven cents or less per square yard, one and one half cents per pound; valued at over seven cents per square yard, two cents per pound.

Tarred cables or cordage, three cents per pound.

Untarred manila cordage, two and one half cents per pound.

All other untarred cordage, three and one half cents per pound.

Seines and seine and gilling twine, twenty-five per centum ad valorem.

Sail-duck, or canvas for sails, thirty per centum ad valorem.

Russia and other sheetings, of flax or hemp, brown or white, thirty-five per centum ad valorem.

All other manufactures of hemp, or manila, or of which hemp or manila shall be a component material of chief value, not specially enumerated or provided for in this act, thirty-five per centum ad valorem.

Grass-cloth and other manufactures of jute, ramp, China and Sisal grass, not specially enumerated or provided for in this act, thirty-five per centum ad valorem.

SCHEDULE K.—WOOL AND WOOLENS.

All wools, hair of the alpaca, goat, and other like animals, shall be divided, for the purpose of fixing the duties to be charged thereon, into the three following classes:

Class one, clothing wools.—That is to say, merino, mestiza, metz or metis wools, or other wools of merino blood, immediate or remote, down clothing wools, and wools of like character with any of the preceding, including such as have been heretofore usually imported into the United States from Buenos Ayres, New Zealand, Australia, Cape of Good Hope, Russia, Great Britain, Canada, and elsewhere, and also including all wools not hereinafter described or designated in classes two and three.

Class two, combing wools.—That is to say, Leicester, Cotswold, Lincolnshire, Down combing wools, Canada long wools, or other like combing wools of English blood, and usually known by the terms herein used, and also all hair of the alpaca, goat, and other like animals.

Class three, carpet wools and other similar wools.—Such as Donskoi, native South American, Cordova, Valparaiso, native Smyrna, and including all such wools of like character as have been heretofore usually imported into the United States from Turkey, Greece, Egypt, Syria, and elsewhere.

The duty on wools of the first class which shall be imported washed shall be twice the amount of the duty to which they would be subjected if imported unwashed; and the duty on wools of all classes which shall be imported scoured shall be three times the duty to which they would be subjected if imported unwashed. The duty upon wool of the sheep, or hair of the alpaca, goat, and other like animals, which shall be imported in any other than ordinary condition, as now and heretofore practiced, or which shall be changed in its character or condition for the purpose of evading the duty, or which shall be reduced in value by the admixture of dirt or any other foreign substance, shall be twice the duty to which it would be otherwise subject.

Wools of the first class, the value whereof at the last port or place whence exported to the United States, excluding charges in such port, shall be thirty cents or less per pound, ten cents per pound; wools of the same class, the value whereof at the last port or place whence exported to the United States, excluding charges in such port, shall exceed thirty cents per pound, twelve cents per pound.

Wools of the second class, and all hair of the alpaca, goat, and other like animals, the value whereof, at the last port or place whence exported to the United States, excluding charges in such port, shall be thirty cents or less per pound, ten cents per pound; wools of the same class, the value whereof at the last port or place whence exported to the United States, excluding charges in such port, shall exceed thirty cents per pound, twelve cents per pound.

Wools of the third class, the value whereof, at the last port or place whence exported to the United States, excluding charges in such port, shall be twelve cents or less per pound, two and a half cents per pound; wools of the same class, the value whereof, at the last port or place whence exported to the United States, excluding charges in such port, shall exceed twelve cents per pound, five cents per pound.

Wools on the skin, the same rates as other wools, the quantity and value to be ascertained under such rules as the Secretary of the Treasury may prescribe.

Woolen rags, shoddy, mungo, waste, and flocks, ten cents per pound.

Woolen cloths, woolen shawls, and all manufactures of wool of every description, made wholly or in part of wool, not specially enumerated or provided for in this act, valued at not exceeding eighty cents per pound, thirty-five cents per pound and thirty-five per centum ad valorem; valued at above eighty cents per pound, thirty-five cents per pound, and in addition thereto forty per centum ad valorem.

Flannels, blankets, hats of wool, knit goods, and all goods made on knitting-frames, balmorals, woolen and worsted yarns, and all manufactures of every description, composed wholly or in part of worsted, the hair of the alpaca, goat, or other animals (except such as are composed in part of wool), not specially enumerated or provided for in this act, valued at not exceeding thirty cents per pound, ten cents per pound; valued at above thirty cents per pound, and not exceeding forty cents per pound, twelve cents per pound; valued at above forty cents per pound, and not exceeding sixty cents per pound, eighteen cents per

pound; valued at above sixty cents per pound, and not exceeding eighty cents per pound, twenty-four cents per pound; and in addition thereto, upon all the above-named articles, thirty-five per centum ad valorem; valued at above eighty cents per pound, thirty-five cents per pound, and in addition thereto forty per centum ad valorem.

Bunting, ten cents per square yard, and in addition thereto, thirty-five per centum ad valorem.

Women's and children's dress-goods, coat-linings, Italian cloths, and goods of like description, composed in part of wool, worsted, the hair of the alpaca, goat, or other animals, valued at not exceeding twenty cents per square yard, five cents per square yard, and in addition thereto, thirty-five per centum ad valorem; valued at above twenty cents per square yard, seven cents per square yard, and forty per centum ad valorem; if composed wholly of wool, worsted, the hair of the alpaca, goat, or other animals, or of a mixture of them, nine cents per square yard and forty per centum ad valorem, but all such goods with selvedges, made wholly or in part of other materials, or with threads of other materials introduced for the purpose of changing the classification, shall be dutiable at nine cents per square yard and forty per centum ad valorem: *Provided*, That all such goods weighing over four ounces per square yard shall pay a duty of thirty-five cents per pound and forty per centum ad valorem.

Clothing, ready-made, and wearing-apparel of every description, not specially enumerated or provided for in this act, and balmoral skirts, and skirting, and goods of similar description, or used for like purposes, composed wholly or in part of wool, worsted, the hair of the alpaca, goat, or other animals, made up or manufactured wholly or in part by the tailor, seamstress, or manufacturer, except knit goods, forty cents per pound, and in addition thereto, thirty-five per centum ad valorem.

Cloaks, dolmans, jackets, talmas, ulsters, or other outside garments for ladies and children's apparel, and goods of similar description, or used for like purposes, composed wholly or in part of wool, worsted, the hair of the alpaca, goat, or other animals, made up or manufactured wholly or in part by the tailor, seamstress, or manufacturer (except knit goods), forty-five cents per pound, and in addition thereto, forty per centum ad valorem.

Webbings, gorings, suspenders, braces, beltings, bindings, braids, galloons, fringes, gimps, cords, cords and tassels, dress-trimmings, head-nets, buttons, or barrel-buttons, or buttons of other forms for tassels or ornaments, wrought by hand or braided by machinery, made of wool, worsted, the hair of the alpaca, goat, or other animals, or of which wool, worsted, the hair of the alpaca, goat, or other animals is a component material, thirty cents per pound, and in addition thereto, fifty per centum ad valorem.

Aubusson, Axminster, and chenille carpets, and carpets woven whole for rooms, forty-five cents per square yard, and in addition thereto, thirty per centum ad valorem.

Saxony, Wilton, and Tournay velvet carpets, forty-five cents per square yard, and in addition thereto, thirty per centum ad valorem.

Brussels carpets, thirty cents per square yard, and in addition thereto, thirty per centum ad valorem.

Patent velvet and tapestry velvet carpets, printed on the warp or otherwise, twenty-five cents per square yard, and in addition thereto, thirty per centum ad valorem.

Tapestry Brussels carpets, printed on the warp or otherwise, twenty cents per square yard, and in addition thereto, thirty per centum ad valorem.

Treble ingrain, three-ply, and worsted-chain Venetian carpets, twelve cents per square yard, and in addition thereto, thirty per centum ad valorem.

Yarn Venetian, and two-ply ingrain carpets, eight cents per square yard, and in addition thereto, thirty per centum ad valorem.

Druggets and bockings, printed, colored, or otherwise, fifteen cents per square yard, and in addition thereto, thirty per centum ad valorem.

Hemp or jute carpeting, six cents per square yard.

Carpets and carpetings of wool, flax, or cotton, or parts of either or other material, not otherwise herein specified, forty per centum ad valorem; and mats, rugs, screens, covers, hassocks, bedsides, and other portions of carpets or carpetings, shall be subjected to the rate of duty herein imposed on carpets or carpeting of like character or description; and the duty on all other mats not exclusively of vegetable material, screens, hassocks, and rugs, shall be forty per centum ad valorem.

Endless belts or felts for paper or printing-machines, twenty cents per pound and thirty per centum ad valorem.

SCHEDULE L.—SILK AND SILK GOODS.

Silk, partially manufactured from cocoons, or from waste silk, and not further advanced or manufactured than carded or combed silk, fifty cents per pound.

Thrown silk, in gum, not more advanced than singles, tram, organzine, sewing-silk, twist, floss, in the gum, and spun silk, silk threads or yarns, of every description, purified or dyed, thirty per centum ad valorem.

On lastings, mohair cloths, silk twist, or other manufactures of cloth, woven or made in patterns of such size, shape, or form, or cut in such manner as to be fit for buttons exclusively, ten per centum ad valorem.

All goods, wares, merchandise, not specially enumerated or provided for in this act, made of silk, or of which silk is the component material of chief value, fifty per centum ad valorem.

SCHEDULE M.—BOOKS, PAPERS, ETC.

Books, pamphlets, bound or unbound, and all printed matter, not specially enumerated or provided for in this act, engravings, bound or unbound, etchings, illustrated books, maps, and charts, twenty-five per centum ad valorem.

Blank-books, bound or unbound, and blank-books for press-copying, twenty per centum ad valorem.

Paper, sized or glued, suitable only for printing-paper, twenty per centum ad valorem.

Printing-paper, unsized, used for books and newspapers exclusively, fifteen per centum ad valorem.

Paper, manufactures of, or of which paper is a component material, not specially enumerated or provided for in this act, fifteen per centum ad valorem.

Sheathing-paper, ten per centum ad valorem.

Paper boxes, and all other fancy boxes, thirty-five per centum ad valorem.

Paper envelopes, twenty-five per centum ad valorem.

Paper-hangings and paper for screens or fire-boards, paper antiquarian, demy, drawing, elephant, foolscap, imperial, letter, note, and all other paper not specially enumerated or provided for in this act, twenty-five per centum ad valorem.

Pulp, dried, for paper-makers' use, ten per centum ad valorem.

SCHEDULE N.—SUNDRIES.

Alabaster and spar statuary and ornaments, ten per centum ad valorem.

Baskets and all other articles composed of grass, osier, palm-leaf, whalebone, or willow, or straw, not specially enumerated or provided for in this act, thirty per centum ad valorem.

Beads, and bead ornaments of all kinds, except amber, fifty per centum ad valorem.

Blacking of all kinds, twenty-five per centum ad valorem.

Bladders, manufactures of, twenty-five per centum ad valorem.

Bone, horn, ivory, or vegetable ivory, all manufactures of, not specially enumerated or provided for in this act, thirty per centum ad valorem.

Bonnets, hats, and hoods for men, women, and children, composed of chip, grass, palm-leaf, willow, or straw, or any other vegetable substance, hair,

whalebone, or other material, not specially enumerated or provided for in this act, thirty per centum ad valorem.

Bouillons, or cannetille, metal threads, filé, or gespinst, twenty-five per centum ad valorem.

Bristles, fifteen cents per pound.

Brooms of all kinds, twenty-five per centum ad valorem.

Brushes of all kinds, thirty per centum ad valorem.

Bulbs and bulbous roots, not medicinal, and not specially enumerated or provided for in this act, twenty per centum ad valorem.

Burr-stones, manufactured or bound up into mill-stones, twenty per centum ad valorem.

Buttons and button-molds, not specially enumerated or provided for in this act, not including brass, gilt, or silk buttons, twenty-five per centum ad valorem.

Candles and tapers of all kinds, twenty per centum ad valorem.

Canes and sticks for walking, finished, thirty-five per centum ad valorem; if unfinished, twenty per centum ad valorem.

Card-cases, pocket-books, shell boxes, and all similar articles, of whatever material composed, and by whatever name known, not specially enumerated or provided for in this act, thirty-five per centum ad valorem.

Card-clothing, twenty-five cents per square foot; when manufactured from tempered steel wire, forty-five cents per square foot.

Carriages, and parts of, not specially enumerated or provided for in this act, thirty-five per centum ad valorem.

Chronometers, box or ship's, and parts thereof, ten per centum ad valorem.

Clocks, and parts of clocks, thirty per centum ad valorem.

Coach and harness furniture of all kinds, saddlery, coach, and harness hardware, silver-plated, brass, brass-plated, or covered, common, tinned, burnished, or japanned, not specially enumerated or provided for in this act, thirty-five per centum ad valorem.

Coal, slack or culm, such as will pass through a half-inch screen, thirty cents per ton of twenty-eight bushels, eighty pounds to the bushel.

Coal, bituminous, and shale, seventy-five cents per ton of twenty-eight bushels, eighty pounds to the bushel. A drawback of seventy-five cents per ton shall be allowed on all bituminous coal imported into the United States which is afterward used for fuel on board of vessels propelled by steam which are engaged in the coasting trade of the United States, or in the trade with foreign countries, to be allowed and paid under such regulations as the Secretary of the Treasury shall prescribe.

Coke, twenty per centum ad valorem.

Combs, of all kinds, thirty per centum ad valorem.

Compositions of glass or paste, when not set, ten per centum ad valorem.

Coral, cut, manufactured, or set, twenty-five per centum ad valorem.

Corks and cork-bark, manufactured, twenty-five per centum ad valorem.

Crayons of all kinds, twenty per centum ad valorem.

Dice, draughts, chess-men, chess-balls, and billiard and bagatelle balls, of ivory or bone, fifty per centum ad valorem.

Dolls and toys, thirty-five per centum ad valorem.

Emery-grains and emery manufactured, ground, pulverized, or refined, one cent per pound.

Epaulets, galloons, laces, knots, stars, tassels, and wings, of gold, silver, or other metal, twenty-five per centum ad valorem.

Fans, of all kinds, except common palm-leaf fans, of whatever material composed, thirty-five per centum ad valorem.

Feathers, of all kinds, crude or not dressed, colored or manufactured, twenty-five per centum ad valorem; when dressed, colored, or manufactured, including dressed and finished birds, for millinery ornaments, and artificial and ornamental feathers and flowers, or parts thereof, of whatever material composed, for millinery use, not specially enumerated or provided for in this act, fifty per centum ad valorem.

Finishing powder, twenty per centum ad valorem.

Fire-crackers, of all kinds, one hundred per centum ad valorem.

Floor-matting and floor-mats, exclusively of vegetable substances, twenty per centum ad valorem.

Friction or lucifer matches of all descriptions, thirty-five per centum ad valorem.

Fulminates, fulminating powders, and all like articles, not specially enumerated or provided for in this act, thirty per centum ad valorem.

Fur, articles made of, and not specially enumerated or provided for in this act, thirty per centum ad valorem.

Gloves, kid or leather, of all descriptions, wholly or partially manufactured, fifty per centum ad valorem.

Grease, all not specially enumerated or provided for in this act, ten per centum ad valorem.

Grindstones, finished or unfinished, one dollar and seventy-five cents per ton.

Gunpowder, and all explosive substances used for mining, blasting, artillery, or sporting purposes, when valued at twenty cents or less per pound, six cents per pound; valued above twenty cents per pound, ten cents per pound.

Gun-wads, of all descriptions, thirty-five per centum ad valorem.

Gutta-percha, manufactured, and all articles of, not specially enumerated or provided for in this act, thirty-five per centum ad valorem.

Hair, human, bracelets, braids, chains, rings, curls, and ringlets, composed of hair, or of which hair is the component material of chief value, thirty-five per centum ad valorem.

Curled hair, except of hogs, used for beds or mattresses, twenty-five per centum ad valorem.

Human hair, raw, uncleaned and not drawn, twenty per centum ad valorem. If clean or drawn, but not manufactured, thirty per centum ad valorem; when manufactured, thirty-five per centum ad valorem.

Hair-cloth, known as "crinoline-cloth," and all other manufactures of hair not specially enumerated or provided for in this act, thirty per centum ad valorem.

Hair-cloth, known as "hair-seating," thirty cents per square yard.

Hair pencils, thirty per centum ad valorem.

Hats, etc., materials for: Braids, plaits, flats, laces, trimmings, tissues, willow sheets and squares, used for making or ornamenting hats, bonnets, and hoods, composed of straw, chip, grass, palm-leaf, willow, hair, whalebone, or any other substance or material, not specially enumerated or provided for in this act, twenty per centum ad valorem.

Hat-bodies of cotton, thirty-five per centum ad valorem.

Hatters' furs, not on the skin, and dressed furs on the skin, twenty per centum ad valorem.

Hatters' plush, composed of silk or of silk and cotton, twenty-five per centum ad valorem.

Hemp-seed and rape-seed, and other oil-seeds of like character, other than linseed or flaxseed, one quarter of one cent per pound.

India-rubber fabrics, composed wholly or in part of India-rubber, not specially enumerated or provided for in this act, thirty per centum ad valorem.

Articles composed of India-rubber, not specially enumerated or provided for in this act, twenty-five per centum ad valorem.

India-rubber boots and shoes, twenty-five per centum ad valorem.

Inks of all kinds and ink-powders, thirty per centum ad valorem.

Japanned ware of all kinds, not specially enumerated or provided for in this act, forty per centum ad valorem.

Jet, manufactures and imitations of, twenty-five per centum ad valorem.

Jewelry of all kinds, twenty-five per centum ad valorem.

Leather, bend or belting leather, and Spanish or other sole-leather, and leather not specially enumerated or provided for in this act, fifteen per centum ad valorem.

Calf-skins, tanned, or tanned and dressed, and dressed upper leather of all other kinds, and skins dressed and finished, of all kinds, not specially enumerated or provided for in this act, and skins of morocco, finished, twenty per centum ad valorem.

Skins for morocco, tanned, but unfinished, ten per centum ad valorem.

All manufactures and articles of leather, or of which leather shall be a component part, not specially enumerated or provided for in this act, thirty per centum ad valorem.

Lime, ten per centum ad valorem.

Garden-seeds, except seed of the sugar-beet, twenty per centum ad valorem.

Linseed or flaxseed, twenty cents per bushel of fifty-six pounds; but no drawback shall be allowed on oil-cake made from imported seed.

Marble of all kinds, in block, rough, or squared, sixty-five cents per cubic foot; veined marble, sawed, dressed, or otherwise, including marble slabs and marble paving-tiles, one dollar and ten cents per cubic foot.

All manufactures of marble not specially enumerated or provided for in this act, fifty per centum ad valorem.

Musical instruments of all kinds, twenty-five per centum ad valorem.

Paintings, in oil or water colors, and statuary not otherwise provided for, thirty per centum ad valorem. But the term "statuary," as used in the laws now in force imposing duties on foreign importations, shall be understood to include professional productions of a statuary or of a sculptor only.

Osier, or willow, prepared for basket-makers' use, twenty-five per centum ad valorem.

Papier-maché, manufactures, articles, and wares of, thirty per centum ad valorem.

Pencils of wood filled with lead or other material, and pencils of lead, fifty cents per gross, and thirty per centum ad valorem; pencil-leads, not in wood, ten per centum ad valorem.

Percussion-caps, forty per centum ad valorem.

Philosophical apparatus and instruments, thirty-five per centum ad valorem.

Pipes, pipe-bowls, and all smokers' articles whatsoever, not specially enumerated or provided for in this act, seventy per centum ad valorem; all common pipes of clay, thirty-five per centum ad valorem.

Plaster-of-Paris, when ground or calcined, twenty per centum ad valorem.

Playing-cards, one hundred per centum ad valorem.

Polishing-powders of every description, by whatever name known, including Frankfort black, and Berlin, Chinese, fig, and wash blue, twenty per centum ad valorem.

Precious stones, of all kinds, ten per centum ad valorem.

Rags, of whatever material composed, and not specially enumerated or provided for in this act, ten per centum ad valorem.

Rattans and reeds, manufactured, but not made up into completed articles, ten per centum ad valorem.

Salt, in bags, sacks, barrels, or other packages, twelve cents per one hundred pounds; in bulk, eight cents per one hundred pounds: *Provided*, That exporters of meats, whether packed or smoked, which have been cured in the United States with imported salt, shall, upon satisfactory proof, under such regulations as the Secretary of the Treasury shall prescribe, that such meats have been cured with imported salt, have refunded to them from the Treasury the duties paid on the salt so used in curing such exported meats, in amounts not less than one hundred dollars: *And provided further*, That imported salt in bond may be used in curing fish taken by vessels licensed to engage in the fisheries, and in curing fish on the shores of the navigable waters of the United States, under such regulations as the Secretary of the Treasury shall prescribe; and upon proof that the salt has been used for either of the purposes stated in this proviso, the duties on the same shall be remitted.

Scagliola, and composition tops for tables or for other articles of furniture, thirty-five per centum ad valorem.

Sealing-wax, twenty per centum ad valorem.

Shells, whole or parts of, manufactured, of every description, not specially enumerated or provided for in this act, twenty-five per centum ad valorem.

Stones, unmanufactured or undressed, freestone, granite, sandstone, and all building or monumental stone, except marble, not specially enumerated or provided for in this act, one dollar per ton; and upon stones as above, hewn, dressed, or polished, twenty per centum ad valorem.

Strings: All strings of catgut, or any other like material, other than strings for musical instruments, twenty-five per centum ad valorem.

Tallow, one cent per pound.

Teeth, manufactured, twenty per centum ad valorem.

Umbrella and parasol ribs, and stretcher-frames, tips, runners, handles, or other parts thereof, when made in whole or chief part of iron, steel, or any other metal, forty per centum ad valorem; umbrellas, parasols, and shades, when covered with silk or alpaca, fifty per centum ad valorem; all other umbrellas, forty per centum ad valorem.

Umbrellas, parasols, and sunshades, frames and sticks for, finished or unfinished, not specially enumerated or provided for in this act, thirty per centum ad valorem.

Waste, all not specially enumeratad or provided for in this act, ten per centum ad valorem.

Watches, watch-cases, watch-movements, parts of watches, and watch-materials, not specially enumerated or provided for in this act, twenty-five per centum ad valorem.

Webbing, composed of cotton, flax, or any other materials, not specially enumerated or provided for in this act, thirty-five per centum ad valorem.

THE FREE LIST.

SEC. 2503. The following articles when imported shall be exempt from duty:

CHEMICALS.

Albumen, in any form or condition; lactarine.

Aconite.

Ambergris.

Annotto, roncou, rocou, or orleans, and all extracts of.

Balm of Gilead.

Blood, dried.

Bones, crude, not manufactured, burned, calcined, ground, or steamed.

Bone-dust and bone-ash for manufacture of phosphate and fertilizers.

Carbon, animal, fit for fertilizing only.

Guano, manures, and all substances expressly used for manure.

Musk, crude, in natural pod.

Civet, crude.

Cochineal.

Dyeing or tanning: Articles in a crude state used in dyeing or tanning, not specially enumerated or provided for in this act.

Fish-skins.

Hide-cuttings, raw, with or without hair, and all glue-stock.

Hoofs.

Horns, and parts of horns, unmanufactured, and horn strips and tips.

Ipecac.
Fish-sounds or fish-bladders.
Leather, old scraps.
Leeches.
Rennets, raw or prepared.
Argal, or argol, or crude tartar.
Asafœtida.
Barks, cinchona, or other barks used in the manufacture of quinia.
Brazil paste.
Camphor, crude.
Cassia, cassia-buds, cassia vera, unground.
Charcoal.
Cinnamon, and chips of, unground.
Cloves and clove-stems, unground.
Cocculus indicus.
Cudbear.
Curry and curry-powder.
Cutch.
Divi-divi.
Dragon's blood.
Ergot.
Gambier.
Ginger-root, unground.
Indigo and artificial indigo.
Iodine, crude.
Jalap.
Kelp.
Lac dye, crude, seed, button, stick, and shell.
Lac spirits.
Lemon-juice and lime-juice.
Licorice-root, unground.
Litmus, prepared or not prepared.
Mace.
Madder and munjeet or Indian madder, ground or prepared, and extracts of.
Manna.
Myrobolan.
Orchil, or orchil liquid.
Nutmegs.
Nux vomica.
Ottar of roses.
Salicine.
Oils:
Almond.
Amber, crude and rectified.
Ambergris.
Anise, or anise-seed.
Aniline, crude.
Aspic, or spike lavender.
Bergamot.
Cajeput.
Caraway.
Cassia and cinnamon.
Cedrat.
Camomile.
Citronella or lemon-grass.
Civet.
Fennel.
Jasmine, or jessamine.
Juglandium.
Juniper.
Lavender.
Lemon.
Limes.
Mace.
Neroli, or orange-flower.
Orange.
Palm and cocoanut.
Poppy.
Rosemary, or anthoss.
Sesame or sesamum-seed, or bene.
Thyme or origanum, red or white; valerian.
Pepper, unground, of all kinds.
Pimento, unground.
Saffron and safflower, and extract of, and saffron cake.
Selep, or saloup.
Storax, or styrax.
Turmeric.
Turpentine, Venice.
Valonia.
Vegetable and mineral wax.
Wood-ashes, and lye of, and beet-root ashes.
Ashes used for medicinal, chemical, or manufacturing purposes, not specially enumerated or provided for in this act.
Alizarine, natural or artificial.
Agates, unmanufactured.
Apatite.
Asbestus, unmanufactured.
Arsenic.
Antimony-ore, crude sulphide of.
Arsenic, sulphide of, or orpiment.
Arseniate of aniline.
Baryta, carbonate or witherite.
Bauxite.
Aniline salts or black salts and black tares.
Bromine.
Cadmium.
Calamine.
Cerium.
Cobalt, as metallic arsenic.
Chalk and cliff stone, unmanufactured.
Feldspar.
Cryolite or kryolith.
Iridium.
Kieserite.
Kyanite or cyanite, and kainite.
Lime, citrate of.
Lime, chloride of, or bleaching-powder.
Magnesium.
Magnesite, or native mineral carbonate of magnesia.
Manganese, oxide and ore of.
Mineral waters, all not artificial.
Osmium.
Palladium.
Paraffine.
Phosphates, crude or native, for fertilizing purposes.
Potash, muriate of.
Plaster-of-Paris or sulphate of lime, unground.
Quinia, sulphate of, salts of, and cinchonidia.
Soda, nitrate of, or cubic nitrate.
Strontia, oxide of, and proto-oxide of strontian, and strontianite, or mineral carbonate of strontia.
Sulphur, or brimstone, not specially enumerated or provided for in this act.
Sulphur lac or precipitated.
Tripoli.
Uranium, oxide of, verdigris or subacetate of copper.
Drugs, barks, beans, berries, balsams, buds, bulbs, and bulbous roots and excrescences, such as nutgalls, fruits, flowers, dried fibers; grains, gums and gum-resin; herbs, leaves, lichens, mosses, nuts, roots, and stems; spices, vegetables, seeds aromatic, and seeds of morbid growth; weeds, woods used expressly for dyeing, and dried insects—any of the foregoing, of which are not edible and are in a crude state, and not advanced in value or condition by refining or grinding, or by other process of manufacture, and not specially enumerated or provided for in this act.
Vaccine virus.
Crude minerals, not advanced in value or condition by refining or grinding, or by other process of manufacture, not specially enumerated or provided for in this act.

SUNDRIES.

Aluminium.
Amber beads and gum.
Animals, brought into the United States temporarily, and for a period not exceeding six months, for the purpose of exhibition or competition for prizes offered by any agricultural or racing association; but a bond shall be first given in accordance with the regulations.
Animals specially imported for breeding purposes, shall be admitted free upon proof thereof satisfactory to the Secretary of the Treasury, and under such

regulations as he may prescribe; and teams of animals, including their harness and tackle, and the vehicles or wagons actually owned by persons emigrating from foreign countries to the United States with their families, and in actual use for the purpose of such emigration, shall also be admitted free of duty, under such regulations as the Secretary of the Treasury may prescribe.

Asphaltum and bitumen, crude.

Arrowroot.

Articles imported for the use of the United States, provided that the price of the same did not include the duty.

Bamboo reeds, no further manufactured than cut into suitable lengths for walking-sticks or canes, or for sticks for umbrellas, parasols, or sunshades.

Bamboo, unmanufactured.

Barrels of American manufacture, exported filled with domestic petroleum, and returned empty, under such regulations as the Secretary of the Treasury may prescribe, and without requiring the filing of a declaration at time of export of intent to return the same empty.

Articles the growth, produce, and manufacture of the United States, when returned in the same condition as exported. Casks, barrels, carboys, bags, and other vessels of American manufacture, exported filled with American products, or exported empty and returned filled with foreign products, including shooks, when returned as barrels or boxes; but proof of the identity of such articles shall be made under regulations to be prescribed by the Secretary of the Treasury; and if any of such articles are subject to internal tax at the time of exportation, such tax shall be proved to have been paid before exportation and not refunded.

Bed-feathers and downs.

Bells, broken, and bell-metal broken and fit only to be remanufactured.

Birds, stuffed.

Birds, and land and water fowls.

Bismuth.

Bladders, crude, and all integuments of animals not specially enumerated or provided for in this act.

Bologna sausages.

Bolting-cloths.

Books, engravings, bound or unbound, etchings, maps, and charts, which shall have been printed and manufactured more than twenty years at the date of importation.

Books, maps, and charts imported by authority or for use of the United States or for the use of the Library of Congress; but the duty shall not have been included in the contract of price paid.

Books, maps, and charts specially imported, not more than two copies in any one invoice, in good faith, for the use of any society incorporated or established for philosophical, literary, or religious purposes, or for the encouragement of the fine arts, or for the use or by order of any college, academy, school, or seminary of learning in the United States.

Books, professional, of persons arriving in the United States.

Books, household effects, or libraries, or parts of libraries, in use, of persons or families from foreign countries, if used abroad by them not less than one year, and not intended for any other person or persons, nor for sale.

Breccia, in blocks or slabs.

Brime.

Brazil pebbles for spectacles, and pebbles for spectacles, rough.

Bullion, gold and silver.

Burgundy pitch.

Burr-stone, in blocks, rough or unmanufactured, and not bound up in millstones.

Cabinets of coins, medals, and all other collections of antiquities.

Castor or castoreum.

Catgut strings, or gut-cord, for musical instruments.

Catgut or whip-gut, unmanufactured.

Coal, anthracite.

Coal-stores of American vessels, but none shall be unloaded.

Cobalt, ore of.

Cocoa, or cacao, crude, and fiber, leaves, and shells.

Coffee.

Coins, gold, silver, and copper.

Coir and coir yarn.

Copper, old, taken from the bottom of American vessels compelled by marine disaster to repair in foreign ports.

Copper, when imported for the United States Mint.

Coral, marine, unmanufactured.

Cork-wood, or cork-bark, unmanufactured.

Cotton.

Curling-stones, or quoits.

Cuttle-fish bone.

Diamonds, rough or uncut, including glaziers' diamonds.

Diamond dust or bort.

Dyeing or tanning articles, in a crude state, used in dyeing or tanning, not specially enumerated or provided for in this act.

Eggs.

Esparto or Spanish grass, and other grasses, and pulp of, for the manufacture of paper.

Emery-ore.

Fans, common palm-leaf.

Farina.

Fashion-plates, engraved on steel or on wood, colored or plain.

Felt, adhesive, for sheathing vessels.

Fibrin, in all forms.

Fire-wood.

Fish, fresh, for immediate consumption.

Fish, for bait.

Flint, flints, and ground flint-stones.

Fossils.

Fruit-plants, tropical and semi-tropical, for the purpose of propagation or cultivation.

Fruits, green, ripe, or dried, not specially enumerated or provided for in this act.

Furs, undressed.

Fur-skins of all kinds, not dressed in any manner.

Glass, broken pieces, and old glass which can not be cut for use, and fit only to be remanufactured.

Glass-plate, or disks unwrought, for use in the manufacture of optical instruments.

Goat-skins, raw.

Gold-beaters' molds, and gold-beaters' skins.

Gold-size.

Grease, for use as soap-stock only, not specially enumerated or provided for.

Gunny-bags, and gunny-cloth, old or refuse, fit only for remanufacturing.

Gut and worm-gut, manufactured or unmanufactured.

Guts, salted.

Gutta-percha, crude.

Hair, horse or cattle, and hair of all kinds, cleaned or uncleaned, drawn or undrawn, but unmanufactured, not specially enumerated or provided for in this act; of hogs, curled for beds and mattresses, and not fit for bristles.

Hide-rope.

Hides, raw or uncured, whether dry, salted, or pickled, and skins, except sheep-skins with the wool on, Angora goat-skins, raw, without the wool, unmanufactured, asses' skins, raw or unmanufactured.

Hones and whetstones.

Hop-roots, for cultivation.

Hop-poles.

Ice.

India-rubber, crude, and milk of.

India malacca joints, not further manufactured than cut into suitable lengths for the manufactures into which they are intended to be converted.

Ivory, and vegetable ivory, unmanufactured.

Jet, unmanufactured.

Joss-stick, or joss-light.
Junk, old.
Lava, unmanufactured.
Life-boats and life-saving apparatus, specially imported by societies incorporated or established to encourage the saving of human life.
Lithographic stones, not engraved.
Loadstones.
Logs, and round, unmanufactured timber, not specially enumerated or provided for in this act, and ship-timber, and ship-planking.
Maccaroni and vermicelli.
Magnets.
Manuscripts.
Marrow, crude.
Marsh-mallows.
Medals of gold, silver, or copper.
Meerschaum, crude or raw.
Mica and mica waste.
Models of inventions and other improvements in the arts; but no article or articles shall be deemed a model or improvements which can be fitted for use.
Moss, sea-weeds, and all other vegetable substances used for beds and mattresses.
Newspapers and periodicals.
Nuts, cocoa, and Brazil or cream.
Oakum.
Oil-cake.
Oil, spermaceti, whale, and other fish oils of American fisheries, and all other articles the produce of such fisheries.
Olives, green or prepared.
Orange and lemon peel, not preserved, candied, or otherwise prepared.
Ores, of gold and silver.
Palm-nuts and palm-nut kernels.
Paper stock, crude, of every description, including all grasses, fibers, rags of all kinds, other than wool, waste, shavings, clippings, old paper, rope-ends, waste rope, waste bagging, gunny-bags, gunny-cloth, old or refuse, to be used in making, and fit only to be converted into paper, and unfit for any other manufacture, and cotton waste, whether for paper stock or other purposes.
Parchment.
Pearl, mother of.
Personal and household effects, not merchandise, of citizens of the United States dying abroad.
Pewter and Britannia metal, old, and fit only to be remanufactured.
Philosophical and scientific apparatus, instruments, and preparations, statuary, casts of marble, bronze, alabaster, or plaster-of-Paris, paintings, drawings, and etchings, specially imported in good faith for the use of any society or institution incorporated or established for religious, philosophical, educational, scientific, or literary purposes, or encouragement of the fine arts, and not intended for sale.
Plants, trees, shrubs, and vines of all kinds not otherwise provided for, and seeds of all kinds, except medicinal seeds not specially enumerated or provided for in this act.
Plants, trees, shrubs, roots, seed-cane, and seeds imported by the Department of Agriculture or the United States Botanical Garden.
Platina, unmanufactured.
Platinum, unmanufactured, and vases, retorts, and other apparatus, vessels, and parts thereof, for chemical uses.
Plumbago.
Polishing-stones.
Pulu.
Pumice and pumice-stone.
Quills, prepared or unprepared.
Railroad-ties, of wood.
Rattans and reeds, unmanufactured.
Regalia and gems, statues, statuary, and specimens of sculpture, where specially imported in good faith for the use of any society incorporated or established for philosophical, literary, or religious purposes, or for the encouragement of the fine arts, or for the use or by order of any college, academy, school, seminary of learning, or public library in the United States.
Root-flour.
Rotten-stone.
Sago, sago crude, and sago-flour.
Sauerkraut.
Sausage-skins.
Sea-weed, not otherwise provided for.
Seed of the sugar-beet.
Shark-skins.
Shells of every description, not manufactured.
Shingle-bolts and stave-bolts, provided that heading-bolts shall be held and construed to be included under the term stave-bolts.
Handle-bolts.
Shrimps, or other shell-fish.
Silk, raw, or as reeled from the cocoon, but not doubled, twisted, or advanced in manufacture in any way.
Silk cocoons and silk waste.
Silk-worms' eggs.
Skeletons, and other preparations of anatomy.
Skins, dried, salted, or pickled.
Snails.
Soap-stocks.
Sodium.
Sparterre, for making or ornamenting hats.
Specimens of natural history, botany, and mineralogy, when imported for cabinets, or as objects of taste or science, and not for sale.
Spunk.
Spurs and stilts, used in the manufacture of earthen, stone, or crockery ware.
Straw, unmanufactured.
Sugar of milk.
Sweepings of silver and gold.
Tamarinds.
Tapioca, cassava, or cassada.
Tea.
Tea-plants.
Teasels.
Teeth, unmanufactured.
Terra alba, aluminous.
Terra japonica.
Tin-ore, bars, blocks, or pigs, grain or granulated.
Tonquin, Tonqua, or Tonka beans.
Tortoise and other shells, unmanufactured.
Turtles.
Types, old, and fit only to be remanufactured.
Umbrella-sticks, crude, to wit, all partridge, hair-wood, pimento, orange, myrtle, and all other sticks and canes in the rough, or no further manufactured than cut into lengths suitable for umbrella, parasol, or sunshade sticks or walking-canes.
Vellum.
Wafers, unmedicated.
Wearing apparel, in actual use, and other personal effects (not merchandise), professional books, implements, instruments, and tools of trade, occupation, or employment of persons arriving in the United States. But this exemption shall not be construed to include machinery or other articles imported for use in any manufacturing establishment, or for sale.
Whalebone, unmanufactured.
Woods, poplar, or other woods, for the manufacture of paper.
Woods, namely, cedar, lignum-vitæ, lancewood, ebony, box, granadilla, mahogany, rose-wood, satin-wood, and all cabinet-woods, unmanufactured.
Works of art, painting, statuary, fountains, and other works of art, the production of American artists. But the fact of such production must be verified by the certificate of a consul or minister of the United States indorsed upon the written declaration of the artist; paintings, statuary, fountains, and other works of art, imported expressly for presentation to national institutions, or to any State, or to any municipal corporation, or religious corporation or society.

Yams.
Zaffer.

SEC. 2504. Whenever any vessel laden with merchandise in whole or in part subject to duty has been sunk in any river, harbor, bay, or waters subject to the jurisdiction of the United States, and within its limits, for the period of two years, and is abandoned by the owner thereof, any person who may raise such vessel shall be permitted to bring any merchandise recovered therefrom into the port nearest to the place where such vessel was so raised, free from the payment of any duty thereupon, and without being obliged to enter the same at the custom-house; but under such regulations as the Secretary of the Treasury may prescribe.

SEC. 2505. The produce of the forests of the State of Maine upon the Saint John river and its tributaries, owned by American citizens, and sawed or hewed in the province of New Brunswick by American citizens, the same being unmanufactured in whole or in part, which is now admitted into the ports of the United States free of duty, shall continue to be so admitted under such regulations as the Secretary of the Treasury shall, from time to time, prescribe.

SEC. 2506. The produce of the forests of the State of Maine upon the Saint Croix river and its tributaries, owned by American citizens, and sawed in the province of New Brunswick by American citizens, the same being unmanufactured in whole or in part, and having paid the same taxes as other American lumber on that river, shall be admitted into the ports of the United States free of duty, under such regulations as the Secretary of the Treasury shall, from time to time, prescribe.

SEC. 2507. Machinery for repair may be imported into the United States without payment of duty, under bond, to be given in double the appraised value thereof, to be withdrawn and exported after said machinery shall have been repaired; and the Secretary of the Treasury is authorized and directed to prescribe such rules and regulations as may be necessary to protect the revenue against fraud, and secure the identity and character of all such importations when again withdrawn and exported, restricting and limiting the export and withdrawal to the same port of entry where imported, and also limiting all bonds to a period of time of not more than six months from the date of the importation.

SEC. 2508. All paintings, statuary, and photographic pictures imported into the United States for exhibition by any association duly authorized under the laws of the United States, or of any State, for the promotion and encouragement of science, art, or industry, and not intended for sale, shall be admitted free of duty, under such regulations as the Secretary of the Treasury shall prescribe. But bonds shall be given for the payment to the United States of such duties as may be imposed by law upon any and all of such articles as shall not be re-exported within six months after such importation.

SEC. 2509. All works of art, collections in illustration of the progress of the arts, science, or manufactures, photographs, works in terra-cotta, Parian, pottery, or porcelain, and artistic copies of antiquities in metal or other material, hereafter imported in good faith for permanent exhibition at a fixed place by any society or institution established for the encouragement of the arts or science, and not intended for sale, nor for any other purpose than is hereinbefore expressed, and all such articles imported as aforesaid, now in bond, and all like articles imported in good faith by any society or association for the purpose of erecting a public monument, and not for sale, shall be admitted free of duty, under such regulations as the Secretary of the Treasury may prescribe: *Provided*, That the parties importing articles as aforesaid shall be required to give bonds, with sufficient sureties, under such rules and regulations as the Secretary of the Treasury may prescribe, for the payment of lawful duties which may accrue should any of the articles aforesaid be sold, transferred, or used contrary to the provisions and intent of this act.

SEC. 2510. All lumber, timber, hemp, manila, wire rope, and iron and steel rods, bars, spikes, nails, and bolts, and copper and composition metal which may be necessary for the construction and equipment of vessels built in the United States for foreign account and ownership or for the purpose of being employed in the foreign trade, including the trade between the Atlantic and Pacific ports of the United States, after the passage of this act, may be imported in bond, under such regulations as the Secretary of the Treasury may prescribe; and upon proof that such materials have been used for such purpose, no duties shall be paid thereon. But vessels receiving the benefit of this section shall not be allowed to engage in the coastwise trade of the United States more than two months in any one year, except upon the payment to the United States of the duties on which a rebate is herein allowed: *Provided*, That vessels built in the United States for foreign account and ownership shall not be allowed to engage in the coastwise trade of the United States.

SEC. 2511. All articles of foreign production needed for the repair of American vessels engaged exclusively in foreign trade may be withdrawn from bonded warehouses free of duty, under such regulations as the Secretary of the Treasury may prescribe.

SEC. 2512. That no duty shall be levied or collected on the importation of peltries brought into the Territories of the United States by Indians, nor on the proper goods and effects, of whatever nature, of Indians passing or repassing the boundary-line aforesaid, unless the same be goods in bales or other large packages unusual among Indians, which shall not be considered as goods belonging to Indians, nor be entitled to the exemption from duty aforesaid.

SEC. 2513. There shall be levied, collected, and paid on the importation of all raw or unmanufactured articles, not herein enumerated or provided for, a duty of ten per centum ad valorem; and all articles manufactured, in whole or in part, not herein enumerated or provided for, a duty of twenty per centum ad valorem.

SEC. 7. That sections twenty-nine hundred and seven and twenty-nine hundred and eight of the Revised Statutes of the United States and section fourteen of the act entitled "An act to amend the customs revenue laws, and to repeal moieties," approved June twenty-second, eighteen hundred and seventy-four, be and the same are hereby repealed, and hereafter none of the charges imposed by said sections or any other provisions of existing law shall be estimated in ascertaining the value of goods to be imported, nor shall the value of the usual and necessary sacks, crates, boxes, or coverings of any kind be estimated as part of their value in determining the amount of duties for which they are liable: *Provided*, That if any packages, sacks, crates, boxes, or coverings of any kind shall be of any material or form designed to evade duties thereon, or designed for use otherwise than in the bona fide transportation of goods to the United States, the same shall be subject to a duty of one hundred per centum ad valorem upon the actual value of the same.

SEC. 8. That section twenty-eight hundred and forty-one of the Revised Statutes of the United States is hereby amended and shall on and after the first day of July, eighteen hundred and eighty-three, be as follows:

SEC. 2841. Whenever merchandise imported into the United States is entered by invoice, one of the following oaths, according to the nature of the case, shall be administered by the collector of the port, at the time of entry, to the owner, importer, consignee, or agent: *Provided*, That if any of the invoices or bills of lading of any merchandise imported in said vessel, which should otherwise be embraced in said entry, have not been received at the date of the entry,

the affidavit may state the fact, and thereupon such merchandise of which the invoices or bills of lading are not produced shall not be included in such entry, but may be entered subsequently.

OATH OF CONSIGNEE, IMPORTER, OR AGENT.

I, ——— ———, do solemnly and truly swear (or affirm) that the invoice and bill of lading now presented by me to the collector of ——— are the true and only invoice and bill of lading by me received, of goods, wares, and merchandise imported in the ———, whereof ——— ——— is master, from ———, for account of any person whomsoever for whom I am authorized to enter the same; that the said invoice and bill of lading are in the state in which they were actually received by me, and that I do not know nor believe in the existence of any other invoice or bill of lading of the said goods, wares, and merchandise; that the entry now delivered to the collector contains a just and true account of the said goods, wares, and merchandise, according to the said invoice and bill of lading; that nothing has been, on my part, nor to my knowledge, on the part of any other person, concealed or suppressed, whereby the United States may be defrauded of any part of the duty lawfully due on the said goods, wares, and merchandise; that the said invoice and the declaration therein are in all respects true, and were made by the person by whom the same purports to have been made, and that if, at any time hereafter, I discover any error in the said invoice, or in the account now rendered of the said goods, wares, and merchandise, or receive any other invoice of the same, I will immediately make the same known to the collector of this district. And I do further solemnly and truly swear (or affirm) that, to the best of my knowledge and belief (insert the name and residence of the owner or owners), is (or are) the owner (or owners) of the goods, wares, and merchandise mentioned in the annexed entry; that the invoice now produced by me exhibits the actual cost (if purchased) or fair market value (if otherwise obtained) at the time or times and place or places when or where procured (as the case may be), of the said goods, wares, and merchandise, including all cost for finishing said goods, wares, and merchandise to their present condition, and no other or different discount, bounty, or drawback but such as has been actually allowed on the same.

OATH OF OWNER IN CASES WHERE MERCHANDISE HAS BEEN ACTUALLY PURCHASED.

I, ——— ———, do solemnly and truly swear (or affirm) that the entry now delivered by me to the collector of ——— contains a just and true account of the goods, wares, and merchandise imported by or consigned to me, in the ———, whereof ——— ——— is master, from ———; that the invoice which I now produce contains a just and faithful account of the actual cost of the said goods, wares, and merchandise, including all cost of finishing said goods, wares, and merchandise to their present condition, and no other discount, drawback, or bounty but such as has been actually allowed on the same; that I do not know or believe in the existence of any invoice or bill of lading other than those now produced by me, and that they are in the state in which I actually received them. And I further solemnly and truly swear (or affirm) that I have not in the said entry or invoice concealed or suppressed anything whereby the United States may be defrauded of any part of the duty lawfully due on the said goods, wares, and merchandise; that the said invoice and the declaration thereon are in all respects true, and were made by the person by whom the same purports to have been made; and that if at any time hereafter I discover any error in the said invoice or in the account now produced of the said goods, wares, and merchandise, or receive any other invoice of the same, I will immediately make the same known to the collector of this district.

OATH OF MANUFACTURER OR OWNER IN CASES WHERE MERCHANDISE HAS NOT BEEN ACTUALLY PURCHASED.

I, ——— ———, do solemnly and truly swear (or affirm) that the entry now delivered by me to the collector of ——— contains a just and true account of goods, wares, and merchandise imported by or consigned to me in the ———, whereof ——— ——— is master, from ———; that the said goods, wares, and merchandise were not actually bought by me, or by my agent, in the ordinary mode of bargain and sale, but that, nevertheless, the invoice which I now produce contains a just and faithful valuation of the same, at their fair market value, at the time or times and place or places when and where procured for my account (or for account of myself or partners); that the said invoice contains also a just and faithful account of all the cost for finishing said goods, wares, and merchandise to their present condition, and no other discount, drawback, or bounty but such as has been actually allowed on the said goods, wares, and merchandise; that the said invoice and the declaration thereon are in all respects true, and were made by the person by whom the same purports to have been made; that I do not know nor believe in the existence of any invoice or bill of lading other than those now produced by me, and that they are in the state in which I actually received them. And I do further solemnly and truly swear (or affirm) that I have not in the said entry or invoice concealed or suppressed anything whereby the United States may be defrauded of any part of the duty lawfully due on the said goods, wares, and merchandise, and that if at any time hereafter I discover any error in the said invoice, or in the account now produced of the said goods, wares, and merchandise, or receive any other invoice of the same, I will immediately make the same known to the collector of this district.

SEC. 9. If upon the appraisal of imported goods, wares, and merchandise, it shall appear that the true and actual market value and wholesale price thereof, as provided by law, can not be ascertained to the satisfaction of the appraiser, whether because such goods, wares, and merchandise be consigned for sale by the manufacturer abroad to his agent in the United States, or for any other reason, it shall then be lawful to appraise the same by ascertaining the cost or value of the materials composing such merchandise, at the time and place of manufacture, together with the expense of manufacturing, preparing, and putting up such merchandise for shipment, and in no case shall the value of such goods, wares, and merchandise be appraised at less than the total cost or value thus ascertained.

SEC. 10. That all imported goods, wares, and merchandise which may be in the public stores or bonded warehouses on the day and year when this act shall go into effect, except as otherwise provided in this act, shall be subjected to no other duty upon the entry thereof for consumption than if the same were imported respectively after that day; and all goods, wares, and merchandise remaining in bonded warehouses on the day and year this act shall take effect, and upon which the duties shall have been paid, shall be entitled to a refund of the difference between the amount of duties paid and the amount of duties said goods, wares, and merchandise would be subject to if the same were imported respectively after that date.

SEC. 11. Nothing in this act shall in any way change or impair the force or effect of any treaty between the United States and any other government, or any laws passed in pursuance of or for the execution of any such treaty, so long as such treaty shall remain in force in respect of the subjects embraced in this act; but whenever any such treaty, so far as the same respects said subjects, shall expire or be otherwise terminated, the provisions of this act shall be in force in all respects in the same manner and to the same extent as if no such treaty had existed at the time of the passage hereof.

SEC. 12. That in respect of all articles mentioned

in Schedule E of section six of this act, this act shall take effect on and after the first day of June, anno Domini eighteen hundred and eighty-three.

SEC. 13. That the repeal of existing laws, or modifications thereof embraced in this act shall not affect any act done, or any right accruing or accrued, or any suit or proceeding had or commenced in any civil cause, before the said repeal or modifications; but all rights and liabilities under said laws shall continue and may be enforced in the same manner as if said repeal or modifications had not been made; nor shall said repeal or modifications in any manner affect the right to any office, or change the term or tenure thereof. Any offenses committed, and all penalties or forfeitures or liabilities incurred under any statute embraced in or changed, modified, or repealed by this act may be prosecuted and punished in the same manner and with the same effect as if this act had not been passed. All acts of limitation, whether applicable to civil causes and proceedings or to the prosecution of offenses, or for the recovery of penalties or forfeitures embraced in or modified, changed, or repealed by this act, shall not be affected thereby; and all suits, proceedings, or prosecutions, whether civil or criminal, for causes arising or acts done or committed prior to the passage of this act, may be commenced and prosecuted within the same time and with the same effect as if this act had not been passed.

Amend the title so as to read, "An act to reduce internal-revenue taxation, and for other purposes."

The discussion of this measure in both Houses was so extended that any abstract of it would be out of the question. The debate on the adoption of the conference committee's report was brief, and mainly confined to the Democrats. The exceptions taken to the report, as deviating from the policy of the Senate bill, were set forth by Mr. Beck, of Kentucky, whose argument was as follows:

"I will speak of iron-ore first, because it illustrates more prominently and plainly than anything else what I desire to prove as to the outrageous character of this report. When the Senate of the United States—I will begin with our own action—had this question under discussion, many of the most intelligent men of the country, notably Hon. Abram S. Hewitt, laid facts before the country and before Congress to show that it was indispensable to the great iron industries of this country, as imported iron-ore had many qualities that iron-ore found in this country does not possess, that it should be imported free of duty, as when so imported it is used for the purpose of mixing with our own native ore, the foreign ore being low in phosphorus and there being a great deal of phosphorus in our own. He proved to my satisfaction that it would extend and cheapen the manufacture of our iron products and increase the uses to which our native ores could be applied.

"Earnest efforts were made on the part of some Senators, notably the Senator from Virginia (Mr. Mahone), to increase the duty on ore above 50 cents, which the commission said was the true rate, which the Senate committee said was the true rate, which the Senate as in Committee of the Whole determined was the true rate, and voted down upon the yeas and nays by overwhelming majorities every effort to increase it. The House of Representatives, with Mr. Kelley at its head, I suppose I may now speak of the action of the House, as their acts are freely discussed, and I suppose their action is under review, said 50 cents per ton was the true rate of taxation on iron-ore. There was no disagreement between the House of Representatives and the Senate as to iron-ore.

"No committee of conference, dealing justly with both Houses and representing the expressed will of both Houses of Congress, could decently assume, when the two Houses had disagreed or had agreed, to change the rate of taxation upon which they had agreed. Yet this conference committee so called, acting, as I think, in defiance of the order of the Senate and in plain violation of their known duty, increased the duty on iron-ore, that both Houses had agreed should not be taxed more than 50 cents a ton, to 75 cents a ton, or 50 per cent. increase on the tax agreed on; and what is the effect of that usurpation of unwarranted authority? One case illustrates the whole—577,118 tons of iron-ore were imported last year; by adding 25 cents a ton to the cost of it the conference have added to the tax on that raw material $144,279.50, assuming that the same quantity will be imported.

"Why was this done? By what authority? Obeying whose orders? What disagreeing vote did they adjust? The House had voted 50 cents; the Senate had voted 50 cents; they had agreed. The conferees arbitrarily overthrew what both Houses had agreed upon, and added a tax upon the importations of this raw material of $144,279.50, and we are to be told that we must hurry this report through because of the late hour of the session, and allow that outrage to be perpetrated without question, and without being even told by the chairman of the committee why it was done; indeed, he carefully concealed the fact, merely saying that there was no material increase of taxation in any of the changes they had made, when there is 50 per cent. increase of duty upon the leading article out of which the iron of this country is made, and that was done by him and his associates in defiance of the deliberate action of the House and of the still more deliberate action of the Senate, all of which was well known to the conferees.

"An effort was next made to make the tax a dollar a ton. That was voted down; 85 cents was tried; 75 cents was tried; 60 cents was tried. At a dollar, if I mistake not, the vote was 11 in favor to 37 against it. Then the motion was made to make it 75 cents, and 15 voted in the affirmative and 34 in the negative upon a call of the yeas and nays. Sixty cents was tried, and the Senate persistently refused to increase it above 50 cents, and the House upon a vote refused to increase it above 50 cents a ton. The proposition to increase the tax was tried again on the 16th day of February in the Senate, on the motion of the Senator from Michigan (Mr. Conger); he

sought to make the duty 85 cents. The propriety of the increase was reargued and every effort was made upon a call of the yeas and nays to tax iron-ore higher than 50 cents a ton. It was again voted down by an overwhelming majority.

"In view of all these undoubted facts I ask the Senate, and I intend to appeal to the country even from the Senate, what right had that body of men who were sitting in secret council, authorized only to act upon disagreeing votes between the two Houses and to sustain the action of the Senate by all honorable means, to consider the tax on iron-ore, on which the House and Senate had agreed, and raise the duty on it 50 per cent., and then come here without even deigning to state the facts and tell us that we must adopt the report they have made, right or wrong—*fas et nefas*—or we are obstructors of public business?

"I aver, and the silence of the four or the five or whatever the number who agreed to this report gives consent to the truth of my statement, that they have imposed an increased tax of 50 per cent. on all the iron-ore that comes into the country beyond what either the House or the Senate had imposed, and when the House and Senate were agreed.

"If these admitted facts do not condemn this whole report and stamp it as a thing absolutely unfit for the Senate to indorse, I do not think any argument of mine will. There is not a Senate conferee who will venture to rise in his place and either justify it or excuse it. It stands confessed as a plain violation of their known duty.

"Passing from that, though one illustrates all, look at the action of the conference committee relative to glassware, one of the first important things touched in the report. Let me examine their action in that regard.

"This is the language of the present law:

"Earthen, stone, or crockery ware, white, glazed, edged, printed, painted, dipped, or cream-colored, not otherwise provided for, 40 per cent.

"That, of course, relates to earthen, stone, and crockery ware. The plainest character of designs on paper can be painted and pasted on plain crockery, and when placed in the furnace the paper is burned out and the paint or print remains. That is the whole process; there is no skill or intellect involved; it is done by the plainest, simplest process; the designs are painted by the hundred or thousand on pieces of paper and burned in; the paper, as I said, burns off and leaves the paint or print. Yet the conference committee, without any reason in the world that I can see, have taken that class of cheap goods out of the schedule where the Senate placed them at 50 per cent., which is 25 per cent. increase on the duty under the present law, because it was said we had given importers the benefit of a reduction of taxes, by taking the duty off the packages, which on the cheapest classes of goods amount to, say, 10 per cent. Our conferees have taken these goods from the schedule of 50 per cent. and placed them in the schedule of 60 per cent., an increase of 50 per cent. on the present rate, along with china, porcelain, parian, and bisque ware, and the other decorations that ornament the mantel-pieces of the rich.

"I have never heard the revenues of the Government spoken of as being worthy of consideration by any gentleman on the other side during this whole discussion. I have never heard the rights of the consumers of this country spoken of as being worthy of consideration while extravagant taxes were being imposed. The whole question has been, How much can the iron-men afford to take off; how much will the cotton schedule, how much will the woolen schedule bear reduction, or shall they be increased above present rates? And when Senators examine into the pretended reductions, they will prove to be increases in nine cases out of ten, all assertions to the contrary notwithstanding. The swarms of lobbyists who are now here and have been for weeks, are all begging for more bounty, more protection, or rather more taxation on the people to enrich themselves. These are the plates [exhibiting] that the conference committee have put up to a 60 per cent. tax after the Senate had peremptorily refused to consider all the propositions urged when we had these matters under consideration.

"Yet the chairman tells us that they are making this increase of taxation in the interest of economy, carefully refraining from stating the facts, and frowning upon any attempt to expose their acts as improper and factious opposition. Of that plain crockery-ware, as you will observe by looking over the schedule that we have before us, furnished by the Treasury Department, there were goods imported last year to the value of $4,400,000, at 40 per cent. The duty which the people paid on them was $1,775,294. By the provision now proposed on the same amount of importation at 60 per cent. they will have to pay $2,662,941, or an increase of $887,648 over the present high war tariff that everybody says ought to be reduced, and they will have to pay $443,824 by this change of rate on the same importations more than they would have to pay under the bill as it passed the Senate at 50 per cent. That is called a slight modification, a very slight increase, so insignificant that the chairman seemed to think that the report should be concurred in without a word. He did not even think that it was worth while to tell us what he and his co-conferees had done.

"Turn to another change in the glass schedule and see what the autocrats of the conference have done. We struggled over the question of taxing bottles time and again, first in Committee of the Whole, and next in the Senate; that question was brought up in season and out of season. We settled it at 30 per cent., and provided that bottles in which apollinaris and other natural mineral waters came

should be free. No man ventured to make an argument worth calling such against that provision. It was admitted that when a bottle once reaches this country, whether it has apollinaris water in it or anything else, it competes when it reaches here with the domestic manufacture of bottles precisely to the same extent whether it comes free or pays a tax. We all agreed that if the people wanted these waters they had a right to have them.

"We thought there were some things the people ought to have without being taxed to death, and that the water of the springs of the world that they might prefer as conducive to their health or their pleasure ought not to be taxed; all agreed that was right. Yet this conference committee, this secret conclave—they were in no proper sense conferees, yet I shall speak of them as such—not only imposed a heavy tax upon all the bottles in which apollinaris and other waters come, as you will see by turning over to the free-list, but they increased the tax upon all the other bottles used in this country from the present tax of 30 per cent. to about 100 per cent., although we had voted down the proposition to do so, as I have stated, every time it was offered, both in committee and in the Senate, until every advocate of the increased tax had given it up. Yet these gentlemen secretly and wrongfully bring it back with the tax of 100 per cent. on these things. I regard their action as an outrage, in flagrant disregard of the known will of Congress.

"The Milwaukee brewer who bottles 100,000 barrels annually, consumes almost as many bottles as are imported into the United States in a year. The Senate of the United States refused to increase the tax above 30 per cent. But our would-be masters, disregarding our will, have increased it to a cent a pound, or 100 per cent. upon all that class of bottles in the interest of the bottle-makers, adding to the tax paid by a single brewer who bottles 100,000 barrels of beer annually over $200,000, in order to put the money into the pockets of some of their friends. They have, I repeat, in plain violation of the orders of the Senate, placed the bottles in which apollinaris, vichy, and other natural waters are imported, on the taxable list, and whether they will impose a charge on them of one cent a pound or whether they will be taxed at 30 per cent. ad valorem, will depend upon a careful construction of the conflicting clauses contained in the conference report, which, if Senators will read, they will see were inserted, if not for the purpose, certainly with the effect of deceiving and of requiring the Treasury Department to give the manufacturer here the benefit of the doubt and thus force the officials to decide that they shall pay 100 per cent.; because after the long and apparently successful struggle that we made not to allow the highest duty to be imposed in doubtful cases, the conferees provide—and I believe that was the point at which the Senator from Delaware and myself left the conference, it being the first important change in our tariff amendment, as there was no question in regard to the internal-revenue taxes which both Houses had acted on, and as to which no difference of opinion was developed, I suppose the relief given there is relied on to carry through on the single vote to which we are now confined all the atrocities of the tariff amendments:

"If two or more rates of duty should be applicable to any imported article, it shall be classified for duty under the highest of such rates.

"They have one rate of 30 per cent. for bottles filled; that is, they shall pay 30 per cent. ad valorem in addition to the duties on the contents. Yet the conference committee insert another amendment in these words:

"All glass bottles and decanters, and other like vessels of glass, shall, if filled, pay the same rates of duty, in addition to any duty chargeable on the contents, as if not filled, except as in this act otherwise specially provided for.

"That is one cent a pound, or 100 per cent. ad valorem on common bottles. One of these conflicting provisions in regard to bottles makes them pay 30 per cent. if filled, and another provision makes them pay the same duty whether filled or not. By the general clause as to the highest rate in doubtful cases they will be required to pay 100 per cent., in my opinion. If that is not a trick I do not know what to call it. I do not intend to charge any Senator with trickery, but the provision they have made that whenever there is a doubt, or it can be construed that there are two or more rates applicable to the article it shall pay the highest, these two conflicting provisions will give the officials a chance to tax it at the highest rate.

"I will speak next of pig-iron. The Senate of the United States had a long and earnest discussion as to the propriety of a general reduction of tax in the iron schedule, as all agreed that reasonably cheap pig-iron was indispensable to enable the people to obtain cheap finished products. We agreed upon $6 per ton as being the proper rate to charge on pig-iron, with a like rate on scrap-iron, both steel and cast. It was debated long and ably in all its aspects. I have the debate before me. I had expected to read part of it, but I find that I can not. We agreed upon a duty of $6 a ton. After a while, when we had gone through the bill in Committee of the Whole, the Senator from Ohio threatened to vote against the bill, and to defeat all our efforts at giving the people any relief in internal or tariff taxation unless we increased the tax on pig-iron and upon such articles in the iron schedule as he demanded. I will read from his speech before I close. He read telegrams from Hon. Henry B. Payne, of Cleveland, and others, telling him to vote against the bill, and he said he would obey their orders unless we obeyed his.

"I repeat that the Senator from Ohio threatened the Senate with the defeat of the whole bill. After all sorts of efforts, and when he had drawn the party whip over the heads of his followers with an audacity I had never seen equaled in any public assembly, by threats and every other means that a great, bold parliamentary leader can assert over the men who look up to him, he finally succeeded in having $6.50 imposed as the tax upon pig-iron.

"That was the last cent he could obtain by promises, flattery, or threats, but his resources were not exhausted. The conference committee met, and under the lead of the Senator from Ohio, I may safely assume, at his dictation, they have imposed a tax upon pig-iron of $6.72 per ton and insist that we must accept it. What is the effect of that? Of scrap and pig iron 763,761 tons were imported last year. Seventy-two cents increase over the $6 that the Senate had agreed upon until the Senator from Ohio drove his party up to an increase, would be $549,905. Twenty-two cents per ton—being the difference between this report and $6.50, the highest point to which the Senator could induce the Senate to advance after all the coercion he could impose upon his followers—22 cents per ton on 763,761 tons is $169,027 additional tax that this conference committee has placed upon pig-iron; and we all know that we have to accept that report as a whole or reject it.

"What next? Take railway-bars. I want the conferees on the part of the Senate to tell the Senate why they have imposed the tax they have in the report they present for our acceptance. Let me show what they have done. This is another undoubted usurpation of power by the conference committee. Steel railway-bars were put by the Senate at seven tenths of one cent a pound when weighing more than twenty-five pounds to the yard. That is $15.68 per ton. The House voted on that question also; if we are to look to the House, it imposed a tax of $15 per ton on rails. The House voted for a tax of 68 cents a ton lower than the Senate on steel railway-bars, the House bill providing for a duty of $15 and the Senate bill $15.68 a ton. Bear these facts in mind.

"What did the conferees do? They have imposed a tax upon steel railway-bars of $17 per ton. The Senate had imposed a tax of $15.68, the House $15. The conferees, purporting to meet for the purpose of reconciling the disagreeing votes between the two Houses, imposed a tax on that article of $17 per ton, or $2 more than the House had imposed upon it and $1.32 more than the Senate had imposed upon it. I again ask any of them to rise now and tell the Senate by what authority they seek to impose a higher tax on this important article than either House imposed. I charge them with a gross violation of their power and a usurpation of authority not granted to them in doing so.

"The amount of importation of that class of steel rails during the last year was about 200,000 tons. The report of the conference as to the tax upon that article is an increase of $400,000 on last year's imports over what the House had agreed to impose upon it, and of $264,000 over what the Senate had imposed upon it; and yet under pretense of reconciling the disagreeing votes of the two Houses they imposed an additional tax upon the people of $400,000 more than the House of Representatives had demanded and $264,000 more than the Senate had said ought to be imposed. If that is not an outrage upon the rights of this people, if it is not a violation of the known duty of the committee, while pretending to reconcile the disagreeing or conflicting votes between the two Houses, by placing a tax higher than either House had suggested, then I do not understand what it is, and can hardly characterize it as I ought in parliamentary language.

"Again, the Senate agreed upon a duty on bar-iron not less than three quarters of an inch in diameter and square iron not more than three quarters of an inch square of $20 per ton, and upon round iron less than three quarters of an inch square of $22 per ton; the conferees have increased that tax from $20 per ton in the one instance to $22.40 per ton, and in the other from $22 a ton to $24.64 per ton; the original rates were fixed by the Senate with the aid and by the vote of the Senator from Ohio, one of the conferees. We had a right to suppose that he would adhere to his own votes, yet after so voting and advocating the lower rates, saying that his friend from Georgia (Mr. Brown) was right in imposing these rates, he now turns round in secret conference and imposes upon all the iron rolled, hammered, or otherwise advanced an additional tax of $2.40 a ton upon one class and $2.64 upon the other.

"Again, Mr. President, passing on to another clause, light steel rails, of which there is a very large importation, to wit, a class of rails used for street-railways, tramways, narrow-gauge roads, and inclined planes, in short all that class of rails generally used by the smaller and poorer corporations, by the municipal authorities, or by individuals, of which the importation last year was $2,658,997 in value and the revenue $1,414,910, the Senate of the United States imposed a duty of eight tenths of a cent per pound upon all that class of goods, or $17.92 per ton. I have not had an opportunity of examining what the House did in that regard, if their bill is to be considered. It seems to be worthy of consideration, according to the chairman's view, whenever the conferees think they find some excuse for their conduct by referring to what the House has done, and claim that the House had no bill when they increase taxes beyond what either House imposed.

"Under the present law iron bars for inclined planes, as the official statement in my

hand shows, the rate is seven tenths of a cent a pound, or 53 per cent. ad valorem. The Tariff Commission proposed seven tenths of a cent a pound, and the Senate imposed a tax of eight tenths of a cent a pound. This so-called conference committee taxed them above what the Tariff Commission reported, above the present law, above the action of the Senate. They have divided the paragraph into two parts and placed nine tenths of a cent a pound upon a portion of them, increasing them from $17.92 per ton to $20.16, and upon the balance of them, where they are punched, to one cent a pound or $22.40 per ton. Upon a portion of these goods they make an increase of $2.24 a ton, and upon the balance there is an increase of $4.60; and this, though the Senate proposition for taxation upon all this class of articles was higher than the present law and higher than the Tariff Commission report. In this miserable sham conference, after all we have done, on articles that were imported last year to the value of $2,658,977, paying a revenue of $1,414,910, they make an increase of $2.24 a ton on half and of $4.60 upon the other half, without any reason that I can see unless it is to pile up burdens still higher upon every man or corporation that sees fit to build a street railway, a tramway, or anything of the sort. Yet we are asked to set aside the Senate bill and agree to a report full of such monstrosities, which they seek to pass, as though it was an improvement upon what we had done.

"I will pass over a good many of the changes they have made without comment. They have increased the tax on boiler-iron, on line 569, $2.20 a ton. They have increased the tax upon polished, planished, or glanced sheet-iron or sheet-steel $11.20 a ton, although that matter was twice carefully considered; and the Senator from Massachusetts (Mr. Hoar) at last read documents to prove that that class of iron ought to be reduced to two cents per pound. It was reduced on his recommendation, and yet the conferees have put it up again, taxing it $11.20 a ton more, and inserting a proviso which I have not time to consider carefully, but it means mischief. Let me read it to the Senate. It is a new proviso inserted by them:

"*Provided*, That plate or sheet or taggers iron, by whatever name designated, other than the polished, planished, or glanced herein provided for, which has been pickled or cleaned by acid, or by any other material or process, and which is cold-rolled, shall pay one quarter cent per pound more duty than the corresponding gauges of common or black sheet or taggers iron.

"We struck that proviso out after deliberate consideration in the Senate, or in committee, because it was shown that all that iron had to be rolled, and the imposition of that additional tax was such a wrong that not one of these gentlemen dared to urge its adoption in the Senate; it was stricken out, as the debate will show, on proof by gentlemen on this floor that the proviso ought not to be retained. Yet when they get themselves in secret conclave, and with nobody to contradict or expose them, and their report has to be voted on as a whole, because a portion, however vicious or corrupt, if you please, can not be stricken out without defeating the whole measure, they make a bill to suit themselves and their friends. Knowing that there are so many things in the bill that so many men are interested in, they trust that the Senate can not afford to defeat their report.

"Skipping a good many things, I come now to a matter that attracted my attention the moment my eye rested upon it, because it is a subject that the Senate thoroughly understands. The Senator from Ohio, as the Senate will remember, near the close of the discussion brought before us a new amendment to the iron schedule. He presented it on a Saturday morning. I rose to oppose it and said that I did not quite comprehend the full extent and effect of it, but I thought I could find out if I had time allowed me until Monday morning. There were funeral ceremonies to be held at five o'clock that day, and it went over. I had examined it before it was called up on Monday, and when it was understood that the proposition of the Senator from Ohio was to increase the duties on all steel not otherwise enumerated from the present rate of 30 per cent. ad valorem to 45 per cent. ad valorem; that it sought to change the duties on all the classes of Bessemer steel however made, whether by the pneumatic, Thomas-Gilchrist, basic, Siemens-Martin, or any other process, imposing a tax of 45 per cent. upon a certain grade, changing classifications and adding to the duties on them by indirect methods, the Senate refused to accept his amendments. Upon a full, fair, and free discussion in this body, and an explanation of the effect of his propositions, we defeated him in his efforts to tax steel 45 per cent., and held it at 30. We defeated the proposed increase to 45 per cent. duty upon Bessemer steel and made it 40. We kept him from raising the duty on crucible steel and changing the classification in the way he proposed, greatly to the disgust of the Senator from Ohio. Yet after that defeat, perhaps smarting under it, wanting to take revenge on the country and on the Senate, he goes into this so-called conference committee and has restored in this report every provision that the Senate had voted down after full debate when he sought to impose them upon us. In the amendments that I have exhibited from this conference report he has placed all the manufactures of steel at the points I have indicated. I say *he;* I speak of the Senator from Ohio, because he is the leader of this movement in courage and audacity and intellect. I know who drove the conference; I see the tracks, though he does not sign the report; I know who had iron-ore and pig-iron increased. It is a Sherman-Mahone tariff now, as to all the paragraphs in the iron schedule. Senators will observe that in the report all our action in the Senate as to steel is overthrown and the defeated proposition of the Senator

from Ohio is substituted. I never knew a more insolent, not to say insulting, proposition made by one member of a body to the body that has trusted him with power and ordered him to maintain its position. There was no House disagreeing vote to meet or combat, the wishes of the Senate and the rights of the people were simply disregarded, and the private wishes and interests of the conferees consulted. Let me read from the report:

"All of the above classes of steel not otherwise specially provided for in this act, valued at 4 cents a pound or less, 45 per cent. ad valorem; above 4 cents a pound and not above 7 cents per pound, 2 cents per pound; valued above 7 cents and not above 10 cents per pound, 2½ cents per pound; valued at above 10 cents per pound, 3½ cents per pound.

"'Forty-five' is substituted for '40,' '4 cents' for '5,' '7' for '9'—in short, all our work is disregarded. I explained the effects of the proposed amendments on the 20th of February, and can not better show the effect of the report than by reading now what I said then:

"Now, the Senator from Ohio proposes upon all steel embraced in this class—'Above 4 cents a pound and not above 7 cents, 2 cents per pound.'

"Therefore his proposition is to add $22.40 a ton on all that class of steel valued at over 4 and not over 5 cents a pound. That, I expect, embraces a large class of steel used in this country, or why the proposed change in classification? Yet we were told on Friday night that there was to be no increase on the lower grades by the amendment. I have read the lines fixing 1 cent a pound on all these steels made by the Bessemer process as agreed to in Committee of the Whole and in the Senate. The Senator from Ohio has changed the classification. Why, I do not know, except to suit the iron-masters. He has changed it so as to put $22.40 a ton additional upon all that class of Bessemer steel that is valued not above 5 cents and above 4. Why that was done perhaps he can explain.

"What next does he do? The Senate bill in the lines that he last proposes to strike out, as to crucible cast-steel ingots and these other matters, makes this provision:

"'Crucible cast-steel ingots, cogged ingots, blooms, and slabs, etc., valued at 5 cents per pound or less, 1½ cent per pound.'

"The Senator from Ohio promises whenever it is valued at over 4 cents to make that crucible steel pay 2 cents per pound, so that on that class of goods he adds $11.20 per ton; and on all that is valued between 4 and 5 cents a pound by a change of classification, $22.40 per ton on the lower grades of Bessemer steel by striking out the lines he first proposed to strike out; and now, by the lines he last proposes to strike out, and the valuation that he puts and the tax he imposes, $11.20 a ton on all crucible steel valued between 4 and 5 cents per pound. That is the next step.

"What next does he do? The Senate provided that upon all crucible cast-steel valued at 5 cents and not above 9 cents per pound, the tax should be 2 cents per pound; valued at above 9 cents a pound, 2½ cents per pound. That is the maximum, with only two classifications above 5 cents. What does the Senator from Ohio propose? On steel valued at from 4 to 7 cents a pound, 2 cents a pound; from 7 to 11, 2½ cents a pound; and from 11 up, 3½ cents a pound.

"I have shown that he has put $22.40 a ton by the change of classification on the lower grades of Bessemer steel; that he has put $11.20 a ton on the grades of crucible steel valued between 4 and 5 cents, and he now proposes to change the duty on that valued between 4 and 7 cents to 2 cents a pound, the Senate having placed it from 5 to 9 at 2 cents a pound, he proposes from 7 to 11 to fix the rate at 2½ cents a pound. In other words, he increases three fourths of a cent a pound or $16.80 a ton upon all that grade of steel valued at from 7 and not more than 9 cents a pound, and there is where another large importation is made, as you will see if you look at the tables. Sixteen dollars and eighty cents per ton over the Senate bill is proposed upon all steel with from 7 to 9 cents a pound, and then he makes a classification we have not made at all, because from 9 up we made all at 2½ cents, and he makes it from 7 to 11, 2½ cents; and from 11 up, 3½ cents. So that upon all steel of all sorts valued at above 9 cents a pound he adds $16.80 per ton.

"How many millions that adds to the taxes of this people I do not know. It is all done for the benefit of a very few establishments in Pittsburg and elsewhere, whose owners confess that they drew this bill, and who are now seeking to urge Senators to defeat it unless they add to its already onerous taxation all they want.

"I showed during that debate what would be the effect of an increase on steel from 30 to 45 per cent. I will again read from my speech of that date:

"I have looked over it since Saturday, and I will state how I understand this amendment will leave the bill if adopted. The clause as to 'steel not specially enumerated or provided for in this act' is to be delayed for a few minutes, but it is part of the amendment. Steel not otherwise provided for under the existing law now pays 30 per cent. ad valorem. Under that the importations for the year 1882 amounted in value to $5,742,512, and the duty paid was $1,723,352. The Senator from Ohio now proposes to increase this tax to 45 per cent.

"Though we defeated all his propositions then, he has them in such a shape now that we can not even get a separate vote on them, though he could not insert them after discussion in the Senate. He can do it in secret, though defeated when Senators representing States and tax-payers could meet him face to face in fair debate.

"I stated further, in February:

"If the same value of imports continue, the duty that he proposes to impose would be $2,584,930, or an increase of duties on the same value of goods of $761,578; and of course all the products of this country, which is perhaps six times as much as the imports, or perhaps ten times as much, will be increased in the same ratio. In other words, 50 per cent. is to be added to the duties now imposed by law, by the amendment of the Senator from Ohio, upon all steel not otherwise provided for in this act which is consumed in this country, whether made at home or abroad.

"Substantially the same presentation was made by the Senator from Alabama and the Senator from Texas, and perhaps by other Senators, the Senator from North Carolina, I have no doubt, though I do not recollect that he participated in regard to that item, but he was always ready and able, and I assume he took part in it. I know the Senator from Delaware did; in short, the Senate rejected all the amendments of the Senator from Ohio which he has now put into this conference report. I say it requires an audacity that few men possess to insert into a conference report every defeated amendment after the exposure that was made as to the effect of the increased tax-

ation upon the people, and ask us to accept it or tell the country that we shall be responsible for the defeat of this bill without even venturing a word of explanation or deigning to tell us that a majority of the House conferees even asked to have it done. I hardly think they did.

"I shall vote against this report for this among other causes. It is made up against the interest of the people of this country, against the will of both Houses of Congress. I have shown that as to steel rails the taxation imposed is beyond what either House voted; I have shown that as to iron-ore that the two Houses had agreed, and yet 50 per cent. more taxation is sought to be imposed, and hundreds of thousands of dollars added by this conference committee to the burdens of the people. I propose to vote against it, and my word for it, if this report could be defeated we should tell the House of Representatives, as we truly can, that 'we have sent you a better bill in our amendment than this conference report proposes. You had far better vote for the Senate amendments that your leaders would not allow you even a chance to concur with us in, believing that they would frame in secret a worse bill than the Senate had sent; they knew that they would satisfy the pig-iron men and the great manufacturing monopolists of the country better than the action of the Senate would if we reject this conference report as we ought to do because of the outrageous provisions in it'—my word for it, the House to-morrow morning will demand a right to vote upon the question of concurring in the amendments originally sent them by the Senate which are now upon their table, and will say to their conferees as I now say to ours, 'You have transcended your duty in seeking to impose taxes upon this people beyond what either House had demanded.' That House will take up the Senate bill to-morrow morning, and, in spite of its defects and of the high-protective monopolists, will pass it before high noon to-morrow, as an improvement upon this report and a bill infinitely better than this is.

"If we force upon the House of Representatives by voting for this conference report a bill that is made worse wherever it has been touched, that is not improved anywhere, and deprive them of the right which they have never yet had of voting upon the amended bill we originally sent them, we are simply joining hands with these monopolists in forcing a worse bill upon the House of Representatives than is now upon their table, that they can vote for in half an hour after we reject this. I intend to be no party to any such coercion upon the House, and submit to no such dictation here as this report attempts.

"Why, Mr. President, look for a moment at the sugar schedule. What have they done with it? If I were to take up this report in detail I could scarcely expose one half of its enormities before Congress expired. The chairman said just now in his blandest way that a slight increase of tax had been imposed on sugar between No. 13 and No. 16; that the refiners wanted more than they had got, but he thought the committee of conference had done reasonably well for them. What do they do? Without touching any other item in the sugar schedule they provide:

"All sugar above No. 13 and not above No. 16 Dutch standard, 2·75 cents per pound.

"Or $2.75 per one hundred pounds. The Senate had made the duty on that 2·50 cents. The Senate indeed had voted for 2·40 by a vote taken by yeas and nays of nearly 40 to less than 20, according to my recollection. It was first reported before the change at 2·65. The sugar-refiners never publicly asked for more than 2·65. They thought 2·50 was too low; they feared the low tariff on foreign sugars would destroy their monopoly. There might be competition from abroad at 2·50, and they begged for 2·65. The Senate voted for 2·40 on a call of the yeas and nays after full debate by an overwhelming majority. Recollect that the sugars between No. 13 and No. 16 Dutch standard are the table sugars of this country, the only sugars in which the mass of consumers have a direct interest. All the other grades go to the refiner. Thirteen to 16 are the sugars people can use in spite of the refiner and without his aid, and that the plain people do use. Two sixty-five one hundredths was all the refiners asked that ever I heard of, and I believe I have now in my pocket a dozen dispatches when they thought I was to be on the conference committee, begging for 2·65. I do not care to read the names of the men, but here they are; Senators can look at them. The conference committee have made it 2·75 cents per pound.

"That is simply giving the sugar-refiners the monopoly of the sugar business of the country. If not done on purpose, it was done at the dictation of large sugar-refiners whom I can name. It is the worst outrage in this bill. No man can justify it. You will observe that under the existing law there are hardly any importations of sugar above No. 13. Turn to the schedule again and look at it; but I have looked at that so often that I may as well assume that the Senate understands it. If necessary I will hand the figures to the reporter.

"All the sugar that is imported substantially comes in under No. 13, and this increase from 2½ to 2¾ cents a pound gives to the sugar-refiner an absolute monopoly of the sugar in this country, and imposes burdens upon the many who consume sugar all over America of millions upon millions of dollars. This is done exactly in the same spirit that the other high taxes were imposed, to build up great monopolies at the expense both of the revenue and of the consumers of the country.

"The refiners desired an increase from 2·50 to 2·65. Of course they would ask for 3; they would ask for anything; but 2·75, an increase of 25 cents on the 100 pounds on that grade of

sugar, is nothing more nor less than a proposition in the interest of the absolute monopoly of sugar-refiners. There is not a man on the conference committee who will venture to rise in his place and defend this action in the face of the debates we had, in the face of the votes we took, and he will not dare to say that he either did or would have ventured upon this floor to have proposed to impose a tax on sugar graded from No. 13 to No. 16 at 2·75 cents. The Senator from Vermont himself begged me to make it 2·50, declaring publicly that 2·50 was satisfactory to him after we had voted the tax at 2·40. Many of my friends on this side of the chamber who had voted for 2·40 with me were quite annoyed when I begged them to yield to the urgent request of the Senator from Vermont, as perhaps we had put it a little too low at 2·40. I remember well that the Senator from Texas was not very much pleased at the change being consented to.

"Now, sir, notwithstanding the Senator from Vermont did not venture to ask us to go above 2·50, and no sugar-refiner ever pretended that he could decently ask us to go above 2·65, and all the telegrams I received when they thought I was to be a member of the committee said that 2·65 was all they would ask, the Senator from Vermont and his *confrères* on the committee give them 2·75, making their monopoly absolute, making them masters of the sugar business of America, and putting every sugar-consumer absolutely at their mercy; yet the chairman of the conference calls with apparent confidence on the representatives of the people and the States to adopt and sanction that among other outrages. I propose to be as respectful as I can be consistent with truth, but if any milder word than robbery of the people to enrich already gorged monopolies will express my opinion I do not at this moment recall it. The conferees give the refiners one fourth of a cent a pound on all the sugar consumed in this country by excluding competition. The combination of refiners, of course, charge the people one quarter of a cent more than they could under our bill. The sugar consumed annually exceeds 2,000,000,000 pounds, worth over $85,000,000. This robbery or rather sneaking larceny of one quarter of a cent a pound from the people is a gift, in defiance of our often-expressed will, of over $5,000,000. That alone ought to condemn this report and the men who seek to force it upon us, if all else was right."

American Shipping.—Early in the session a bill was reported from the Committee on Commerce for the removal of certain burdens on the American marine and the encouragement of the American foreign trade. It was based on the report of the joint select committee on American shipping, appointed at the previous session, and came up in the House for discussion Jan. 6, 1883, and was read as follows:

Be it enacted, etc., That section 4131 of the Revised Statutes be amended so as to read as follows:

"SEC. 4131. Vessels registered pursuant to law, and no others, except such as shall be duly qualified according to law for carrying on the coast trade and fisheries, or one of them, shall be deemed vessels of the United States, and entitled to the benefits and privileges appertaining to such vessels; but they shall not enjoy the same longer than they shall continue to be wholly owned by citizens and to be commanded by a citizen of the United States."

SEC. 2. That section 4219 of the Revised Statutes be amended by striking out the following words in the last clause: "And any vessel any officer of which shall not be a citizen of the United States shall pay a tax of 50 cents per ton."

SEC. 3. That section 4580 of the Revised Statutes be amended so as to read as follows:

"SEC. 4580. Upon the application of any seaman to a consular officer for a discharge, if it appears to such officer that said seaman is entitled to his discharge under any act of Congress or according to the general principles or usages of maritime law as recognized in the United States, the officer shall discharge said seaman, and require from the master of said vessel, before such discharge shall be made, payment of the wages which may then be due said seaman. When a seaman is discharged by reason of inability to perform his duties, whether in consequence of illness or other causes, the master shall be required to pay him only the wages due at the time of discharge. But if any seaman is discharged in consequence of any hurt or injury received while in the service of the ship, or illness caused by a want of such food, water, accommodations, medicines, or antiscorbutics as are required by law, the master shall be required to pay the expense of providing the necessary surgical and medical advice, with attendance and medicines, until said seaman is cured, or dies, or is brought back to some port in the United States."

SEC. 4. That section 4583 of the Revised Statutes be amended so as to read as follows:

"SEC. 4583. No payment of extra wages shall be required, upon the discharge of any seaman in a foreign country upon the termination of his agreement, or in cases where vessels are wrecked or stranded, or condemned as unfit for service. If any consular officer, upon the complaint of any seaman that he has fulfilled his contract, or that the voyage is continued contrary to his agreement, is satisfied that the contract has expired, or that the voyage has not been continued by circumstances within the control of the master, he shall discharge the mariner; but in case the consular officer shall be satisfied that the master has designedly continued the voyage, he shall require from said master the payment of one month's extra pay over and above the wages due at the time of discharge; but in case the master of the vessel shall provide said seaman with adequate employment on board some other ship bound to the port at which he was originally shipped, or to some other port, as may be agreed upon by him, or furnish the means of sending him back to such port, or provide him with a passage home, or deposit with the consular officer such a sum of money as is by such officer deemed sufficient to defray the expenses of his subsistence and passage home, then no payment of extra wages shall be required."

SEC. 5. That section 4582 of the Revised Statutes be amended so as to read as follows:

"SEC. 4582. Whenever a vessel belonging to a citizen of the United States is sold in a foreign country, and her company discharged, it shall be the duty of the master to produce to the consul or officer the certified list of his ship's company, and also the shipping articles, and to pay to said consul or officer for every seaman so discharged one month's pay over and above the wages which may then be due to such seaman; but in case the master of the vessel so sold shall provide such seaman with adequate employment on board some other ship bound to the port at which he was originally shipped, or to such other port as may

be agreed upon by him, or furnish the means of sending back to such port, or provide him with a passage home, or deposit with the consular officer such a sum of money as is by such officer deemed sufficient to defray the expenses of his subsistence and passage home, then no payment of extra wages shall be required."

SEC. 6. That section 4600 of the Revised Statutes be amended so as to read as follows:

"SEC. 4600. It shall be the duty of consular officers to reclaim deserters and discountenance insubordination by every means within their power, and where the local authorities can be usefully employed for that purpose, to lend their aid and use their exertions to that end in the most effectual manner. In all cases where deserters are apprehended consular officers shall inquire into the facts; and if he is satisfied that the desertion was caused by unusual or cruel treatment, the seaman shall be discharged, and receive in addition to his wages to the time of his discharge, one month's pay, or the master shall provide him with adequate employment on board some other ship bound to the port at which he was originally shipped, or to such other port as may be agreed upon by him, or furnish the means of sending him back to such port, or provide him with a passage home, or deposit with the consular officer such a sum of money as is by such officer deemed sufficient to defray the expenses of his subsistence and passage home. And the officer discharging him shall enter upon the crew-list and shipping articles the cause of discharge and the particulars in which the cruelty or unusual treatment consisted, and the facts as to his discharge, or re-engagement, as the case may be, and subscribe his name thereto officially."

SEC. 7. That section 4581 of the Revised Statutes be amended so as to read as follows:

"SEC. 4581. That if any consular officer, when discharging any seaman, shall neglect to require the payment of and collect the extra wages and charges required to be paid in the case of the discharge of any seaman, he shall be accountable to such seaman to the full amount thereof; and if any seaman shall, after his discharge, have incurred any expense for board or other necessaries at the place of his discharge, before shipping again, such expense shall be paid out of the wages to which he shall be entitled, which shall be retained for that purpose, and the balance only paid over to him."

SEC. 8. That section 4584 of the Revised Statutes be amended so as to read as follows:

"SEC. 4584. Whenever any consular officer, upon the discharge of any seaman, receives the wages due to said seaman, he shall at once pay the same to the said seaman, except as provided by section 4581 of the Revised Statutes."

SEC. 9. That section 4578 of the Revised Statutes be amended so as to read as follows:

"SEC. 4578. All masters of vessels belonging to citizens of the United States and bound to some port of the same are required to take such destitute seamen on board their vessels, at the request of the consuls, vice-consuls, commercial agents, or vice-commercial agents, respectively, and to transport them to the port in the United States to which such vessel may be bound, on such terms, not exceeding $10 for each person, as may be agreed between the master and the consul or officer. But for long voyages and peculiar disabled condition of such seamen there shall be allowed to the master or owner of such vessel such reasonable compensation, not to exceed 30 cents per day, in addition to the allowances herein provided, as shall be deemed equitable by the collector of the port in the United States which the vessel may first reach, the same to be paid under such regulations as may be prescribed by the Secretary of the Treasury. Every such master who refuses the same, on the request or order of such consul or officer, shall be liable to the United States in a penalty of $100 for each seaman so refused. The certificate of any such consul or officer, given under his hand and official seal, shall be presumptive evidence of such refusal in any court of law having jurisdiction for the recovery of the penalty. No master of any vessel shall, however, be obliged to take a greater number than two men to every one hundred tons burden of the vessel on any one voyage."

SEC. 10. That no fees shall hereafter be charged by any consular officer for any certificate, manifest, or other official service to American vessels engaged in the foreign trade, or to the owners, officers, or seamen of such vessels. Consular officers who are now paid in whole or in part by fees shall make a detailed report to the Secretary of the Treasury of the services performed in accordance with this section, with the fees heretofore allowed in such cases, and shall be entitled to receive the amount thereof in the same manner as is provided by law in case of other compensation payable by the United States.

SEC. 11. That it shall be, and is hereby, made unlawful in any case to pay any seaman wages in advance of the time when he has actually earned the same, or to pay such advance wages to any other person, or to pay any person any remuneration for the shipment of seamen. Any person paying such advance wages or such remuneration, shall be deemed guilty of a misdemeanor, and upon conviction shall be punished by a fine not less than four times the amount of the wages so advanced or remuneration so paid, and may be also imprisoned for a period not exceeding six months, at the discretion of the court. The payment of such advance wages or remuneration shall in no case absolve the steamer, ship, or vessel, or the master or owner thereof, from full payment of wages after the same shall have been actually earned, and shall be no defense to a libel suit, or action for the recovery of such wages: *Provided*, That this section shall not apply to such fees as by any law of the United States may be collected by any shipping commissioner or other officer of the United States for the shipment of seamen. This section shall apply as well to foreign vessels as to vessels of the United States; and any foreign vessel, the master, owner, consignee, or agent of which has violated this section, or induced or connived at its violation, shall be refused a clearance from any port of the United States.

SEC. 12. That every vessel mentioned in the preceding section shall also be provided with a slop-chest, which shall contain a complement of clothing for the intended voyage for each seaman employed, including boots or shoes, hats or caps, under-clothing and outer clothing, oiled clothing, and everything necessary for the wear of the seaman; also a full supply of tobacco and blankets. Any of the contents of the slop-chest shall be sold, from time to time, to any or every seaman applying therefor, for his own use, at a profit not exceeding 25 per cent. of the reasonable wholesale value of the same at the port at which the voyage commenced.

SEC. 13. That all masters and owners of vessels shall have the right to ship and pay off the men they employ.

SEC. 14. That section 2514 of the Revised Statutes be amended so as to read as follows:

"SEC. 2514. That all articles and materials of foreign production needed for the repair of vessels engaged in the foreign trade, including the trade between the Atlantic and Pacific ports of the United States, and all ship stores, cordage, rigging, canvas for sails, and coal to be used and consumed on board of any such vessel, may be withdrawn from bonded warehouses free of duty, under such regulations as the Secretary of the Treasury may prescribe."

SEC. 15. That no vessel engaged in commerce with the Dominion of Canada or the Republic of Mexico shall be subject to tonnage tax or duty, nor shall consular certificates be required from the same.

SEC. 16. That instead of the assessment of 40 cents per month, authorized by sections 4585 and 4587 of the Revised Statutes of the United States, there shall hereafter be assessed and collected 20 cents.

SEC. 17. That the individual liability of a ship-owner shall be limited to the proportion of any or all debts and liabilities that his individual share of the vessel bears to the whole.

SEC. 18. That when any vessel, whether steam or sail, shall be constructed and equipped in the United States for the foreign trade, including the trade between the Atlantic and the Pacific ports of the United States, in whole or in part of materials of the production of the United States, the owner or owners of such vessel shall be entitled to receive and collect from the United States a drawback or sum equal in amount to the duty which would have been collected upon imported materials of like description and of equal quality with the American materials used in the construction, equipment, engines, boilers, and other appurtenances of such steam or sail vessel: *Provided*, That in ascertaining such drawback the duties on such iron or steel materials shall be computed on iron and steel advanced in manufacture not beyond the point of plates, angles, bars, and rods: *And provided further*, That this section shall apply only to vessels commenced after the passage of this act.

SEC. 19. That such sums shall be paid in the same manner and from the same funds as drawbacks on customs duties, and under such regulations as may be adopted from time to time by the Secretary of the Treasury, and shall be adjusted and the amount thereof determined prior to the registry of such ship or vessel.

SEC. 20. That the certificate of registry of every such ship or vessel shall be entitled "Certificate of registry under an act to remove certain burdens on the American merchant marine, to encourage the American foreign carrying trade, and so forth," and shall contain a prohibition of such ship or vessel engaging in the coasting trade, except between ports on the Atlantic and ports on the Pacific. Every such certificate shall have indorsed upon it the amount paid or adjusted to be paid to the owner under this act. Every renewal of the registry shall be in like form. Should any vessel so registered be about to engage in the coasting trade, other than that between ports on the Atlantic and ports on the Pacific, the owners must first surrender such certificate of registry, repay to the collector of customs to whom the certificate is surrendered the sum indorsed thereon, and take out a new certificate of registry or of enrollment in ordinary form. Should any ship or vessel, registered as hereinbefore provided, engage in the coasting trade other than that between ports on the Atlantic and ports on the Pacific, without surrender of such certificate, as hereinbefore provided, or without repayment of the amount indorsed thereon, or without taking out a new certificate of registry or enrollment in ordinary form, she shall be subject to a fine of double the amount indorsed on such original certificate of registry; which fine shall be a lien on such ship or vessel, and shall be ascertained and collected at suit of the United States *in rem* in admiralty against such ship or vessel in the district court of the United States for the proper district; such suit to be governed by the laws, rules, and regulations pertaining to other suits in admiralty.

SEC. 21. That when a steam or sailing vessel is built in the United States for foreign account, wholly or partly of foreign materials on which import duties have been paid, there shall be allowed on such vessel, when exported, a drawback equal in amount to the duty paid on such materials, to be ascertained under such regulations as may be prescribed by the Secretary of the Treasury. Ten per cent. of the amount of such drawback so allowed shall, however, be retained for the use of the United States by the collector paying the same.

SEC. 22. That all registered ships, steamers, or vessels employed exclusively in the foreign carrying-trade, including the trade between the Atlantic and Pacific ports of the United States, are hereby exempted from all or any State or municipal taxation.

SEC. 23. That all acts and parts of acts in conflict with this act are hereby repealed

Mr. COX, of New York, opened the discussion on the part of the minority of the committee:

"Mr. Speaker, in most cases, either of social or physical grievance or disease, the way to reach the remedy is to study the causes so as to remove them. The sickness even unto death of our marine is a partial exception to this mode of treatment. Many of the causes which produced the effect which we deplore have done their worst and have expired as active energies. To their operation have been added new causes, which congressional supineness and injurious policies have intensified. So that, indeed, it may be said that if our navigation and commerce are to be restored the remedy must be as heroic as the case is desperate.

"It is beyond doubt that the origin of our navigation laws was a compact with slavery. This David A. Wells has shown most vividly in his volume on the 'Mercantile Marine.' New England was engaged in shipping and in transporting and selling slaves to the South. She desired to hold the monopoly of that trade. This she procured for a period, by the extension of the time for the extinction of the slave-trade to 1808. The compact was completed by the navigation laws of 1790 and 1792. Tonnage dues and imposts gave to the American the entire commerce and prohibited foreign ship-owners from engaging in our trade. Again, in 1816, 1817, and 1820 the odious British navigation laws against which our fathers rebelled, were re-enacted by Congress. Every discrimination possible was made against foreigners.

"These laws, whose origin is found in the horrors of the middle passage, and whose history is a part of the most disgraceful experience of our country, have ceased to protect American shipping.

"Indeed, the protection of these laws, by the whirligig and revenges of time, is given to the foreigner, to the Briton. We drive to him the carrying of our persons and property; load him with largesses of freight and fare, and forbid our own people from enjoying even a share in the hundred and odd millions which our laws transfer out of our produce and producers to the pocket of the foreigner! If this be done to protect our ship-builder, it fails; if it be done to protect our ship-owner, it fails. The owner if he would build here must do it at a loss of 15 or 30 per cent. If he would buy, he must buy ships only thus built. Thus builder and owner are burdened by the clinging of this Old Man of the Sea. If we can build as cheap here as abroad, we need no protection; if we can not build as cheap here as abroad, who can afford to buy? The sea is open field, where the guerdon falls to him who can procure his vessel in the best market.

"This open competition, as to the purchase and use of ships of all kinds, has changed, or

ought to change, the laws which govern our marine. The laws of eighty years ago are not suited to our changed condition. Those laws suited sail, not iron or steam. As soon think of returning to the stage-coach or the footman for land conveyance, or to the skin boat of the Esquimaux or junk of the Chinese for sea transportation, as to run the ocean-fleet of to-day under the ancient laws. Nay, as well think of discarding the new motors of physics and their energies as return even to the wooden paddles of the early Cunarder, with its petty 1,200 tonnage and its little subsidy.

"Thus the very causes which produced our disasters are as obsolete and inoperative as the slave-trade itself. The very model upon which our navigation laws were molded has been shattered, and our shipping to-day, with all these restrictions, guards, and prohibitions, is as useless and uninteresting as the 'fat weed that rots on Lethe's wharf.'

"It matters, therefore, little, to examine into the causes which produced the decay of our marine. When we see other nations improving their marine by liberal policies while our Government has neglected to adopt them, the solution is easy. As well expect the boor of Russia, with his old modes of farming his wheat, to compete with the American farmer with his new implements of labor and time-saving, as the United States rival Germany and England in shipping without the marine instrumentalities which these nations employ.

"It matters more to examine the existing obstacles to the resuscitation of our shipping interests. Can we remove them if we find them? Are they of such a nature that enacting or repealing laws will bring the desired relief?

"One stubborn obstacle which time and social changes alone can remove is referred to in the minority report. It is the diversion of our energies to other pursuits more profitable.

"'It is not likely,' say the minority, 'that any great increase or revival will take place until we have reached the maximum in other lines of labor and enterprise, especially in agriculture. When that point is reached and our energies are diverted to other pursuits, the ocean may have its olden attraction and remuneration for our people.'

"The census reports our marvelous opulence in flock and field, in mine and mill. We are producers of food for ourselves and mankind; oil, gold, silver, and coal, and railroads beyond the wildest dreams, all the results of natural wealth and applied industry; yet we are so poor that the $140,000,000 of the carrying-trade, whose Pactolian current should be ours, is turned from us. At the end of the fiscal year 1882 we had a tonnage of 4,165,933 in that business, of which 1,292,294 was in the foreign carrying-trade. Yet the coasting trade grew and railroad transportation grew. In ten years from 1871 to 1881 the miles of railroad leaped up from 60,283 to 104,813, and exports from our farms more than quadrupled. Export has grown wonderfully, but your railroad magnate is petted by bonds and lands and monopolizing charters. He may own a railroad and not hide his property under a foreign flag. He may not ignore his civic right, while the American ship-owner must cringe down below the hatchway while the Spanish flag of blood and gold, or the British union-jack, or the Norwegian and German ensigns, float over his clandestine property.

"It is notorious that not a little of foreign tonnage is owned by Americans. The form in which it is hidden, by corporations and mortgage, is explained in the testimony.

"The 'Red Star' line between Antwerp and the United States is nine tenths owned in Pennsylvania. Their ships are building on the Mersey. They asked proposals from our ship-builders, and found them 15 per cent. more than the foreign ship-builders; and they were compelled to go under foreign flags.

"In fact, the best part of the capital of our country employed in shipping or ship-using is under alien flags.

"Another and kindred reason for the loss of our carrying-trade and the failure to restore it, is that other countries have laid hands on that which slipped from us in our preoccupation during the civil war. For others, vessels are now at work; for others, vessels are being built on the best models. The seamen, the skill, the capital, and the enterprise of others hold the lines of sea adventure. Possession, with its concomitant advantages, is not ours. We have to struggle valiantly for what others have already.

"So that, Mr. Speaker, to remove this mountain in our path we must remodel the whole industrial system of our own half-hemisphere, and we must turn and overturn natural laws of supply and demand in other spheres of labor and locality. This being impossible, what remains for us except tentative legislation, the repeal of burdens on navigation here, of a liability on a ship-owner there, a reasonable compensation for mails, in many directions; and as the best thing, in the judgment of our wisest economists and merchants, freedom for all stores and materials and liberty to purchase vessels wherever we please to buy.

"If these remedies fail, then the country must await some catastrophe in the shape of a great foreign war, which, like the Crimean, calls our marine into being and activity; but even then we must have the right to buy freely, else it will be useless to regard the opportunity. Or perhaps some exceptional progress may be made in the building of ships or the motive power of its enginery. This may give us a fresh start and added momentum, such as England received in her iron-ship building.

"One needed reform is to do at our ports what other countries do—allow unlimited warehousing of goods, that shippers and merchants may make up a variety of cargo. We have a law which forfeits to the Government (section

2971 Revised Statutes) goods in bonded warehouses after three years. It is a blow at foreign commerce.

"Not the least among the efficient causes which embarrass our shipping are the taxes placed upon our ships in foreign ports. Spain is especially odious on this account.

"I do not therefore greatly rely upon any method proposed by the majority for the revival of our ship-building and ship-using, although I must commend the perspicuous energy and intelligence of the gentleman from Maine (Mr. Dingley). They urge through his bill and report, various schemes besides those in the reported bill, but make no section in the bill to carry them out; as, for instance, a system of postal charge, of apprenticeship, and a board of trade.

"State as well as Federal legislation is needed. There are certain necessities for the revival of navigation and commerce, which do not depend upon congressional legislation. They are under State and municipal control, such as pilotage, wharfage, harbor-masters' dues, quarantine fees, port-wardens' duties. But these, like the other minor matters of the bill of the committee, are but feeble auxiliaries in the labor of regaining our mercantile supremacy.

"The relief, whatever it is, must come as well to the ship-using as to the ship-building interest. Even if we remove all the burdens upon the use of ships, it will avail nothing so long as the ships can not be bought or made as cheaply at home as abroad.

"If, therefore, our tariff laws will not allow us to build nor our navigation laws to buy, of what use is the bill of the majority? What is the necessity of taking burdens from the running of vessels which we have not and can not buy or build?

"Hence the minority report explicitly says that—

"While the committee are *generally* agreed upon the measures proposed, the minority are constrained to notice the fact that the most vital and prominent relief, by the freedom of materials for ships from customs dues, and the right to purchase ships abroad, is utterly ignored in the majority report. In the opinion of the minority, nothing could be more futile, not to say absurd, than to deal with a vital disease by remedies which only affect the superficial ailments whose removal would leave the patient in as dangerous a plight as ever.

"Go on, gentlemen! Modify your shipping laws, remove burdens, extend privileges, copy the British code! We will aid you in the experiment as far as you go, and would bid you go further, to fare better. Compensate for mail service; make ship-supplies free; adapt your rules to the new class of seamen; make a new and inexpensive consular code for their discharge and return home; prohibit the advance wages and 'blood-money'; allow a Norwegian or Italian to be an American mate; limit the liability of ship-owners; reduce the hospital-tax; modify the tonnage-tax, or repeal it altogether; erase from every State statute the local taxation on shipping; ay, even erect a bureau like the British Board of Trade as the special cherub to keep watch over poor Jack; do all these as your committee suggest. Do more! Out of your treasury, or out of the tonnage fund, mostly collected from foreign shipping, make a sort of allowance for the use of certain American materials in building ships; and yet, like the young man in Scripture, one thing ye will lack. You may copy the English statutes, as liberalized in 1849 in allowing Englishmen to buy ships where they pleased, and in 1854, when they opened their coasting trade to all the world. 'Begin,' as your majority say Great Britain did (p. 8), 'begin a complete revision of the merchant-shipping statutes, so as to remove every obstacle and give every facility,' and then you may have some dim hope of the resurrection of our wrecked marine!

"I pause here, Mr. Speaker, to ask, first, what are our navigation laws? Wherein do they obstruct the revival of our shipping?

"Briefly they are: That a vessel of the United States engaged in the foreign trade must be registered to entitle it to the rights and privileges of a vessel of the United States; and to be so registered must be built within the United States and belong wholly to citizens of the United States, or be captured in war and condemned as a prize, or be adjudged forfeited for breach of the laws of the United States, being wholly owned by citizens of the United States. No vessel can be registered, or, if registered, entitled to the benefits and privileges of a vessel of the United States, if owned in whole or in part by any citizen of the United States who usually resides in a foreign country, during the continuance of such residence, unless he be a consul of the United States or agent for a partner in some house of trade consisting of citizens of the United States, actually carrying on trade within the United States, or if owned in whole or in part by any naturalized citizen of the United States who resides more than one year in the country from which he came, or for more than two years in any foreign country, unless he be a consul or agent of the United States. No vessel registered as a vessel of the United States licensed or authorized to sail under a foreign flag and to have the protection of any foreign government during the existence of the rebellion can be deemed or registered as a vessel of the United States, or to have the rights and privileges of such vessels, except under provisions of law especially authorizing such register. A register may be issued to a vessel built in a foreign country when such vessel shall be wrecked in the United States and be purchased and repaired by a citizen of the United States, if the repairs equal three fourths of the cost of such vessel when repaired.

"The navigation laws are practically dead for the purpose of their being. Let us—

". . . rise on stepping-stones
Of their dead selves to higher things.

"Is it not, Mr. Speaker, marvelous that in this majority report the confession is naively made that our merchant shipping laws remain the same as they were originally framed more than fourscore years ago, and that they were all that were needed so long as the English laws were the same? And yet the majority stop short of the one prominent and majestic feature of the newly-constituted English system—liberty to build and buy! The majority say that 'our error was in not imitating England in so modifying our laws as to give the American marine the same advantages in this respect that English shipping was given under English laws'; and yet it would perpetuate the error by a blindly selfish persistence in the very laws which England repealed! Well, sir, if England is to be our exemplar, if her maritime success is a sign that her laws worked beneficently, then let the obstructions which she removed be removed by us. This the minority propose in the amendments for free materials and free ships.

"Without, therefore, arguing at length any of the lesser propositions in the majority report, it is enough to say that the acquiescence in most of the measures proposed was hearty and earnest by the whole committee; while the reluctance as to one proposition, the 'drawback,' so called, was somewhat mitigated by the belief that the amendment for free materials might prove more acceptable. And if, as the minority hope, both should be adopted, little harm could result, as the nullification of the bad consequences of the one would be nearly perfect by the adoption of the other. Or, if there should be an option allowed the builder to choose either the 'drawback' or free materials under my amendment, the adoption of the drawback thus coupled would not be without some utility. But if no compromise be tendered in the interest of freedom of materials or ships, I want no allowance fixed on the Treasury, no leech to draw its blood such as this drawback will then be.

"The minority had no power to prevent the adoption of the drawback proposed, had they been inclined to balk the majority in this experiment. All the minority could do was to append the proviso to it; that it should only apply to ships begun after the passage of the act.

"This drawback proposition came from the San Francisco Board of Trade. It was offered by the gentleman from California (Mr. Page). It was drafted by an experienced merchant, Mr. Hopkins. It was not written on the Delaware, nor in the interest of the Pacific Mail Steamship Company, as will appear by the fact that their interests are somewhat adverse, because the section is not applicable either to ships already afloat or on the stocks, but only to those which shall have been begun after the passage of the act.

"The reason given for this clause of the bill reported, and which is most controverted, is set forth by its author, in the speech made before the San Francisco Board of Trade. That speech is entitled to much emphasis. As the sixth of the ninety-three seaports of the United States, San Francisco owned only twelve of the five hundred and fifty vessels loaded at her port for Europe during the harvest year ending June 30, 1882. For that period she paid in freights to Europe by sea, $16,069,789; and to and from all ports of the Pacific coast, $25,000,000. Nearly all of these sums went to foreigners, When this appeal for self-interest was made with the patriotic fervor aroused by the thought of our flag, the committee gave the suggestion much favorable thought. Nor would I reproach myself for acquiescence in the entire report could I reconcile it with my old and matured ideas as to protection.

"In urging this measure the San Francisco traders evidently felt the orphanage of navigation and the hopelessness of asking for a repeal of the navigation laws. Which way soever they looked they saw the image of protection, like Pluto's countenance—iron and inexorable. Piteously they pleaded that their plan was 'not a subsidy levied on many industries to benefit a few, but simply the payment of a debt due by the many enterprises which are prospering by means of the tariff to the one which has been ruined by it.' They pleaded as those who owned the cargo which was jettisoned to save the vessel, and that they should be made good by a general average contribution.

"In this rhetorical masquerade they meant to say: 'Behold us, the victims of your robbery! True, you may have robbed us under pleasing disguises; your self-seeking may have made your larcenies unwitting; still, as pirates of the land you have destroyed our fair and free trade upon the water. And as you have thriven upon this piracy, be generous to your despoiled victims, as you have in your coffers the loot you stole from us. Be patriotic and devoted in this paramount matter and in our death-agony! No longer continue to help Great Britain at our expense, after rifling us for the general welfare!'

"It is upon such reasoning as this that we are asked to allow this drawback; and if there be, as Bastiat held, a reciprocity in brigandage, let us steal back from those who stole from us, that we may have some compensation for our losses by the restoration of something of our own. Let us cultivate a mutuality in rascality! (Laughter.)

"Having, then, shown the origin, animus, and *raison d'être* of this so-called drawback in a bill to revive shipping, may I not ask:

"1. Why a tariff which kills an industry so momentous as ship-building should be continued? I have shown in the minority report how the tariff directly ruins ship-building by its enormous burdens on the materials. I have given in Exhibit B a list of the taxes, ad valorem, on the principal materials used in steamship manufacture. They range from 20 to 67

per cent. These should be imported free, fashioned and ready for being put together in the vessel. Certainly, the portion of the labor to be done in putting the parts together may not amount to much; but if it do not, then the cost of the vessel is less. This is a desideratum not to be despised in a desperate case like that of our ship-building, where such odds favor our competitors.

"2. May I not ask why a tariff which kills commerce should be continued? The people are giving answer; but whatever that answer is, the entire and beneficent revision of the tariff, with the resultant reduction in the price of materials and labor, is not contemplated. Nor is the revival of commerce on a large and normal scale likely to happen as the sequence of our tariff reform.

"Commerce means barter, exchange; buying and selling, both. If we would sell our products abroad, we must buy abroad. The tariff, by preventing importations or exchanges, as in the South American examples which the report of the minority shows, destroys commerce. Commerce being absent, of what use is the ship or its revival? Of what use is the telescope if there were no stars, or the spindle without cotton, or any instrumentality without that which gives it employment? So that when we revive commerce by revising the tariff, which is the grand obstacle to reciprocal trade, we make, and make profitable, the means of commerce—namely, ships.

"But it will be said that the revisal of the tariff, especially as to iron, steel, cable and cordage, sail-duck, plank, deals, lumber, wire-rope, rivets, tubes, bolts, pipes, iron screws, etc., touches other interests, and that these are 'protected,' and that the protection is riveted upon our Government as an American policy. This would seem to have been and to be our shackled condition. Nor do I see how to free and enlarge either ship-building or commerce except by the liberalization of our barbarous and prohibitive tariff. The San Francisco traders are more politic. They accept the outrage as accomplished; they regard the tariff as perpetuated. Hence they 'beg'—that is their word—to have the loot returned to them, to draw back the plunder and place it where it will do the most good.

"Well, I say to them, and to my constituents who have been largely interested in both building and using vessels, that just now there is no chance to so revise the tariff on the composite parts of a ship as to allow us to make it as cheap here as it can be made or bought abroad.

"Nor is it possible just now to so revise our tariff as to make our trade with other countries mutual, and thus have incoming as well as outgoing cargoes, which bring paying freightage.

"What then? This and only this as the remedy for the revival of both ship-building and ship-using: purchase in the open market of the finished ship. Repeal the odious navigation laws, so as to allow registry free of duty as to all vessels the same as if built and owned here.

"If I am answered that this will destroy our ship-building, I answer—

"1. That as to wooden ships and ships that are 'auxiliary,' having steam and sail, such as Maine is now making for California, we are assured that we can build as acceptably and as cheaply as any other nation. The last year's showing in Maine demonstrates that her ship-yards are doing well; there being 80,000 tons completed and on the stocks since last year. They need no bounty.

"2. That as to iron or steel vessels, could we be worse off than we are now by any change of fact or law? The catalogue of our iron and steel vessels is the humiliation of our enterprise. It is the one bar sinister on our escutcheon.

"If it be said again that the repeal of the navigation laws will destroy our ship-yards, we reply that there is nothing on our stocks of much general consequence in iron ship-building; and since the business will not remunerate without subsidies or bounties or general taxes on all the people for one interest, let us try the experiment which other nations have tried successfully, namely, buy abroad, since we can not build at home.

"It is argued that, because a great many poor ships are built in England, those are the ships that we would buy if we could! Undoubtedly there are many poor carriages built in England. We are at liberty to import land vehicles, while we can not import vehicles to be used on the water. When we do import carriages we import the best. The Americans are not fools. Let the buyer of a horse or a ship beware. Why should not trade and labor be left a little to natural laws? Are there not regulations more powerful than Congress can make? Repeal burdens and restraints; stop the talk about stimulation; practice non-intervention—these are maxims only less radical and wholesome than the natural prescripts which ordain them.

"Could we have seen ten or twenty years ago to-day what others saw, we might have had to-day a splendid fleet of screw-steamers under our flag. The earnings might have been saved to us. We relied on our own ship-yards, and in 1881 but eight of the 44,463 tons of steamers built on our seaboard were for the ocean, or only 1 per cent. of the British tonnage built the same year. Our citizens, had they been allowed, would have bought the ships of iron and steel we could not build. One of the oldest ship-builders and owners of the United States, formerly a member here, writes me that had we had the privilege of buying iron ships there would to-day have been two hundred of them under our flag; and he says:

"I do not believe there would have been many more ships in the world than at present, only we

should have had our share; our sons would have had employment, and our country would have been so much richer. I have three sons, masters of ships. I shall never build another wooden ship; but I would, if I could, go into the iron ships; they last longer. There have been great improvements in them the past five years, and we would have received the benefit of them.

"Why not allow the merchant, if he thinks he can do it, to get his ship abroad, and try at least to run it? He will not charge the Treasury for his failure and loss.

"In time, as in Germany, the ownership leads to repair, and repair to building. The number of ship-yards and workshops increases, and the tonnage leaps up under this impulse. That which seemed a mustard-seed becomes a mighty tree. Every nation has tried the free-ship experiment but the United States, and we are lowest to-day in our proportionate share of the navigation of the world. No one can say it is a failure until it is tried. All other schemes—and especially its opposite, protection—have been tried and failed. The commercial eminence of Great Britain, not to speak of Germany, France, Italy, and Norway, is supreme logic for the trial of the experiment. Germany is the best illustration; she has not as good coal and iron as we have, but she began to buy her ships on the Clyde, as we might have done a score of years ago. She is now building her own iron steamships. She builds now more than she buys. She has never subsidized. Her tonnage in 1856–'57, when ours began to decline, was but 166,000 tons; last year she had 950,000; ours in eleven years dropped from 4,400,000 to 600,000, and all its vast income was lost.

"Last week I read that a new steel steamship, the Rugia, of 6,500 tons, was turned out for our trade from the Vulcan Works at Stettin, warranted for the safety of 1,200 passengers, with steel life-boats and steam steering-gear and a refinement in the reversal of her engines in seven seconds. German growth has been in iron screw-steamers, which she began to buy abroad. They could not afford to wait, this phlegmatic people, for their own ship-yards to arise, but began to repair in the blacksmith shops and little foundries of their 'free towns,' and now, where the little furnace glowed, mighty engines are made to mate the ocean in its wildest tempest!

"Even Japan has a fleet of fifty-seven iron steamers, and China leaves us laggard and unprogressive. Fifty years of Cathay—nay, twenty years—is worth more than a century of our experience.

"Twenty years ago Norway and Sweden traded with us and had but 20,000 tons in the trade; now they have 850,000. The Viking is abroad, and we are stupidly looking on. Everybody is making money out of our carrying and commerce but ourselves. What avails it that ours is the largest carrying-trade of any nation since we do not do the work? It adds to the humiliation.

"It makes the humiliation worse to consider the losses in money as well as the prestige at sea.

"The gentleman from Pennsylvania (Mr. Randall) has called upon the Treasury for the amount of ocean freights on exports and imports during the year ending June 30, 1882. Much loose understatement will be set at rest by the report. It may be reached by the average percentage on the values. What, then, is the result?

"Aggregate of exports and imports for the fiscal year (exclusive of specie) was $1,475,182,881, and the freights on this at 20 per cent. would be $295,036,566. Only about 22 per cent. of the carrying trade is down in American bottoms, so that our freight account for the year would stand thus: Received by American ship-owners, $42,908,044; received by foreign ship-owners, $252,128,521. Making every deduction for foreign trade with Canada, Mexico, the West Indies, Hawaiian Islands, Central America, etc., this enormous outlay appears.

"Looking at the wall of adamant which shuts us in from all the world and shuts the world out from us in this once famous enterprise of ours, can we draw hope from the prospect? The gigantic results of a hundred years of national existence and energy are not discouraging. Over mountains and through valleys, upon rivers, across continents and under oceans, our enterprises by rail and telegraph have developed our resources. They astound by their marvels. And yet halting on the shores of two vast oceans we have said to the land, or rather the voice of either ocean has said to these enterprises and products of the mine and field: 'Thus far, but by our help no farther. The illimitable ocean is beyond, and its trident is in another's grasp.' Upon the west we face the Orient, rich in the elements of commerce. We had hoped once that the Pacific would have been an American lake. That hope is dead. On the east we almost touch Europe, with its teeming industries, peoples, and civilizations; but they come to us in their own vessels, and bear away our produce. In this we have no pay, part, nor lot. On the south we were reaching across gulf and sea to the tropics at our doors and to the republics of our continent. Once we had mutual relations with the Dominion on our north; but this and all such visions of material supremacy and splendor have faded. The ocean-coast still gives us its thunderous line of breakers, its seven thousand miles and more, indented with harbors of safety and bays of wondrous beauty. The net-work of our hundred thousand miles of railway still trembles with its immense freight, the garnered opulence of our sky, sun, soil, and mine. Cotton, corn, and petroleum—the triumvirate of our common weal—head the stately procession in which a thousand forms of labor and graces of art move and chant their praises to our smiling and copious land.

"The time was when amid the glory and pride of our country our models of ships and

adventure at sea were the theme of lyre and the praise of eloquence. It was comfort and wealth in peace, hope and safety in war.

"It was the horn of plenty and the nursery of seamen, for the maintenance of our independence and rights. Why should America not have her part in these glories of the sea? Was she not discovered by the genius, daring, and devotion of Columbus? Were not our colonies created into commonwealths by the men who braved the dangers of the sea to found here new empires? Our country is born of the sea! Its freedom is of the wind and wave.

"Shall these praises be forever an echo of the past? Are we to take no part in the enlightenment and progress in science and art, of which commerce is the procreant cause and infallible gauge? Has the sea rolled back and away from us at the command of the insolent monarchs of capital?

"To one born inland the sea has a weird and wondrous mystery. I have studied its moods as a lover those of his mistress. Through the generosity of my fellow-legislators here, we have been able to mitigate somewhat of its terrors. Its enchantment has led me over liquid leagues on leagues to remotest realms. Not alone does it enchant because of its majestic expanse, its resistless force, its depth and unity, its cliffs, bays, and fiords, its chemical qualities, its monstrous forms, its riches and rocks, its tributes, its graves, its requiem, its murmur of repose and mirror of placid beauty, but for its wrath, peril, and sublimity. These have led adventurous worthies of every age, by sun, star, and compass over its trackless wastes, and returned them for their daring, untold wealth, and the eulogy of history.

"But it is for its refining, civilizing, elevating influences upon our kind that the ocean lifts its mighty minstrelsy. Unhappy that nation which has no part in the successes of the sea! Happy in history those realms, like Tyre, Sidon, Carthage, Greece, Italy, Spain, and Norway, whose gathered glories are symboled in the trident! Happy in the present are those nations who, under the favoring gales of commerce, the fostering economies of freedom, and the unwavering faith in the guidance of Providence, bear the blessings of varied industry to distant realms and bring back to their own the magnificent fruits of ceaseless interchange! Happy that nation whose poet can raise his voice to herald the hope and humanity of its institutions in the grandeur of the familiar symbol of Longfellow:

"Sail on, O Union, strong and great!
Humanity with all its fears,
With all the hopes of future years,
Is hanging breathless on thy fate!

"Amid this divided marine dominion, in which one power alone has half the rule of the ocean, shall America sit scepterless and forlorn —dethroned, ignoble, dispirited, and disgraced? The ensign of our nationality takes its stars from the vault of heaven. By them brave men sail. It is now an unknown emblem upon the sea. We welcome every race to our shores in the vessels of other nations. Our enormous surplus, which feeds the world, is for others to bear away. We gaze at the leviathans of commerce entering our harbors and darkening our sky with the pennons of smoke; but the thunder of the engines is under another flag and the shouting of the captains is in an alien tongue. Others distribute the produce, capitalize the moneys, gather the glories, and elevate their institutions by the amenities and benignities of commerce; and we, boasting of our invention, heroism, and freedom, allow the jailers of a hated and selfish policy to place gyves upon our energy, and when we ask for liberty to build and for liberty to buy, imprison our genius in the sight of these splendid achievements.

"Mr. Speaker, if you would that we should once more fly our ensign upon the sea, assist us to take off the burdens from our navigation and give to us the first, last, and best—the indispensable condition of civilization by commerce—liberty."

Mr. Dingley, of Maine, representing the majority of the committee, said: "Mr. Speaker, I agree with the gentleman who has just taken his seat (Mr. Cox, of New York) that there is no subject before Congress more important than that to which this bill addresses itself. The humiliating fact which confronts us is that the American carrying-trade is rapidly declining and the American flag gradually disappearing from the ocean. The following statistics of the Treasury Department tell the story more strikingly than any language can do:

YEARS.	American tonnage in foreign trade.	American tonnage in coastwise trade.	Value of exports and imports.	Per cent. carried in American vessels.
1840.....	762,888	1,176,694	$231,227,465	82·9
1845.....	904,476	1,222,218	231,901,170	81·7
1850.....	1,489,694	1,797,825	330,087,058	72·5
1855.....	2,848,858	2,543,255	536,625,366	75·6
1860.....	2,379,396	2,614,867	762,268,550	66·5
1865.....	1,518,350	3,381,522	604,412,996	27·7
1870.....	1,448,846	2,638,247	991,896,889	35·6
1875.....	1,515,598	3,219,698	1,219,434,544	25·8
1880.....	1,314,402	2,637,686	1,618,770,683	17·4
1881.....	1,297,035	2,646,011	1,675,024,318	16·0
1882.....	1,259,492	2,873,688	1,567,071,700	15·5

"By reference to this table it will be seen that the coastwise trade of the United States is prospering, as well as all our other protected interests. Restricted as it is to American vessels, without competition from abroad, it occupies precisely the same position as all other domestic interests. While the statistics show only a small gain in tonnage over that exhibited in 1855, yet there has been such an increase of steamers as to add materially to the actual carrying-tonnage of vessels engaged in the coastwise trade of the country. In 1855, estimating one ton of steam-vessels as equal to four of sailing-vessels, which is very near the fact as to vessels engaged in the coastwise trade,

we had the equivalent of 4,581,451 tons of sailing-vessels engaged in the coastwise trade.

"In 1881 we had on the same basis the equivalent of 5,975,078 tons, showing a gain in the actual carrying capacity of our coastwise tonnage of 1,393,627 tons, or 30 per cent. It is to be borne in mind also that this increase has been in the face of the fact that the freight capacity of competing railroads has increased 120 per cent. during the last decade. So far, then, as the coastwise trade is concerned it is in a prosperous condition, and while some burdens have been pointed out which should be removed, yet on the whole we may point to it as having to-day more than three times the tonnage of the United Kingdom of Great Britain engaged in similar coastwise trade.

"But it is when we turn to our foreign carrying-trade that we find a humiliating story, told by the statistics of the Treasury Department. The salient facts of these statistics are these: In 1840 82·9 per cent. of all the exports and imports of the United States was carried in American vessels, but in 1882 only 15·5 per cent. was thus carried. Here in forty-two years has been a decline of 67·4 per cent. in the foreign carrying-trade of the United States.

"Looking still closer, as to the time when this decline took place, we find that 16·4 per cent. of it was before the civil war, and 12·2 per cent. since the war, and that the enormous decline of 38·7 per cent. took place during the four years of the conflict. It will thus be seen that the decline of our carrying-trade dates from 1855, and that the decadence before the war was as great as the decline which has taken place since the war.

"We also find, looking at this period, that the decline in the construction of vessels for employment in the foreign trade was as rapid before the war as during any other period since in the history of this country. In 1855 there were 507 vessels built in the United States for the foreign carrying-trade, the highest point reached in our history. In 1856 the number declined to 463; in 1857 to 307; in 1858 to 108; and in 1859 to 107.

"I allude to these facts, Mr. Speaker, in order to remove the impression which has obtained in many quarters, that the decline of our foreign carrying-trade began with the war.

"Now, Mr. Speaker, without going further into the details of that decline, it is important we should be enabled to fix specifically the cause or causes of this decline in order to provide a remedy for it.

"And in the first place I wish to show that the cause of this decadence was not, as my friend from New York (Mr. Cox) alleges, because our commerce has declined. That gentleman was pleased to say that the high tariff of 1861 had caused a decline of our commerce, and that a decline in our exports and imports to be carried necessarily had resulted in giving ocean-carriers less to do.

"It is not true, Mr. Speaker, that there has been any decline in the foreign commerce of this country since the war. At no period in the history of this country has our foreign commerce increased more rapidly than since 1865. From 1850 to 1880 the population of this country increased 115 per cent., while our foreign commerce increased during that same period 400 per cent., showing that our exports and imports have increased over our population nearly 300 per cent.

"The gentleman from New York was pleased to intimate that the tariff of 1861 had repressed our foreign commerce, which the tariff of 1846 had fostered, and to give this as a reason for the decline of our foreign carrying-trade. But the facts are against him. During the fifteen years from 1846 to 1861, the foreign commerce of this country increased $525,000,000; but between 1865 and 1880 this commerce increased $1,000,000,000. In 1855 the imports and exports of the United States were $536,625,366, of which about $405,000,000 were carried in American vessels, and only $131,000,000 in foreign vessels. In 1880 the exports and imports of the United States were $1,613,770,633, of which American vessels carried only about $280,000,000. If American vessels had carried the same proportion of the imports and exports of the United States in 1880 which they did in 1855, there would have been $1,200,000,000 for American tonnage, but instead of that our vessels actually carried less than one fourth of that.

"Looking more closely at the figures, we find that neither the so-called revenue tariff of 1846, nor the modified revenue tariff of 1857, nor the so-called protective tariff of 1861, has exerted any influence over the rise and fall of our foreign carrying-trade. Under the tariff of 1842 our carrying-trade prospered; under the tariff of 1846 it prospered for nine years, and then steadily declined during the remaining six years before the tariff of 1861 was enacted.

"So, Mr. Speaker, we must look for the causes of the decline of our foreign carrying-trade beyond the tariff. Our exports and imports, which represent commerce, have been spread out in every direction, and yet our American carrying-trade has been constantly declining, and consequently it is not any decline of commerce which has caused the difficulty.

"But my friend from New York was pleased to say that the tariff of 1861 prevented any successful competition with the ship-builders of the Clyde in the construction of iron vessels, the inference being that if we had continued the tariff of 1846 all would have been well.

"Let us look at this claim. The duty on iron imposed by the tariff of 1846 was 30 per cent., and the duty on iron imposed by the tariff of 1861 averaged about 40 per cent. Now, this difference of 10 per cent. in these tariffs made a change in the cost of the iron used in ship-building of only a little more than one

quarter of a cent per pound. What would one quarter of a cent a pound have done for us in the competition with English iron-ship builders? Nothing at all. Consequently the difficulty in the construction of iron vessels under the tariff of 1846 was practically as great as the difficulty in their construction under the tariff of 1861.

"I have alluded to this point merely to show that the causes of the decline of the American foreign carrying-trade are outside of any controversy between the friends of a tariff for revenue and a tariff for protection.

"Prof. Sumner, perhaps the ablest advocate of free trade in the United States, thus brushes aside the tariff argument of the gentleman from New York:

"No doubt these changes (from wood to iron and sails to steam) have been the chief cause of the decline of ship-building in this country, and legislation has had only incidental effects. It is a plain fact of history that the decline in ship-building began before the war and the high tariff.—*North American Review*, No. 132.

"It is important, Mr. Speaker, that we should brush aside all of these things which have nothing to do with the problems under consideration, and endeavor to come down to the facts we are investigating and ascertain the causes and devise remedies for the difficulty.

"The gentleman from New York was pleased to intimate that one great cause of the success of the British carrying-trade as against that of the United States, was due to the fact that in 1849 Great Britain modified her navigation laws so as to admit to registry under her laws foreign-built vessels. Now, I have to reply to that suggestion that the facts show quite otherwise. This modification of the British law took place in 1849, it is true; and as its influence was exerted at once, we should reasonably expect, from the importance assigned to the free-ship remedy, a steady gain from that time forward of British tonnage as against American. But an investigation will show the fact is exactly the reverse. From 1849 for three years the merchant-marine of the United States increased more rapidly, as compared with that of the United Kingdom, than ever before in the history of this country. Between 1849 and 1855 the merchant marine of the United States increased 1,877,985 tons, and that of the United Kingdom only 894,828. It was during this period of six years' operation of the free-ship policy of Great Britain that the American merchant marine enjoyed its highest prosperity. This prosperity would have increased after 1855 had it not been for a new factor which appeared in the revolution then fairly inaugurated from wood to iron and sails to steam.

"Even Mr. W. S. Lindsay, the most prominent promoter of the British legislation of 1849, is compelled to admit, in his 'History of Merchant Shipping,' that it was in fact the revolution from wood to iron and sails to steam, and not the free-ship law, that gave the English merchant marine the advantage of our own which has resulted so disastrously to American tonnage. Speaking of the results of the first year's operations of this law, he says:

"Our [the British] ship-owners naturally viewed with great alarm the rapid strides made by American shipping. Nor were their fears allayed by a reference to the Board of Trade returns, *wherein it appeared that while the increase of British shipping had in the year previous to repeal been* 393,955 *tons, there had been a decrease in the year after repeal of* 180,576 *tons. Our position appeared, therefore, critical;* and had it not been for the resources we held within ourselves [referring to iron, coal, and cheap labor] and the indomitable energy of our people, foreign shipping might then and there have gained an ascendency which might not afterward have been easily overcome. . . . *We had one advantage which our great American competitor did not possess.* We had iron in abundance, and about this period we were specially directing our attention to the construction of iron ships to be propelled by the screw.

"Speaking subsequently of the contest for supremacy of the seas between 1853 and 1854, the same distinguished English ship-builder says:

"A very large amount of capital had been invested by Americans in the famous ships employed in the California trade; but even these before the close of 1854 were becoming unremunerative, owing to the competition of British iron and screw steamers, which were the main weapon whereby we bade defiance to the competition of all other nations in the general ocean race then just commenced.—Lindsay's "Merchant Shipping," page 358.

"Could we have a stronger confirmation of the fact that it was not the free-ship policy which England inaugurated in 1849 that gave her an advantage over us, but that it was solely the accidental revolution in the ocean carrying-trade which saved her from being distanced more and more by our wooden clipper-ships? We are thus brought to the conclusion that the inception of the decline of our foreign carrying-trade between 1855 and 1861 was due to two causes:

"1. The great change in over-ocean transportation which was gradually being made from wooden vessels to iron, and from sails to steam and the screw-propeller—a change which gave England, with her cheap labor and her mines of coal and iron near the sea-shore, a greater advantage than we had when wood was the only material of which vessels were built.

"2. The adoption in 1854 of the policy of removing every burden from and giving every possible advantage to her merchantmen, coupled with liberal appropriations in the form of postal pay, as well as subsidies, to secure the establishment of steamship lines to all parts of the world; while at the same time the American Government neither lifted a burden nor offered any encouragement to her marine.

"It was not until 1855–'56 that these causes began to exert a marked influence and to change the current of the foreign carrying-

trade. Prof. Sumner agrees substantially with this view, and I may add that even Mr. Wells, in his work on the American merchant marine, concedes that these were the real, substantial, and efficient difficulties which came upon us and changed the current of our foreign carrying-trade.

"So long as wooden sailing-vessels controlled the foreign carrying-trade of the world we had an advantage in the construction of vessels over any other nation in the world. We had the cheaper material, and this superior cheapness of material enabled us to bridge over the difference in labor; for it must be remembered that in the construction of a wooden vessel, as compared with the construction of an iron vessel, the wood or timber when it is cut from a tree is further advanced toward the completion of a vessel than is the iron when the ore has been dug from the mines, smelted, and rolled or hammered into bars, angles, and plates. The amount of labor to be put upon the wooden vessel after the tree has been felled is less than one half of the amount of labor that is required to build the iron vessel after the ore is taken from its bed.

"Therefore, Mr. Speaker, so long as we occupied the vantage-ground, possessed when wooden sailing-vessels ruled the sea, no nation could cope with us.

"At that time, also, all our laws relating to our merchant marine were precisely the same, with the same difficulties, with the same discriminations as the English laws. But in 1852, 1853, and 1854 the Parliament of England began the revision of her merchant shipping laws, and removed every burden from her vessels engaged in the foreign trade; while we looked on, too confident in the position we occupied. And there, Mr. Speaker, was the fatal error in the policy of this country. From 1855 to 1861 there was a steady decline year by year, as rapidly as at any time since the war, in our foreign carrying-trade. If the American Congress at that time had come forward and lifted all the burdens, and amended the shipping laws so as to give the same advantages to our vessels as the English Government gave to their vessels, and if in addition to that the American Government had given such generous mail contracts for the establishment of mail steamship lines as the English Government was giving, then we should not have to-day to lament over so humiliating a decadence of American shipping.

"But more than that, Mr. Speaker. In 1861 came the terrible conflict of arms, the civil war, which engrossed the energies and the capital of this country for four long years. Instead of building up our shipping and our resources, we were tearing down; instead of constructing vessels, we were destroying them with powder and shot and shell. But what was England doing all that time? She looked on and laughed at our discomfiture. She let the Alabama sail out of her ports without hindrance, and more than one third of all our tonnage engaged in the foreign carrying-trade was swept from the ocean, either by capture, or by sale to avoid capture.

"During this time England was intrenching herself in the position she occupied. She was building up great iron ship-yards, and getting an advantage difficult to overcome.

"If our hands had not been tied during that time, unquestionably we should have adopted some policy that would have met the advances of England in this race on the ocean. But we could do nothing, and when the war closed we saw not only one third of our ships swept from the ocean, but also the iron ship-yards of Great Britain firmly established, and built up, too, by every possible encouragement. We saw dock-yards built from tonnage taxes exacted in part from American vessels that entered British ports, with all the ingenuity that could possibly be devised, even going so far in order to establish steamship lines that she made contracts with various navigation companies to put on steamship lines, engaging that the Government would secure to the proprietors of the lines 8 per cent. dividend.

"This was the course of England at the time when our hands were tied. And then, when we came out of the war, Mr. Speaker, our hands were again tied—tied because of the indirect results of the war. Bear in mind that we came out of the conflict with a depreciated currency and inflated prices. We came out with speculation raging over the land, and the result was that, with the engrossment of the public mind in the problems of reconstruction, it was practically impossible until the resumption of specie payments, and until the large profits that arose from the opening of the far West and from the building of railroads had passed away, and until the rate of interest on capital came back to the normal figure, and even below—it was impossible, I say, until about the year 1878 or 1879, for us to adopt any efficient measures that could have built up the American foreign carrying-trade.

"It seems to me, Mr. Speaker, that instead of being amazed at the rapid decline of the American foreign carrying-trade under these circumstances, we should almost wonder that it has stood the trial so well.

"Now, Mr. Speaker, having discussed what seems to me to be the causes of the difficulty in which we are placed, I wish to approach next the question of remedies. The foreign carrying-trade, unlike the coastwise trade, and unlike any other business we have in this country, is an unprotected trade. It must be carried on on the highway of the ocean, where competition from all nations meets it on a common platform. No possible device that we can make, no possible legislation that is open to us after our maritime reciprocity treaties have been entered into—for it must be remembered that while formerly there was a 10 per cent. discriminating duty in favor of imports in

American vessels, long ago treaties entered into at a time when wooden sailing-vessels enabled us to control the ocean, have prevented us from making any arrangement or giving any preference to American vessels over vessels of foreign nations.

"Consequently we are in this difficulty in respect to the tonnage-tax. If we abolish the tax as to American vessels, by that very act we abolish it as to foreign vessels. We can not take a single step in the direction of endeavoring to protect our own vessels by direct legislation, without giving the same advantage to the foreign vessels that come into competition with them. While giving every other interest in the country the benefit of the protection of either a high or a low tariff, we compel our vessels engaged in the foreign trade to go out upon the highway of the ocean and meet the open competition of other nations.

"Of course it is too late for us to go back now on the policy of maritime reciprocity, which was adopted in the days when we could control the ocean. We have to devise remedies in spite of these difficulties.

"There are two things that must be done if we are to revive the American foreign carrying-trade. What are they? First, we must by our legislation or otherwise make it possible for a vessel floating the American flag to carry our exports and imports as cheaply as the vessel of any other nation can do. The nation which will do the carrying-trade of the world the most efficiently and cheaply will secure it, and in securing it will control the ocean.

"Then, after we have done that, we must also make it possible for an American ship-owner or would-be ship-owner to obtain vessels for his trade at no higher cost to him than to our foreign competitors. I need not argue those two propositions; they are self-evident. The problem for us to solve, therefore, is how to do these two things.

"First, as to the running of vessels after they are built; for obviously there can be no useful end attained by any policy to secure cheap vessels to American ship-owners or would-be ship-owners unless after they obtain those vessels they can run them as cheaply as our English rivals.

"Now, some one has said—not in the course of this debate, but it has been said—that there was no difficulty in that direction. I wish to say, Mr. Speaker, that the greatest difficulties lie right here. And yet the difficulties are such that they can be not entirely but largely overcome by legislation.

"I wish to cite as proof that there is difficulty here this simple fact: for ten years we have been enabled to build first-class wooden vessels as cheaply as any other nation in the world, quality for quality. In my own State of Maine, and even in the district which I represent, during the last year over 40,000 tons of wooden vessels, the finest ever constructed, were successfully built. To be sure, a large portion of those vessels were for the coastwise trade; but some of them were for the foreign trade.

"The fact has developed itself unmistakably that the only reason we do not extend that trade further, that we do not build more wooden vessels for the foreign trade, is that after we have built them we can not run them as cheaply as our foreign competitors.

"Why not? It has been said that the question of wages of seamen is one that meets us here and can not be overcome. I wish to show you, Mr. Speaker and gentlemen, that in the foreign carrying-trade the question of wages, especially as to sailing-vessels, is not one that seriously interferes with us. And why? The American vessel engaged in the foreign carrying-trade a large proportion of the time is in foreign ports, and so has the privilege of engaging her seamen at any port she may visit. It may be that in shipping men at San Francisco and New York there is a slight discrimination —not much, by-the-way—because from the nature of the case, competing upon the ocean on the same platform, wages of seamen have been brought down to a common standard. The difference in price between the wages of seamen in New York and Liverpool is trifling. Practically, with the liberty which a vessel has when it enters a foreign port to ship a new crew, it may be said that so far as sailing-vessels are concerned this is not an element that enters seriously into the question.

"So far as steamships are concerned, which from the very nature of the trade require a permanent crew, there is some difficulty, but not enough to seriously interfere with the extension of our foreign carrying-trade.

"Then, what are the difficulties in the way? I may say to you, Mr. Speaker, that they are largely difficulties which legislation has erected or may remove. I wish to call attention to some of those difficulties, difficulties which this bill, unanimously reported by both the Joint Select Committee on Shipping and the Committee on Commerce, has sought to remove.

"When the committee came to consider the problem of how to build iron vessels under such a condition of facts, there was one principle which they unanimously accepted, and that was that no policy having reference to the supply of iron steamships to revive the American foreign trade would be wise or successful unless it looked to the building, ultimately at least, of iron steamships in our own country. There was no difference of opinion on that point. All said we must look to that result, and that any policy which could not accomplish this would be a fatal one—fatal, first, because all history proves that no commercial state ever maintained its supremacy on the ocean unless it built its own vessels as well as sailed them; and, secondly, because in time of peace no nation could maintain its commercial independence unless it had the facilities within its own grasp and its own control for

shipping its own merchandise. Suppose a war to-day should break out in Europe, and England should engage in conflict with a country able to put cruisers upon the sea—privateers, it may be—when 85 per cent. of the produce of the West is being shipped in foreign, mainly in English vessels—in such an event all the produce of the West shipped in English vessels would be liable to seizure and confiscation by the power engaged in war with Great Britain. Therefore, I say in such a case as that, the American people, and particularly the people of the West, would suffer more than the belligerents themselves.

"Again, thirdly, no policy is wise or safe which contemplates resorting to foreign countries for the purpose of obtaining our ships for our American marine, because no nation can maintain its independence and defend itself in time of war unless it is able to improvise and build its own vessels. Consider for a moment in what situation we should have been placed in 1862 if we had been obliged to send to England to have the little Monitor built for us. What would have become of our ports, of which the gentleman from New York (Mr. Hewitt) spoke so eloquently the other day, if at the breaking out of the war we had been obliged to resort to the nation which tried to crush us? For it must be borne in mind that the mercantile marine is the militia of the sea, occupying the same position on the ocean that the State militia do on the land. No nation ever maintained its power upon the ocean unless it had a commercial marine of its own. Therefore I say to you that it is more than a question of business, more than a question of whether we shall have a part of this carrying-trade. It is a question of whether the nation shall be able to defend itself; it is a question of national security and national independence.

"No policy, therefore, that looks to making this nation dependent upon a foreign nation, upon a nation like England, for the supply of vessels for its merchant marine can be wise or safe.

"This to my mind is the serious objection to the proposition of the gentleman from New York (Mr. Cox) to authorize the purchase and American registration of foreign-built ships. Such a policy can not develop iron-ship building here, for the simple reason that it is impossible for any ship-builder to pay 60 per cent. more for labor here and build ships in close competition with the Clyde. There can be only one way in which our builders could hope to compete on the free-ship basis, and that is by cutting down the wages of our laborers 60 per cent. This is simply impossible.

"Therefore I say that the free-ship plan can not develop iron-ship building in this country. It could do it in Germany, where wages are as low as in England, or lower, but it could not do it in the United States, with our wages for labor. It may as well be said first as last that the free-ship plan would be practically a decision to give up the attempt to build our own vessels.

"That provision of our navigation laws which restricts the right of American registry to vessels built in this country was not the narrow, unstatesmanlike, and unwise legislation which the gentleman from New York represents it to be. It was enacted at the very foundation of the Government, in response to the following suggestion of Washington to Congress:

"We should not overlook the tendency of a war, and even preparations for a war, among the nations most concerned in active commerce with this country to abridge the means and thereby at last enhance the price of transporting its valuable productions to their proper market. I recommend it to your serious reflections how far and in what mode it may be expedient to guard against embarrassments from these contingencies by such encouragement to our own navigation as will render our commerce and agriculture less dependent on foreign nations.—*Washington's Second Annual Address*, December 8, 1790.

"Those laws have stood from that day to this. They have come down to us with the official approval of Washington himself. They come to us with the indorsement of Jefferson, of Adams, of Madison, of Monroe, of all the fathers of the republic. They come to us in this shape because the fathers of the republic said we could not successfully defend ourselves unless we built up a merchant marine constructed in our own country.

"Two lines of policy were considered by the committee, both of which looked to making it feasible to build our ships at home. One policy proposed, and that which I think all the members of the committee would be willing to accept as a complement to the section which has been reported, is to provide that materials advanced to the point of bars, angles, rods, etc., may be imported in bond duty free when they are to be used in the construction of vessels for the foreign trade.

"But the committee were conscious that with a free-material clause standing alone, with 3,000 miles of ocean between us and England, it would not be wise to make us entirely dependent upon England for the materials for the construction of our ships. We believe there should be coupled with a plan of that kind some provision which would enable our builders to use materials produced in this country by American workmen at higher-cost labor.

"The committee recommend the adoption of a section providing for the importation of materials from foreign countries duty free, and another section providing for a drawback, so called, whenever the materials used are of American production, a drawback to the extent of the duty on the foreign material of the same kind. This drawback would practically cover the difference between the cost of building an iron steamship in this country and in England, which is about 30 per cent. This drawback would practically come from the tonnage-tax, which, as I have already said, we

should be willing to abolish if five sixths of it did not fall on foreign vessels.

"The committee believed that we might use this tax in the way of building up our own commercial marine, so as to enable our ship-builders to use American materials, by giving them a drawback to the amount of the duty, at the same time giving builders the privilege of importing materials in bond duty free. We were thus for placing home materials and foreign materials on substantially the same platform, and giving the ship-builder or rather the ship-owner, for the drawback goes to the original owner of a vessel, the choice of American or foreign materials, without discriminating against home materials.

"The committee believed that this provision, without taking any money from the Treasury, which comes from ordinary sources of revenue, and giving the ship-owner the advantage of importing in bond materials duty free from foreign countries, or of using home materials, would be likely to build up iron-ship building in this country, and revive the American foreign carrying-trade. Such was the opinion of the San Francisco Board of Trade, which proposed the plan, and such is the opinion of the New York maritime associations and ship-owners of experience.

"A million and a half of dollars annually comes from the tonnage-tax, and in the next five years the tax will amount in the aggregate to ten millions of dollars. It is a tax five sixths of which is paid by foreign vessels, and which we may properly use to encourage the development of the American merchant marine.

"It is true that the Government of Great Britain, as a government, does not impose what is called a tonnage-tax, but it imposes a light-dues tax, which, as I have said, is really a tonnage-tax. More than this; in the case of a large proportion of the cities of Great Britain having harbors or rivers capable of improvement, the corporation of the city is authorized to impose a tax upon all tonnage that may enter the port, for the purpose of paying the expenses of such river or harbor improvements.

"Take, for instance, the river Clyde, which was originally but a brook, so to speak. The corporation of Glasgow was authorized to deepen and widen the channel of that river and to build docks, with the view of fitting that river to be the center of the iron-ship yard system of the world. The corporation of Glasgow is authorized to impose upon every vessel entering the port a tonnage-tax for the purpose of defraying the expense of improving the river. American vessels entering the Clyde to-day pay to the corporation of Glasgow a tax which is used to defray the expenses of deepening and widening the river and preparing it not only for navigation but also for the iron-ship yard center of the world.

"Gentlemen may say that Great Britain herself has not done this; but the Government of Great Britain has authorized the corporation of Glasgow to do this work—to widen and deepen the channel of the river and to build dock-yards; the Government of Great Britain has authorized the imposition of a tonnage-tax upon American as well as other vessels entering that port, for the purpose of defraying the expenses of improving that river. Yet gentlemen sometimes tell us that Great Britain has not aided in all these enterprises; that she has let her shipping severely alone, allowing her own local communities even to deepen and widen her rivers. But, in point of fact, Great Britain has authorized her municipal corporations to do what she has not done herself—to collect from the merchant marine of the world a tonnage-tax to pay the expenses of river and harbor improvements. What she has done through her city corporations she has to all intents and purposes done for herself.

"Now, Mr. Speaker, it seems to me wise that Congress, imposing as it does a tonnage-tax which, if circumstances permitted, we should be glad to abolish, should take the amount of this tax and devote it, not to the widening or deepening of any river with the view of building up commerce and furnishing facilities for ship-yards, but indirectly expend it for the purpose of enabling the people of our country to build their own vessels, while at the same time we establish our merchant marine so that we shall not be dependent upon the other nations of the world. It seems to me that this may be done without taking a single dollar of the revenue that may be derived from any of the ordinary sources of taxation. And it may be limited, if you please, to the amount which may be collected from the tonnage-tax, because if the mode of collecting the tax be changed to the English system of a tax on each entry, instead of one million and a half we would have two million dollars and over. Thus we shall imitate the policy of Great Britain in principle, however different may be the application.

"I wish simply to say in conclusion that this is more than a local question. It is not a question of building up a ship-yard here and there. It is not alone a question of building up even a most beneficent industry in our country. It is more than that, it is a national question which reaches every part of this country. The great West is interested in this question if possible more than any other part of the Union, because so large a portion of our exports is produced there. It is indispensable to her that there should be an American merchant marine, not simply to compete with a foreign merchant marine, but an American merchant marine upon which we may rely in time of war. It is more even than that. It is a question of national safety. While Great Britain to-day is doing all she can to develop her iron-ship yards, while she is building 81 per cent. of all her war-vessels and war-engines in private iron and steel-ship yards, why should

we not do something for the encouragement of our merchant marine? It is a matter which concerns the safety of the nation; it concerns our independence; it concerns our national prestige.

"When I was abroad in Europe, going from port to port, I saw so rarely the American flag that it was the source of humiliation to me, for I felt the nation was better known by the flag which floated from the mast-heads of its ships and exerted a greater influence in consequence of that than anything else. We are known abroad by the flag which floats in foreign harbors. Our influence is felt abroad in proportion to the extension of our merchant marine. Our commerce is more or less dependent on it, as well as our independence in peace and our safety in war. I beg of you, gentlemen, therefore, however many differences of opinion there may be as to methods, to be willing to try something, to take a step forward in this matter, for if we go on ten years more in the way we have been going on for twenty-five years past, the American merchant marine and the American flag will have faded from the ocean."

Mr. Springer, of Illinois, argued that there was nothing in the Constitution to authorize the prohibition of State or municipal taxation on vessels engaged in the foreign trade.

In Committee of the Whole, section 11 of the bill as reported was amended by adding a proviso "that this section shall not apply to vessels engaged in the whaling business." An amendment proposed by Mr. Murch, of Maine, by way of substitute, and designed to maintain the practice of paying advance wages to seamen, was rejected. The following further amendment to section 11 was then adopted:

And that all laws or parts of laws requiring the payment of any remuneration to the shipping commissioner for the shipment of seamen, if shipped by said master or owners, be and the same are hereby repealed: *Provided*, That the duties of the shipping commissioner at home ports shall be performed by the collectors of the several ports of the United States, and that no fees shall be charged for such services.

Section 15 was stricken out. Section 16 was amended to read:

That instead of the assessment of forty cents per month upon seamen engaged in the foreign carrying-trade, authorized by sections 4585 and 4587 of the Revised Statutes of the United States, there shall hereafter be assessed and collected twenty cents.

Section 17 was amended to read as follows:

SEC. 17. That the individual liability of a ship-owner shall be limited to the proportion of any or all debts and liabilities that his individual share of the vessel bears to the whole. And the aggregate liabilities of the owners of the vessels on account of the same shall not exceed the value of such vessel: *Provided*, That this provision shall not affect the liability of any owner incurred previous to the passage of this act, nor prevent any claimant from joining all the owners in one action. Nor shall the same apply to wages due to persons employed by said ship-builder.

For section 14 the following substitute was adopted:

That section 2514 of the Revised Statutes be amended so as to read as follows:

That all materials of foreign production, to be manufactured in this country into articles needed for and used in the construction, equipment, repairs, or supplies of American vessels employed or to be employed exclusively in the foreign trade, including the trade between the Atlantic ports and Pacific ports of the United States, may be withdrawn from bonded warehouse free of duty, under such regulations as the Secretary of the Treasury may prescribe; and if the duty shall have been already paid on such materials so used, the same shall be refunded and repaid to the owner or owners of such vessel so using them or their legal representatives.

Section 15 was amended by adding the following provision:

Provided, That nothing in this section shall be construed to repeal section 2793 of the Revised Statutes: *And provided also*, That the aggregate duty imposed under this section in any one year upon any vessel engaged in no other foreign trade than the trade between the United States and the Dominion of Canada or the Republic of Mexico, or any ports or places south of Mexico down to and including Aspinwall and Panama, or any ports or places in the West India Islands, shall not exceed 30 cents per ton.

The following new sections were added to the bill:

Whenever any fine, penalty, forfeiture, exaction, or charge arising under the laws relating to vessels or seamen has been paid under protest to any collector of customs or consular officer, and application has been made within one year from such payment for the refunding or remission of the same, the Secretary of the Treasury, if on investigation he finds such fine, penalty, forfeiture, exaction, or charge was illegally, improperly, or excessively imposed, shall have the power, either before or after the same has been covered into the Treasury, to refund so much of said fine, penalty, forfeiture, exaction, or charge as he may think proper from any moneys in the Treasury not otherwise appropriated.

That section 2966 of the Revised Statutes be amended by striking out the words "propelled in whole or in part by steam"; so that the section as amended shall read as follows:

SECTION 2966. When merchandise shall be imported into any port of the United States from any foreign country in vessels, and it shall appear by the bills of lading that the merchandise so imported is to be delivered immediately after the entry of the vessel, the collector of such port may take possession of such merchandise and deposit the same in bonded warehouse; and when it does not appear by the bills of lading that the merchandise so imported is to be immediately delivered, the collector of the customs may take possession of the same and deposit it in bonded warehouse, at the request of the owner, master, or consignee of the vessel, on three days' notice to such collector after the entry of the vessel.

That section 2872 of the Revised Statutes be amended by adding thereto the following:

When the license to unload between the setting and rising of the sun is granted to a sailing-vessel under this section, a fixed, uniform, and reasonable compensation may be allowed to the inspector or inspectors for service between the setting and rising of the sun, under such regulations as the Secretary of the Treasury may prescribe, to be received by the collector from the master, owner, or consignee of the vessel, and to be paid by him to the inspector or inspectors.

On the adoption of section 18 a vigorous debate occurred, various gentlemen opposing it as creating a subsidy to ship-builders, and others pressing strongly for a substitute in favor of

free ships. Finally, the following substitute was adopted: yeas, 135; nays, 85; not voting, 69:

SECTION 18. When any American vessel shall be constructed, equipped, repaired, refitted, or supplied with ship's stores for the foreign trade, including the trade between the Atlantic and Pacific ports of the United States, in whole or in part, of materials of the production of the United States, the owner or owners of such vessel shall be entitled to receive and collect from the United States a drawback or sum equal in amount to the duty which would have been collected on imported materials of like description and of equal quality with the American materials used in the construction, equipment, engines, boilers, attachments, and other appurtenances of such vessel, including repairs, outfits, and supplies: *Provided*, That in ascertaining such drawback the duty shall be computed on iron and steel advanced in manufacture not beyond the point of plates, angles, bars, and rods: *Provided also*, That such drawback on any article shall not exceed the difference between the market price of such article in the collection district in which the vessel shall be built, repaired, refitted, or supplied, and the market price of a similar article in the city of Glasgow, or the river Clyde, and shall not exceed $10 per ton admeasurement in the case of the original construction of any sailing-vessel, and $25 per ton in the case of the original construction of any vessel propelled in whole or in part by steam; and, in the aggregate, the drawback or sum paid under this section shall not in any one year exceed the amount of tonnage-tax collected in such year: *And provided further*, If the fund herein provided in any one year is insufficient to pay in full the amount of claims preferred against it, then it shall be prorated among the claimants and accepted by them in full payment of all claims against the United States arising out of this law: *And provided further*, That this section shall apply only to vessels commenced, repaired, refitted, or supplied after the passage of this act.

That from and after the 1st day of April, 1883, any citizen or citizens of the United States may purchase the whole of any steam or sail vessel constructed mainly of steel or iron, no matter where said vessel may have been built, whether within the United States or in a foreign country, or whether said vessel may have been owned in whole or in part by an alien or aliens; and said vessels shall be registered free of duty as to the hull, spars, appliances, outfit, and equipment (including boilers, engines, and machinery, if a steam-vessel) as a vessel of the United States by the collector in any port of entry of the United States to whom application for such registry may be made by said citizen or citizens, in the same manner as though said vessel had been built in the United States: *Provided, however*, That this section shall apply only to vessels of more than 1,500 tons registry, to be employed in the foreign carrying-trade exclusively, and not in the coastwise trade, excepting between ports on the Atlantic and ports on the Pacific ocean: *Provided*, That all or any part of the materials, whether wood, steel, or iron, copper, yellow metal, bolts, spikes, sheathing, treenails, canvas for sails, whether flax or cotton, rigging and cordage, whether hemp, manila hemp, or iron wire; anchors and cables, iron plates, castings, and forgings, anglo-irons, beams, masts, yards, rivets, bolts, nuts, screws, engines, boiler plates and tubes, and machinery, and all other materials and appliances which may be necessary for the construction and equipment, in whole or in part, of vessels to be built and furnished in the United States after the 1st day of April, 1883, for the foreign trade, including the trade between Atlantic and Pacific ports, may be imported in bond under such regulations as the Secretary of the Treasury may prescribe; and upon proof that such materials have been used for such purpose, no duties shall be collected or paid thereon.

Section 22 was stricken out altogether, in deference to the opinion of those who opposed its constitutionality.

Finally, the measure was amended by striking out the eighteenth, nineteenth, and twentieth sections relating to subsidies and free ships, and the machinery for carrying out the subsidy and free-ship provisions. The vote on this radical change was as follows:

YEAS—Anderson, Armfield, Atherton, Atkins, Barr, Bayne, Berry, Bingham, Bisbee, Blackburn, Bland, Blount, Bowman, Briggs, Brumm, Buchanan, Buck, Julius C. Burrows, Butterworth, Cabell, Caldwell, Campbell, Carlisle, Chace, Clardy, Clark, Clements, Cobb, Converse, Cook, Covington, William R. Cox, Crapo, Cravens, Crowley, Culberson, Cullen, Curtin, George R. Davis, Dawes, Dezendorf, Dingley, Ellis, Ermentrout, Errett, Ford, Forney, Frost, Geddes, Godshalk, Grout, Hall, N. J. Hammond, Harmer, Benj. W. Harris, Haseltine, Haskell, Hatch, Heilman, Herbert, Hill, Hitt, Holman, House, Hubbs, Humphrey, Jacobs, Jadwin, Geo. W. Jones, Phineas Jones, Joyce, Kelley, Ketcham, Klotz, Knott, Lacey, Ladd, Latham, Le Fevre, Lewis, Lindsey, Lord, Lynch, Mackey, Matson, McClure, McKinley, Jas. H. McLean, McMillin, Miles, Miller, Mills, Money, Moore, Morey, Morrison, Mosgrove, Moulton, Murch, Mutchler, Neal, Norcross, Oates, O'Neill, Peelle, Peirce, Pettibone, Phister, Prescott, Randall, Ranney, Ray, Reed, Reese, John B. Rice, Theron M. Rice, Wm. W. Rice, Rich, Ritchie, Geo. D. Robinson, Jas. S. Robinson, Russell, Ryan, Scranton, Shallenberger, Jas. W. Singleton, Otho R. Singleton, Skinner, Smalls, A. Herr Smith, Sparks, Spooner, Springer, Steele, Stockslager, Taylor, Thomas, P. B. Thompson, Wm. G. Thompson, Amos Townsend, R. W. Townshend, Henry G. Turner, Oscar Turner, Tyler, Vance, Van Aernam, Van Horn, Van Voorhis, Wait, Walker, Ward, Warner, Watson, Webber, Wellborn, Whitthorne, Chas. G. Williams, Willis, Willite—159.

NAYS—Aiken, Aldrich, Barbour, Beach, Belmont, Bliss, Bragg, Buckner, Candler, Cannon, Carpenter, Cassidy, Samuel S. Cox, Cutts, Lowndes H. Davis, Deering, De Motte, Dowd, Dwight, Evins, Sewell S. Farwell, Flower, Garrison, Guenther, Hardenbergh, Hardy, Hepburn, G. W. Hewitt, Hoge, Jorgensen, Kasson, King, Leedom, McCoid, McCook, Robt. M. McLane, Morse, Nolan, Page, Parker, Payson, Phelps, Scoville, Sherwin, Simonton, Dietrich C. Smith, Speer, Stone, Strait, Tucker, Updegraff, Upson, Wadsworth, Walter A. Wood.—54.

NOT VOTING—Belford, Beltzhoover, Black, Blanchard, Brewer, Browne, Jos. H. Burrows, Calkins, Camp, Caswell, Chapman, Colerick, Cornell, Darrall, Davidson, Deuster, Dibrell, Dugro, Dunn, Dunnell, Chas. B. Farwell, Fisher, Fulkerson, George, Gibson, Gunter, John Hammond, Henry S. Harris, Hazelton, Henderson, Herndon, Abram S. Hewitt, Hiscock, Hoblitzell, Hooker, Horr, Houk, Hubbell, Hutchins, James K. Jones, Kenna, Manning, Marsh, Martin, Mason, McKenzie, Muldrow, Pacheco, Paul, Pound, Reagan, D. P. Richardson, J. S. Richardson, Robertson, Robeson, Wm. E. Robinson, Rosecrans, Ross, Scales, Shackelford, Shelley, Shultz, J. Hyatt Smith, Spaulding, Talbott, Urner, Valentine, Washburn, West, White, Williams, Thomas, Wilson, George D. Wise, Morgan R. Wise, Benjamin Wood, Young—76.

The bill as amended then passed the House, Jan. 12, 1883. It came up for consideration in the Senate March 3, 1883, and was amended by striking out sections 13, 14, 15, and 22. It then passed that body.

The Fitz-John Porter Case.—The bill for the relief of Fitz-John Porter came up in the Senate

Dec. 28, 1882. It authorized the President to nominate and, by and with the advice and consent of the Senate, to appoint Fitz-John Porter, late a major-general of the United States volunteers and a brevet brigadier-general and colonel of the army, to the position of colonel in the army of the United States, of the same grade and rank held by him at the time of his dismissal from the army by sentence of court-martial promulgated Jan. 27, 1863, and, in his discretion, to place him on the retired-list of the army as of that grade, the retired-list being thereby increased in number to that extent. It was reported by the majority of the Military Committee and was in charge of Mr. Sewell, of New Jersey. Mr. Logan, of Illinois, presented a minority report in opposition to it.

Mr. Sewell of course based his argument on the finding of the advisory board appointed April 12, 1878, by President Hayes, and consisting of Maj.-Gen. J. M. Schofield, Brig.-Gen. Alfred H. Terry, and Col. and brevet Maj.-Gen. George W. Getty. He read many petitions, opinions, and memorials, in favor of the restoration of Fitz-John Porter, and cited the conclusions of the advisory board as follows:

These charges and specifications certainly bear no discernible resemblance to the facts of the case as now established. Yet it has been our duty to carefully compare with these facts the views entertained by the court-martial, as shown in the findings and in the review of the case which was prepared for the information of the President by the Judge-Advocate-General, who had conducted the prosecution, and thus to clearly perceive every error into which the court-martial was led. We trust it is not necessary for us to submit in detail the results of this comparison, and that it will be sufficient for us *to point out the fundamental errors, and to say that all the essential facts in every instance stand out in the clear and absolute contrast to those supposed facts upon which Gen. Porter was adjudged guilty.*

The fundamental errors upon which the conviction of Gen. Porter depended may be summed up in few words. It was maintained, and apparently established to the satisfaction of the court-martial, that only about one half of the Confederate army was on the field of Manassas on the 29th of August, while Gen. Lee, with the other half, was still beyond the Bull Run Mountains; that Gen. Pope's army, exclusive of Porter's corps, was engaged in a severe and nearly equal contest with the enemy, and only needed the aid of a flank attack which Porter was expected to make to insure the defeat and destruction or capture of the Confederate force in their front under Gen. Jackson; that McDowell and Porter, with their joint forces, Porter's leading, had advanced toward Gainesville, until the head of their column had reached a point near the Warrenton turnpike, where they found a division of Confederate troops, "seventeen regiments," which Buford had counted as they passed through Gainesville, marching along the road across Porter's front, and going toward the field of battle at Groveton; that McDowell ordered Porter to at once attack that column thus moving to join Jackson, or the flank and rear of the line if they had formed in line, while he would take his own troops by the Sudley Springs road and throw them upon the enemy's center near Groveton; that Porter, McDowell having then separated from him, disobeyed that order to attack, allowed that division of the enemy's troops to pass him unmolested, and then fell back and retreated toward Manassas Junction; that Porter then remained in the rear all the afternoon, listening to the sounds of battle and coolly contemplating a presumed defeat of his comrades on the center and right of the field; that this division of the enemy having passed Porter's column and formed on the right of Jackson's line, near Groveton, an order was sent to Porter to attack the right flank or rear of the enemy's line, upon which his own line of march must bring him, but that he had willfully disobeyed, and made no attempt to execute that order; that in this way was lost the opportunity to destroy Jackson's detached force before the other wing of Gen. Lee's army could join it, and that this junction having been effected during the night of the 29th, the defeat of Gen. Pope's army on the 30th thus resulted from Gen. Porter's neglect and disobedience.

Now, in contrast to these fundamental errors the following all-important facts are fully established:

As Porter was advancing toward Gainesville, and while yet nearly four miles from that place and more than two miles from the nearest point of the Warrenton turnpike, he met the right wing of the Confederate army, 25,000 strong, which had arrived on the field that morning and was already in line of battle. Not being at that moment quite fully informed of the enemy's movements, and being then under orders from Pope to push rapidly toward Gainesville, Porter was pressing forward to attack the enemy in his front, when McDowell arrived on the field with later information of the enemy, and later and very different orders from Pope, assumed the command, and arrested Porter's advance. This later information left no room for doubt that the main body of Lee's army was already on the field and far in advance of Pope's army in preparation for battle. Gen. McDowell promptly decided not to attempt to go farther to the front, but to deploy his column so as to form line in connection with Gen. Pope's right wing, which was then engaged with Jackson. To do this Gen. McDowell separated his corps entirely from Gen. Porter's, and thus relinquished the command and all right to the command of Porter's corps. McDowell did not give Porter any order to attack, nor did he give him any order whatever to govern his action after their separation.

It does not appear from the testimony that he conveyed to Gen. Porter in any way the erroneous view of the military situation which was afterward maintained before court-martial, nor that he suggested to Gen. Porter any expectation that he would make an attack. On the contrary, the testimony of all the witnesses as to what was actually said and done, the information which McDowell and Porter then had respecting the enemy, and the movement which McDowell decided to make, and did make, with his own troops, prove conclusively that there was left no room for doubt in Porter's mind that his duty was to stand on the defensive, and hold his position until McDowell's movement could be completed. It would have indicated a great error of military judgment to have done or ordered the contrary, in the situation as then fully known to both McDowell and Porter.

Gen. Pope appears, from his orders and from his testimony, to have been at that time wholly ignorant of the true situation. He had disapproved of the sending of Ricketts to Thoroughfare Gap, to meet Longstreet on the 28th, believing that the main body of Lee's army could not reach the field of Manassas before the night of the 30th. Hence he sent the order to Porter, dated 4.30 P. M., to attack Jackson's right flank or rear. Fortunately, that order did not reach Porter until about sunset, too late for any attack to be made. Any attack which Porter could have made at any time that afternoon must necessarily have been fruitless of any good result.

Porter's faithful, subordinate, and intelligent conduct that afternoon saved the Union army from the defeat which would otherwise have resulted that day from the enemy's more speedy concentration. The only seriously critical period of that campaign—namely, between 11 A. M. and sunset of August 29th—was thus safely passed. Porter had understood and appreciated the military situation, and, so far as he had

acted upon his own judgment, his action had been wise and judicious. For the disaster of the succeeding day he was in no degree responsible. *Whosoever else may have been responsible, it did not flow from any action or inaction of his.*

The judgment of the court-martial upon Gen. Porter's conduct was evidently based upon greatly erroneous impressions, not only respecting what that conduct really was, and the orders under which he was acting, but also respecting all the circumstances under which he acted. Especially was this true in respect to the character of the battle of the 29th of August. That battle consisted of a number of sharp and gallant combats between small portions of the opposing forces. Those combats were of short duration, and were separated by long intervals of simple skirmishing and artillery duels. Until after six o'clock only a small part of the troops on either side were engaged at any time during the afternoon. Then, about sunset, one additional division on each side was engaged near Groveton. The musketry of that last contest, and the yells of the Confederate troops about dark, were distinctly heard by the officers of Porter's corps; but at no other time during all that afternoon was the volume of musketry such that it could be heard at the position of Porter's troops. No sound but that of artillery was heard by them during all those hours when Porter was understood by the court-martial to have been listening to the sounds of a furious battle raging immediately to his right. And those sounds of artillery were by no means such as to indicate a general battle.

The reports of the 29th and those of the 30th of August have somehow been strangely confounded with each other. Even the Confederate reports have, since the termination of the war, been similarly misconstrued. Those of the 30th have been misquoted as referring to the 29th, thus to prove that a furious battle was going on, while Porter was comparatively inactive on the 29th. The fierce and gallant struggle of his own troops on the 30th has thus been used to sustain the original error under which he was condemned. Gen. Porter was in effect condemned for not having taken any part in his own battle. Such was the error upon which Gen. Porter was pronounced guilty of the most shameful crime known among soldiers. *We believe not one among all the gallant soldiers on that bloody field was less deserving of such condemnation than he.*

Mr. Sewell added: "I am interested in this case of Fitz-John Porter, because I served in the Army of the Potomac during the entire period he was connected with it from its formation, and because I know the man and his reputation as a soldier.

"General Porter entered West Point, and graduated high in his class in 1845. He was assigned to duty as second lieutenant of the Fourth Artillery, in which regiment he served in the war with Mexico, taking part in the battles of Cerro Gordo, Contreras, Molino del Rey, the sieges of Vera Cruz and Chapultepec, and in the capture of the city of Mexico, in which struggle he was wounded at the Garita of Belin. For his services in these battles he was twice brevetted. In 1857 we find him serving on the staff of Gen. Johnson as chief of staff.

"At the breaking out of the late war Gen. Porter, upon his return from Texas with the remnant of troops stationed there, was assigned to duty in Pennsylvania with the general charge of keeping the roads open to the capital at a critical period of our history, which duty was performed to the satisfaction of the Government. While at Harrisburg he was instrumental in organizing and forwarding troops for the protection of the capital; and learning through Gov. Curtin that the arsenal and other public property at St. Louis was liable to fall into the hands of the secessionists of Missouri, and being cut off from telegraphic communication with Washington, he assumed the responsibility and telegraphed in the name of the Secretary of War to muster in the Missouri volunteers, under the command of Capt. Lyon, for the protection of public property.

"Mr. President, it required not only a good soldier, but a strong man, to assume such responsibilities. It was not the act of one lukewarm in the service of his country. His action was warmly approved by Gen. Scott and the Secretary of War on his reporting the case. Gen. Porter's next service was as chief of staff with Gen. Patterson, after which, upon the organization of the Army of the Potomac, he was assigned to the command of a division, and had charge of the siege of Yorktown until it fell, when he was placed in command of the Fifth Army Corps, with which he fought the battles of New Bridge, Hanover Court-House, Gaines's Mills, Turkey Bridge, and Malvern. For his services in this campaign he was promoted major-general of volunteers and brevet brigadier-general in the regular army. Upon the abandonment of the Peninsula by the Army of the Potomac, Gen. Porter reported to Gen. Pope at Bealeton, Aug. 26, 1862. The charges and specifications under which he was tried refer to the period between this date named and the 31st of August.

"I have endeavored, in answer to the minority report presented by the honorable Senator from Illinois (whom I had hoped would be by this time, as was another great soldier, convinced by a study of the case), to show the innocence of Gen. Porter.

"Personally, Mr. President, I believe, as was reported by the board, that Gen. Porter did his whole duty on the occasion referred to, and particularly in connection with the order to move his command at one o'clock, and what is known as the 'four-thirty order.' I will say more. From my knowledge of the man as a soldier and a gentleman I do not believe it possible that he could be guilty of directly or indirectly contributing to the defeat of his comrades in arms by the non-performance of his duties as he understood them.

"The reputation of Gen. Porter in the army was that when he had a company it was the best in the battalion; when he commanded a regiment it was the best in the brigade; when commanding a brigade it was the best in the division; and his corps, the fifth, was the pride of the Army of the Potomac. This man, whom the records show as I have quoted them, pushed the movements of his corps from the Peninsula in order to sustain Pope, making the junction four days sooner than his orders would have required. This does not bear on the face of it

any probability that, having pushed his command ahead of time, he would fail within the next few hours to give that prompt succor to the army of Gen. Pope which he had been making forced marches to accomplish.

"No, Mr. President, these things are inconsistent. Fitz-John Porter was sacrificed to a public sentiment which at that time required somebody should suffer, that somebody should be made an example of for the mismanagement of military affairs.

"He comes now before the only tribunal which can give him justice, after twenty years of suffering under what he believes, under what I believe, and what a large portion of the American people believe to be an unjust sentence. Gen. Porter only asks that he may be restored to that army in which he served so faithfully, and in which he was one of its brightest ornaments."

In conclusion, he made an article of Gen. Grant's in the "North American Review" for December, 1882, a part of his argument.

Mr. Logan, of Illinois, spoke for several days against the bill. He began by making a letter of his own in reply to Gen. Grant's article a part of the record. Touching the alleged disobedience of the order to march on the night of Aug. 27, 1862, he said: "The Senator who votes that, Fitz-John Porter was not convicted properly and legally, votes that he obeyed that order or that it was impossible to obey it; any one who votes to relieve this man from the sentence of that court-martial votes in the face of all the testimony that was given even by his own friends, and votes that the court-martial found him guilty when he ought to have been found not guilty, when in fact the evidence shows that he never attempted to obey the order. The law says that he must obey it, that he subjects himself to the death-penalty if he does not obey; and yet he did not obey it, he did not try to obey it. He violated the law and violated the order; and yet, forsooth, you say he is not guilty! Well, if gentlemen can do that, it is for them to say and not for me; but that is the fact, and there is the law. Under the law and the evidence the judgment of that court-martial was as righteous a judgment as ever was given. It was just, it was right, because it was in accordance with the law and in accordance with the evidence.

"If commanders of divisions and corps are to be permitted to be judges for themselves as to whether they will obey an order or not, then I would not give a straw for all the armies of the United States. If a corps commander may say an order need not be obeyed, why can not his brigade commander or division commander say the same, and why can not their colonels and their captains say the same? What kind of an army would you have if you gentlemen were all division commanders or corps commanders and were off some miles, the enemy was approaching, and the commanding general should send orders to each one of you to concentrate at daylight to-morrow morning, for the reason that he expected either to make an attack or to be attacked, and each man should say, 'Well, it is too dark; I will not go until to-morrow morning,' and no one of you started? If one of you may disobey an order, all may. Suppose no one starts, and the general is left there with a small force to fight the next morning, nobody to come to his rescue, nobody to obey his orders, what kind of an army would you have?

"Oh, but some gentlemen say one of the great chiefs of the world has said he could not move because the road was obstructed; therefore we must give a judgment that he could not. I should like to put some of the sworn statements of that chief against his published statements which are not sworn to.

"Take the history of the world from the time we have had wars, and you can not find such an excuse as is given here by Fitz-John Porter for not moving, that there were wagons in the road. I could give instance after instance where marches were made after night, where marches were made in rain-storms, where battles were fought after night, and I could recite numbers of instances where armies moved and corps moved without orders to the sound of battle, if it were necessary, but I will not give the instance for reasons that will be well understood.

"One of the greatest battles fought during the whole campaign called the Atlanta campaign was fought without one single order being given by the commanding general; but they were not Fitz-John Porters who commanded the corps there. The general in his report of that battle said that all of his orders were anticipated. That battle was fought from early dawn until nine o'clock at night without orders from the general commanding the army, and it was successfully fought. They took the maxim of Napoleon, 'March to the sound of the enemy's guns,' and that was why Napoleon always had his army on the field first, because that was a standing order. His corps commanders marched to the sound of the enemy's guns, and hence the army was always concentrated before the army of the enemy.

"Wherever successful battles have been fought in history they have been fought by officers knowing their duties and performing them without waiting for orders. Why, sir, I could cite instances—I did in my remarks before, and I do not wish to repeat now what I said then—instance after instance where marches were made at the dead hour of the night, when the clouds were lowering and no moon and no stars giving light. Here is a man who sits before me (Mr. Miller, of California) who marched one night ten miles, when it was raining, with 6,000 men to oppose 60,000, and to hold them there until the General of the Army could take his position and get ready to fight. And yet this man Porter would not move for fear he would be drowned in a mud-hole!"

Touching the alleged failure of Porter to obey what is known as the joint order of McDowell and Pope of Aug. 29, 1862, and what is known as the 4.30 order of the same day, Mr. Logan took new ground. He did not maintain that Porter could, as Pope imagined, attack Jackson's left before the arrival of Longstreet, but he maintained that it was his duty to obey orders at all hazards, and that if he had done so his attack, even if his corps were sacrificed, might have given the Union army as a whole the victory. He said:

"On the 29th of August, 1862, as shown by the almanac, the sun set at 6.36 P.M. If it was sundown no sooner than 6.36, there is not a man in the Senate-chamber but what knows, unless it was a rainy night or a very cloudy night, or something of that kind, that it was daylight I might say almost up to eight o'clock. There was nothing in the world in the month of August at that time, when the sun set at 6.36, to prevent the movement of troops for two hours later than the time he claims he received this order. If he could not have done any better he might have sent part of his command. If he had even lost a part, if they had been captured, it would have been carrying out the order to some extent, it would have been showing his desire at least to feel the enemy; but he did not even do that. The only order he gave after receiving this order was to put his troops in position at once to attack, and the very moment the order was given, before the two regiments were put in position, he gave an order for them to come back and go into camp for the night.

"That was the manner in which he obeyed the order; and yet we are told that he did not disobey this order; that he did not violate the order; that he ought to be excused; that he was wrongfully convicted; that Mr. Lincoln did wrong in signing the warrant to convict him; that Garfield did wrong on the court-martial to convict him; that everybody has been wrong ever since except the few people who lately have got very sentimental and begin to talk about time, about twenty years having passed. True, twenty years have passed, and if it was left to me one hundred and twenty years would pass before ever I would reverse a court-martial that had the facts before them as that one did that excited the country in reference to the wrongs that this man had perpetrated upon our army.

"Mr. President, there is one thing that I desire to mention to the Senate. The military law, in order to have an efficient army, must be, in the first place, a stringent law, and, in the second place, it must be rigidly enforced and executed. The articles of war that exist in this country to-day are similar to the articles of war in countries where the best armies exist. These articles of war are based on those of ancient Rome, where the best army the world has ever seen was organized.

"The only theory of an army is that when organized it must be composed of men who make that their profession, so that when they go into the army they go with their lives in their hands; they must go without regard to whether they will be killed or die with yellow fever or anything else. They must go into the army with the understanding that they will go wherever they are ordered. If they are ordered down on the border of Texas when the yellow fever is raging, and there is a necessity for their going there to protect the borders, they must go; that is the rule. If it was left to them, of course they would not go; and the border might be overrun.

"So the rule is that an order must be obeyed. It is not a question as to whether the man who obeys the order shall die, be shot, shall never return home again, but the question for him is, 'How can I obey the order? How am I to do it?' The only way to do it is to try to do it. If it is a lawful order he is bound, at least, to attempt to obey it. So it was in reference to these orders. If this man on the night of the 27th had taken his troops at one o'clock and moved them for the six miles when there was nothing on the road, and could not have gotten any farther, and it was impossible for him to pass any farther, that would have been an excuse to his commanding officer that he tried to obey it, that he started at one o'clock; but he did not do it. Hence he did not try to obey the order, he treated the order as a dead letter. So as to the joint order and the 4.30 order, instructing him to push forward in the direction of Gainesville, and also to attack. If he had gone forward, if he had moved forward until he struck the enemy, had fired into the enemy, and found them too heavy for him, and had to fall back, then there might have been an excuse for it. He could have said, 'I tried, but my force was not heavy enough.'

"If he had fought and been whipped, and come back and said, 'I am whipped; I had to surrender, or I had to retreat,' that would have been all right; but the idea that a man shall come back and say, 'I did not attack because if I had I would have been whipped,' is preposterous. No soldier that is fit to command an army will ever make any such excuse. If you allow this to be an excuse for disobedience of orders, you may organize your army just as soon as you choose; you may organize 50,000 or 100,000 men and send them down on the border of Mexico, if we should be in trouble with our sister republic—God knows I hope we never shall be—but if it should be in the sickly season, and you order that army down there with this man excused, with this man restored to the army, having disobeyed these orders, every man who chooses to say so says, 'I will not go; I will not go because the yellow fever is an obstruction'—why is it an obstruction?—'I shall die; I will not obey the order.' You go before a court-martial, and they say the order should be obeyed; but you go before Congress and say, 'I could not obey

because the yellow fever was so bad; if I had gone there I would have died.'

"Within a few weeks the Secretary of the Navy ordered the trial by court-martial of a naval officer for leaving his post during the prevalence of yellow fever. The court sentenced him to be dismissed the service, and the President approved the sentence. Is he to be restored on this principle? Why not, if Porter is?

"Fitz-John Porter says, in substance: 'If I had gone in there they would have eaten me up; they would have whipped me; I would have been killed, and many of my troops, and therefore I did not go.' Is not the other equally as good an excuse? Suppose you send an army down on the frontier. They undertake to cross the river and go into our sister republic on account of war. An officer says: 'I can not cross that river, because the enemy has over there 25,000 men; I am not able to contend with those 25,000; therefore I can not cross the river; if I do I shall be whipped.' Suppose Gen. Zachary Taylor, with his 6,000 men at the battle of Buena Vista, when 20,000 Mexican soldiers, armed and equipped, appeared on the hill-side to assault him—suppose he had said, 'I can not fight them; they are too strong a force'?

"But Zachary Taylor fought them with 6,000 men, and he whipped them. So with Scott, when the city of Mexico surrendered to him, with the few troops that he had there that morning. One or two Senators who are here present now were there that morning and know that that surrender was made to Scott when he only had a handful of men present. We might go on through history from time out of mind almost to the present day and show that if this had been an excuse wars would not have amounted to anything, but, as once said, would have been a 'failure.'

"Mr. President, I have a summing up of this evidence and much more evidence that I have already prepared which I want to put into my remarks bearing on these points, but I will not take the time of the Senate to read it. I am not strong enough to-day after being so unwell as I was last night to continue much longer; hence I shall pass by this portion of my remarks and incorporate the summary in the 'Record,' if there is no objection to it.

"In conclusion, I want to ask Senators on both sides of this chamber, and I want some one to tell me, why it is that when this case comes up it seems to be decided on political grounds. What is there in this case of politics? It is a mere question as to whether this man was properly convicted or improperly convicted. It is not a question that politics should enter into at all. It is the case of a man who was convicted during the war, while a great many of you gentlemen were down South organizing your courts-martial and trying your own officers if they misbehaved. You tried them according to the laws which you considered ruled and governed your army at that time. We tried ours on our side according to the rules which governed our army at that time and govern it now.

"Is it possible that history is going to record the fact that with this man as guilty as he was of violating the orders sent to him, each and every one, upon which he was convicted, that our friends, because they differ with us in politics, because this man is of the politics they are, are going to decide without reference to the facts or without reference to the law that the judgment of this court-martial should be reconsidered, set aside, and this man put back in the army? There is no other ground on which you can do it. It is a prejudice against the court, against the parties at the time, and nothing else. I hope that does not exist; I hope that will not exist any longer; it should not.

"I do not think it comes with the best grace for men who tried their own disobedient officers in their own way to use their power and influence to restore officers whom we dismissed from our service in the army in order to disgrace the courts which convicted them and the President who signed the warrants. I do not think it is policy for men to come here and undertake to reverse that which was done according to fact and according to law. Let those men who were derelict in duty on our side, whom we dealt with, go. They are of no service to you and none to us. They are of no more service to the country. They may serve themselves, but no one else.

"I should like to know the difference between restoring this man to the army to-day and restoring any other man in the United States. If you were asked to restore some men it would cause a good deal of feeling perhaps, because they were dismissed from the service peremptorily. This man was dismissed from the service lawfully and properly. More than that, the precedent which you establish in opening courts-martial after twenty years is a very dangerous one. It is a bad precedent, one that will live to trouble those who establish it.

"Some say, Why not restore this man on the ground of mercy? Mercy does not apply to this case. Mercy applies to that which has been done, that is, to the pardoning of this man and relieving him from the sentence which was inflicted upon him which prevented him from holding an office. That has been done as an act of mercy. This is not an act of mercy. This is an act declaring the law different from what it is, declaring the evidence different from what it was, and declaring the court finding and the law and the evidence wrong. It is an act and declaration on the part of the Congress of the United States as a court reversing the decision of a former court.

"Mr. President, I protest most seriously against the establishment of this precedent. I protest most earnestly against the establish-

ment of this precedent on lines which have attempted to be drawn heretofore. I protest against the establishment of this precedent because in my judgment it is a reversal of the law as it existed at the time, of the evidence, of the facts as they really were at the time of the finding of the court and as they are to-day. I protest against it further because it is a disorganizing and disrupting influence that will enter into the army of the United States, which army is for your protection as well as for mine.

"The armies that are now to be used are not against you or against me, but in favor of our country, in favor of the one common Government under which we all live; and in fact to-day we should all take pride in the army, small as it is, and try to make it efficient; try to make it a grand army; try to make it a brave, a generous, a bold, and a fearless army. We can not do that by relieving unworthy men from embarrassment, and putting them back in the army along by the side of men who fought and won their spurs.

"Mr. President, this can not be done without, as I said, carrying with it an influence that will be detrimental in its effects upon the Army of the United States. And, sir, let me say to our Republican friends on this side of the chamber, it is but a recent thing that so many lawyers have flocked around the city of Washington for the purpose of engineering a case of this kind; it is but a recent thing that so many men have been brought into play for the purpose of forcing this upon Congress. It is unusual in all its bearings and in all its aspects; it is unusual in the influence that has been worked up and attempted to be brought to bear; it is unusual in the circumstances which now surround us.

"With the views I entertain concerning this case, believing as I do that this man disobeyed lawful orders, that he disobeyed those orders with a view of destroying Gen. Pope; that he disobeyed those orders without reference to the effect it would have upon the people of the United States; that he did it for the purpose of having Pope relieved and some one else put in his place who would be more congenial to him (Porter)—believing as I do that this man out of his prejudice against McDowell urged Patterson not to fight Johnston, which lost the first battle of Bull Run; that he refused to obey the first order he received from Pope to move to the field, refused to obey both orders that he received to push forward and attack—believing all these facts to be completely proved by the evidence, and knowing the law to be what it is, authorizing the court to inflict the penalty of death, and when they inflicted the milder penalty—believing that they let this man off with a much less penalty than would have been adjudged had he been tried by a court-martial in any foreign country—with all these facts before me, with the knowledge I had of the generosity of President Lincoln, with the knowledge I had of the big-heartedness of Gen. Garfield, with the knowledge I had of Gen. Hunter, with the knowledge I had of the other officers who sat upon that court-martial, before I would give a vote to restore this man to the army and let him live the balance of his days on the bounty of the tax-payers of this country, I would go across the Potomac river and kneel down by that tomb on which is inscribed 'Here sleep the unknown dead'; I would go among those little white headstones that mark the place where those boys sleep who fell on the battle-field of Groveton on the 29th of August, and I would there in the presence of those whitening bones on my knees pray to Almighty God to forgive me for the wrong that I am about to do to the dead who have gone, and the wrong I am about to inflict on this country, on the law, and on the facts, by the restoration of this man to his place as an officer of the army. Sir, I would stand in the rays of the majestic king of day and appeal to the sainted spirit of Abraham Lincoln, who has gone before us, and say, 'Inasmuch as in examining this case you thought this man was guilty and signed the order, and when he appealed to you again on the re-examination of this case you declined to take any action in it, before giving this vote for his restoration to the army I appeal to you to take my hand and help me through this trouble and forgive me for perpetrating the wrong against your good name.'"

Mr. McPherson, of New Jersey, in defense of Porter, said:

"Mr. President, this is not a new question in the Senate. It is old as my term here, and is likely to outlive me.

"It has been forcibly and ably discussed by Senators from my State and by many other Senators who have made it a special study. I would not now rise to add a single word to what has been so well said by my colleague, except to protest against the seeming desire on the part of some Senators to withhold longer from Gen. Porter that measure of relief so long denied, and to which he is so justly entitled.

"Gen. Porter, a distinguished, capable, and we believe faithful soldier in the Army of the United States, who had fought many battles for his country, not one against her, had been tried and condemned as a traitor. It is pleasant to recount the triumphs of a long and brilliant service as it is painful to follow the unhallowed steps which led to his disgrace and utter defeat.

"To a proud and manly spirit, conscious of no wrong, how bitter must have been the disappointment, and how doubly keen the shaft which pierced his heart when the fatal cruel words were spoken which sent him forth in disgrace from the army he had served branded with infamy!

"I need not speak of the spirit of jealousy and envy, of political and personal hatreds and

animosity, which characterized the period at which Gen. Porter was required to confront his accusers at the bar of military justice.

"Nor need I speak that other word, *incapacity*, which never fails to reach for a victim to shield it from public contempt and indignation. To say that Gen. Porter suffered all this is but recounting the truths of history.

"Nearly twenty years have come and gone, long and weary years to Gen. Porter and his beloved family, since his brother officers pronounced upon him that terrible doom which has grown darker with time. During all this time Gen. Porter has stood at the doors of the temple consecrated to justice asking, not for mercy, only for justice, and it has been denied. What was his as a right has been denied him even as a privilege.

"But, thank Heaven, new light is slowly but surely breaking over the dark and dismal sea he has been forced to sail. Boards of military officers, not supposed to be his friends, of high renown, have so far as they lawfully could reversed the unjust judgment and turned the calcium light upon the workings of the past. Gen. Grant, distinguished alike for his ability and courage in war and the gallantry of his heart and mind in peace (to his everlasting honor be it said), bears living witness to the justice of his cause.

"One by one the plague-spots which reddened the horizon of his military glory are fading away, and Gen. Porter stands to-day robed in white, without stain, even in the eyes of those who had been his bitterest accusers.

"But this is not enough. The records of this country, in whose cause he fought and by whose fault he suffered, if not corrected, will hand down to his children's children and their children for all time the deep damnation of their father's shame. His country itself struck the cruel blow. Congress alone can heal the wound.

"Is there a man here whose conscience does not tell him, with the weight of testimony we hear, that there are not at least sufficient facts to cover this case with the mantle of a doubt? Is there a jurist here who has not charged from the bench time and time over that to doubt was to acquit? Is there a lawyer here who has not in thunder-tones demanded for his client, as a right recognized and respected the world over, the benefit of a doubt? Is there a Senator here who has followed in his mind's eye the career of Gen. Porter from camp to camp, from battle-field to battle-field, on the long and toilsome march by day and by night, who in his heart believes he was guilty of treason? If not, and the proofs seem to be wanting, it is your duty to pass this bill.

"I have not the physical health nor indeed the inclination to follow the Senator from Illinois in his wanderings after testimony upon which with his construction he might justify his vote against this bill. We leave the conclusions of the Senator from Illinois side by side with the conclusions of the advisory board, made up as it was of three distinguished officers of the army, some of whom at the outset of the investigation believed in his guilt, and who could not be convinced to the contrary without the strongest evidence. With all the facts, new and old, before it this board reported unanimously in his favor, and have forever settled the question of Gen. Porter's innocence in the hearts and convictions of the people of this country. Let now this Senate do its plain, simple duty, and undo this wrong, so far as it is possible to do it, by passing this bill."

Mr. Hawley, of Connecticut, said: "Mr. President, I am not going to speak upon this bill. I intend to vote in accordance with the views presented by the Senator from Illinois (Mr. Logan). I am convinced that I ought to do so. I never have had any hesitation as to which was the right way to vote, so far as I am concerned, except for a time after the Schofield board made its report. I am personally acquainted with a member of that board. I am long and intimately acquainted with Gen. Alfred H. Terry. I have known him well for more than twenty-five years. I served with him or near him during the whole war; and I only rise to express my deprecation of an intimation made by my honorable friend the Senator from Illinois, an implication that the board might possibly have been influenced by improper motives; that the questions likely to arise concerning promotion might have had something to do with their judgment. It should be put upon record, I think—at least I take leave to do so—that my friend Gen. Terry earnestly begged to be excused from that board. He told the Secretary of War that his judgment was made up; that he was against Porter; that he thought Porter was rightfully convicted, and that he was not the man to go upon that board. They still insisted, and he went there with that prepossession. If there be an honorable man in the world it is Gen. Terry, and that he came out of that board with the recommendation he did was the only thing that ever staggered my judgment in the case. I have recovered from that; I am obliged to differ with some of the dearest friends I have in the world, whose motives I can not for a moment question, but I am equally sure that I am right; and that is the misfortune."

Mr. Cameron, of Pennsylvania, said: "Mr. President, it is not my habit to give explanations for votes that I cast, nor is it my intention now to depart from that rule, for it makes but little difference how plausible are the arguments which may be given on any subject; it is the vote itself or its result which counts.

"My object in now rising is to speak of my personal knowledge of Gen. Porter's connection with the war in its early history. I believe that I can state a few facts which came under my own observation which will go far, very far, to show that he, at the darkest moment of our great struggle, proved himself

as patriotic as any man in the history of the nation.

"Fitz-John Porter, in April, 1861, then a major on the staff of Gen. Scott, was sent by the War Department to Harrisburg, Pa., to aid the State authorities in organizing and forwarding the troops of that State to the seat of war at Washington. He had not been in the State forty-eight hours before communication by mail and telegraph was cut off between the two cities, and he was left to act upon his own responsibility. He was equal to the emergency. Not only did he perform the duties to which he had been assigned in Pennsylvania with great zeal, tact, industry, and wonderful vigilance, as will be and has been testified to by the then State authorities, who were themselves without any military experience, but, knowing the utterly helpless condition of the authorities at Washington, he assumed authority in the name of the commanding general, and directed the movements of troops from other States—particularly the troops from the State of Ohio—who were *en route* to Washington and passing through Pennsylvania. He never seemed to eat or to sleep, but was eternally on the alert, cheering the men by his zeal and his confidence, aiding the authorities by advice, and instructing them how to bring order out of chaos.

"It became my duty to take charge of the railroad from Harrisburg to Baltimore, and while so engaged an incident occurred in my office which impressed me greatly at the time, and which, it has always seemed to me, should atone to a great extent for any errors Gen. Porter may have committed, if any, at a later period of the war. It was to a great extent through him, in my judgment, that the services of Gen. George H. Thomas were secured to the side of the Union.

"Gen. Thomas, then Major Thomas, was stationed at Carlisle Barracks; there were at the same time two other majors of the army stationed at the same place, I have forgotten their names (but that is immaterial, for the records of the War Department will show), when an order was received from the War Department by a messenger who came across the country, directing Major Porter to send the troops then at Carlisle to Washington, with directions to have them cut their way through. It is the language of this order which makes me say that this was at one of the darkest periods of the war. The capital of the nation was menaced by an enemy camping within a few miles of it, and had but a handful of men for its protection.

"Porter, with a quick perception of the gravity of the situation, and showing a thorough knowledge of the fitness of the man for the duty to be performed, selected Thomas from the three majors, and ordered him to report to him at my office in Harrisburg, that being Porter's headquarters. Thomas arrived there promptly the same evening. When informed of the duty to be performed, Thomas hesitated, and then began a conversation between the two officers which continued until morning, and made a lasting impression on my mind. Thomas argued against the war, taking the ground that the trouble had been brought upon the country by the abolitionists of the North, and that while deploring it as sincerely as any man could, the South had just cause for complaint; Porter took the position that he, Thomas, as a soldier had no right to look at the cause of the trouble, but as an officer of the United States army it was his duty to defend his flag whenever it was attacked, whether by foes from without or from within. Porter pleaded as zealously, as eloquently, as I have ever heard any man plead a cause in which his whole heart was engaged, and it was this pleading which caused Thomas to arrive at a decision.

"I do not say that Thomas refused to obey his orders, but I do say that he hesitated and would much have preferred that the duty had devolved upon another. Thomas was a Virginian, and had, as many other good and patriotic men, great doubts as to the advisability of the Government coercing the States back into the Union that had by their Legislatures formally withdrawn, but having that night decided to remain with the Union, from that time forward there was no doubt, no hesitancy, no wavering, but an earnest, hearty support to the side which had for its motto the maintenance of the Union, and to-day his name is among the brightest, best, and purest of its military heroes. If Fitz-John Porter was to any extent instrumental in saving this great name to our list of military heroes, I ask should not this country be grateful to him? I think it should.

"As to Fitz-John Porter's action at the second battle of Bull Run, for which he was tried, I confess my inability to judge. Able military men differ, both sides, in my belief, being equally sincere in their convictions, and both sides being anxious to do Porter justice and justice only, as they view his acts. That there is a prejudice against Porter in the minds of many good people I know, and an instance which came under my notice within the last few days will fully illustrate it.

"I received a letter from a very worthy and intelligent gentleman residing in Harrisburg, in which he states that he has been reliably informed that at the time Mr. Lincoln passed through Harrisburg, in February, 1861, Fitz-John Porter was with him, and when it was determined that Mr. Lincoln would go *via* Philadelphia by night instead of by day, direct through Baltimore, that Porter protested most violently; and then the writer propounded the question, 'Did not Porter know of the mob which was waiting to meet him on his arrival?' I replied to his letter as follows:

"I am in receipt of your letter of the 4th instant and note what you say in reference to Fitz-John Porter's opposition to President Lincoln's route to Wash-

ington *via* Philadelphia in 1861. You are mistaken as to that. Fitz-John Porter was not in Harrisburg at that time, nor did he reach there until after the President's proclamation calling for 75,000 troops in April, 1861. The officers who were detailed to accompany the President were Gen. Sumner, then Col. Sumner, and Gen. John Pope, then Capt. Pope. What their views were with regard to Mr. Lincoln's change of route I do not recollect, but certainly Fitz-John Porter was not in Harrisburg at that time nor was he until six weeks after.

"I believe Fitz-John Porter to have been a loyal soldier of the Union, and whatever mistakes he committed were of the head and not of the heart; and therefore in justice to him I make this statement."

Mr. Lapham, of New York, said: "Mr. President, I desire to detain the Senate for but a very few moments before the vote is taken on this measure.

"The decision of the court-martial which pronounced Col. Porter guilty was made on the 10th of January, 1863. On the 21st of that month it received the approval of President Lincoln. That court-martial, which is admitted to have been a legally constituted body, composed of able men, was in session a period of forty-five days. They sat here in the city of Washington, almost in sight of the scenes of the transactions which constituted the basis of the charges against Col. Porter. They had all the facilities possible to ascertain the exact condition of affairs, and they had the recollection of men fresh from the scene of action. That judgment stands unreversed, and under the law irreversible. So far as it has been executed, it is beyond recall by any power on earth; so far as it is unexecuted, the President of the United States, on the application of Gen. Porter, has granted him a pardon, the exercise of the pardoning power being the only relief attainable.

"The advisory or Schofield board was called and investigated this case in the year 1878. They sat at West Point, and I desire to call the attention of the Senate to one of their findings, which is the key to this whole question, in my view of it. They say:

"The evidence of bad animus in Porter's case ceases to be material in view of the evidence of his soldierly and faithful conduct. But it is our duty to say that the indiscreet and unkind terms in which Gen. Porter expressed his distrust of the capacity of his superior commander can not be defended. And to that indiscretion was due, in very great measure, the misinterpretation of both his motives and his conduct and his consequent condemnation.

"Now, I am unwilling by my vote to assent to the proposition that there was such a grave indiscretion committed on the part of the court-martial or on the part of the President of the United States. The fact that Porter was disloyal to his commanding officer is found by this advisory board as a fact which can not be excused, and that this is the foundation of the whole of Porter's disobedience of the orders of his superior commanding general. It all rests there. Porter's fall was the 'first fruit of his disobedience' and its legitimate result.

"The advisory board committed a grave error in saying that the court-martial were guilty of an indiscretion or that President Lincoln was guilty of an indiscretion. Mr. Porter was dismissed the service at a time when we wanted generals, and when there was no other reason for dismissing him but a conviction; he was guilty. We do not want any more generals now. He has, by the action of the President, been relieved from the sentence and rendered eligible to office, but this bill proposes to go further than that, and create a place for him, an extra position not provided for by the law as it now stands. I can not consent to that. I would as quick think of going to the city of Springfield, in Illinois, and tearing the granite base from the monument which has been erected to the memory of our martyred President, and razing it to the ground, as I would consent to or aid in tearing his signature from the judgment of the court-martial, as confirmed by him and executed until its execution was arrested by the interposition of the pardoning power."

Mr. Hoar, of Massachusetts, said: "I do not propose to enter at this late period upon a discussion of this case, but it seems to me proper that I should state very briefly the views which will govern me and have already governed me in casting my own vote.

"I need not say that it has been one of the most painful public responsibilities I have ever encountered. I am bound by my duty as a Senator to act upon a question which involves the consideration of evidence relating to a science; relating to military transactions which are very far removed from my own ordinary experience and from the studies to which my life has been given.

"I suppose a soldier called upon to deal with the question of the conduct of a lawyer in a complicated patent cause, or a question involving contingent remainders, would not find himself much more puzzled than I have been in attempting to master some of the details which relate to the important, intricate, rapid military operations of the three or four days which have been under discussion in this debate. But still I am forced to do my best, and I am bound to do it conscientiously, fearlessly, without regard to any personal consequences or anything else but the fact and the law as they shall appear to my mind upon such study as I have been able to give.

"Now, Mr. President, what is the precise attitude of this case? In the year 1863 a military tribunal, composed of able and upright soldiers, condemned this officer for grave military offenses, sentenced him to be cashiered and sentenced him to be incapable of holding any office of honor, trust, or profit under the United States during the remainder of his life. I regard that judgment as the final judgment of a constitutional court. It is true that courts-martial, whether in the army or in the navy, like all other human mechanisms, are a very

imperfect method for the administration of justice. Their rules of evidence are not those which prevail in common-law tribunals. They have no jury. The prosecution selects the court. The action is had hastily, and when the act is done there is an end.

"But I do not either criticise that arrangement or mention it as affording any reason whatever for failing to pay the same respect to the conclusions of this court as if they were the conclusions of the Supreme Court of the United States, or of a Circuit Court where a jury had been empaneled. The experience and wisdom of civilized nations have been unable to devise any better system than this for the trial of military or naval offenses. The soldier who goes into battle, who takes his life in his hand, who exposes his health and life, who abandons all the ordinary occupations of life, exposes himself also, for the public good, and as a public necessity, to having his rights, his conduct, his life affected by tribunals of this class. They are the best, and no soldier has a right to complain.

"But it is also true that the pardoning power, as I believe, for the sentences of such courts is properly lodged in the President of the United States; and it is also true that Congress has the undoubted clear constitutional right, if it conceive any injustice has been done, to permit the restoration to the army or navy of an officer whom a court-martial has caused to be dismissed. Since I have been in the Senate, numerous cases have arisen where officers cashiered for drunkenness have been restored, by permission of an act of Congress, to their former rank in the army or navy, Congress acting, if not with absolute unanimity, by large and emphatic majorities.

"Now, what are we asked to do? We are not asked now to reverse the judgment of this court-martial. We are not asked to give or provide for a new trial, as we were asked two or three years ago. In my own judgment that can not lawfully be done, even by the consent and on the motion of the accused himself. Gen. Porter is out of the army, and I do not think, even by his consent, we could provide for a retrial of this cause. If we could, the tribunal retrying it might now sentence him to be shot—a man in time of peace, a man not belonging to army or navy, without a trial by jury or right of appeal to the higher courts.

"But the last Chief Magistrate of the United States, Mr. Hayes, being of opinion that by the access to Confederate testimony one half of the case previously unknown might be disclosed, summoned, for his advice and to his assistance, a board composed of high and intelligent army officers. As has been well said, that board was not a lawful board in the sense of having power to administer oaths or to render a binding judgment; but it was the only course open to the President of the United States to have these facts investigated by some competent authority, for his information and for ours. That board made its report, and upon that report the present President of the United States, Mr. Arthur, has pardoned the offense.

"I do not agree with those Senators who think it is a condemnation of, much less an insult to, the memory of President Lincoln or to the memory of President Garfield, a member of the original court, or anybody else, to grant this officer the relief which is asked. Was it ever heard before that the Executive, in issuing a pardon, especially a pardon on newly-discovered evidence, insulted the court or jury who found the original verdict or passed the original sentence? Is every new trial granted by a court with a different verdict an insult to the original court, especially when it is upon newly-discovered evidence? Suppose President Lincoln should have disapproved the finding of the original tribunal, as he did of many a court-martial. I have yet to learn that a difference in judgment, not on the same facts but on the same facts taken with others, is any reproach to the person with whom you so differ.

"The present head of the army, as I have said, under his official executive responsibility, has thought fit to pardon this officer and to remit what remains of the sentence, and that is the only action which in the least modifies or trenches upon, or can modify or trench upon, the act of the original court-martial.

"Now it is asked, giving such weight as we choose to the action of the President, giving such weight as we choose to the newly-adduced evidence, giving such weight as we choose to the opinion of the head of the army at the close of the rebellion and the executive head of the army for eight years after the rebellion ended, that we shall pass an act which simply permits hereafter the President and the Senate, if they see fit, to restore this man to the army so far as that he may be placed upon the retired list, at the discretion of the President. In other words, this present bill does not deal with the question of the guilt or innocence of Fitz-John Porter in terms and technicality; it only authorizes the President of the United States hereafter, with the advice and consent of the Senate, to treat him as a person eligible to the office which he formerly held, under the particular circumstances.

"Is there sufficient reason for such action? I do not, of course if I were capable, I should not at this time undertake to go over the evidence in detail; but this thing is true, as it seems to me: Gen. Porter was condemned by that court-martial in ignorance of such facts in regard to the military situation of the 28th and 29th of August, 1862, as could be learned from the reports and testimony of men who were opposed to him in those days.

"In the judgment of these high military authorities, including the President of the United States charged with his official responsibility, that newly-disclosed evidence makes a new case. I am not now speaking of the 6.30 order of the afternoon of the 27th, but of the charge of

a failure to attack, a failure to advance and go to the assistance of the troops in battle, and the charge of having retreated during the action, whether you call it a battle or a series of actions, on the 28th of August; and these high military authorities declare that upon the study which they have given this has become a new and different case. The case on which this man was tried is not the case which is now presented to those who in any responsible situation have to try it.

"Mr. President, it seems to me, on a full examination of this evidence, that the evidence is such as to afford a fair support to that opinion. I recognize the great military authorities that are opposed to it. I do not think if I were to select mere authority on which my judgment was to be guided that I should select two men in the United States on whom I would place higher reliance than two members of the present Committee on Military Affairs, the Senator from Illinois (Mr. Logan) and the Senator from Connecticut (Mr. Hawley). The Senator from Illinois is himself an illustrious soldier. He is himself accustomed to deal with evidence as a lawyer. The training of his life, both civil and military, has fitted him to deal with such questions. And I do not think that any authority on the other side as mere authority is entitled to greater weight than his. I should also place very great reliance in such a case upon the opinion of my distinguished and illustrious friend from Connecticut, who concurs with the Senator from Illinois in this case. But it does seem to me, looking at the case as well as I am able to do, that the newly-discovered evidence, whether the conclusion as to Porter's guilt or innocence might be the same, does make out a case so different in the circumstances that it warrants us in passing a law which shall permit the President if he see fit, and the Senate if hereafter it shall see fit, to allow this man for the little remnant of his days to be restored to his old profession.

"Then you come to the specification in regard to the disobedience of orders on August 27th—the 6.30 order. Who can believe that if the other facts in the case had been out of the way the court or President Lincoln ever would have sentenced this man to the severe punishment to which he was sentenced on that finding alone? Whether it be true or not true that the military law required an attempt to march over that road that night, encumbered with wagons to the extent to which it was, the extent being in dispute, or not; or whether that officer, being an officer with a separate command, receiving his order from a superior ignorant of the precise condition of things which he had to meet—whether the military law and custom permitted him under such circumstances a discretion or not, this thing is, it seems to me, well established, that a very large number of able, honest, experienced military men were in the habit of exercising and in the habit of permitting the exercise of such discretion; and who can believe that he being wrong in an opinion in regard to a state of facts in which, if he was wrong, Grant is wrong, in which if he was wrong Longstreet is wrong, in which if he was wrong Terry is wrong, in which if he was wrong Schofield is wrong and Getty is wrong—who can believe that if this single specification stood alone, General Porter would have been condemned with this severity of sentence?

"Mr. President, we are not wiping out the sentence of Fitz-John Porter. That man has tasted for twenty years the bitterness of that judgment. No cup of death was ever presented to human lips which, it seems to me, could be so bitter as that which has been the daily and the nightly draught for twenty years of this officer, who, at least, once and some time deserved well of the republic.

"Will the Senator from Illinois say that the President of the United States, in pardoning this man, meant to affront or did affront the great and mighty shades of Lincoln and of Garfield? He thought that in the doubt upon this question it was time at least that justice should stop and that mercy should have her place. Over that name honored for generations in the military and naval history of this country—you can hardly look upon the stars and stripes on our flag that you do not think of the name of Porter—for twenty years has rested the burden of this shame, worse than death, worse than torture, and no act of Congress, no act of God can wipe that away.

> "Not Fate herself can o'er the past have power,
> But what has been has been.

"And he has had, in shame and agony—he has had his hour.

"Now, Mr. President, I do not know what bitter passion, I do not know what prejudice, I do not know what honest love of country, I do not know what feeling of a patriotic and generous soldiery may be encountered by the vote I am about to cast. I know this, that I would rather incur almost anything myself than to incur the disapprobation of some men whom I shall seriously grieve by the conclusion to which I have come. It is not an easy thing for a Republican, a partisan, a man whose life has been given to the advocacy and the support of the doctrines of this party, to incur the disapprobation and the condemnation of his political friends who sit about him on a great question of state; but I thank God that after hesitation and doing my best to discover what my duty requires he has given me the grace to perform it.

"I do not believe, studying this testimony, that the burden of this condemnation ought to rest longer upon the head of this man unless on such re-examination of the facts as it will be the duty of President Arthur hereafter to give, and on such re-examination of the facts as it will be the duty of the Senate hereafter to give, one or the other (for it will require the concurrence of both to restore him) should

be of opinion that he ought not to be restored.

"So thinking, Mr. President, I believe that if Abraham Lincoln sat in this seat to-day and could read the testimony which has come from the reports of Longstreet and of Lee, changing, as it seems to me, so materially the military situation of that day, the vote of Abraham Lincoln, with his kind heart, with his sound sense, and his fearless independence in doing right, would be cast as I mean to cast my own."

The bill was passed by the following vote:

YEAS—Barrow, Beck, Brown, Butler, Call, Camden, Cameron of Pennsylvania, Cockrell, Coke, Davis of West Virginia, Farley, Garland, George, Gorman, Groome, Hampton, Hoar, Jackson, Jonas, Jones of Florida, Lamar, Maxey, Morgan, Pendleton, Pugh, Ransom, Saulsbury, Sewell, Slater, Vance, Vest, Voorhees, Walker—33.

NAYS—Aldrich, Anthony, Blair, Cameron of Wisconsin, Chilcott, Conger, Davis of Illinois, Dawes, Edmunds, Frye, Hale, Harrison, Hawley, Hill, Ingalls, Kellogg, Logan, McDill, McMillan, Miller of California, Miller of New-York, Morrill, Platt, Plumb, Rollins, Sawyer, Windom—27.

ABSENT—Allison, Bayard, Fair, Ferry, Grover, Harris, Johnston, Jones of Nevada, Lapham, McPherson, Mahone, Mitchell, Saunders, Sherman, Van Wyck, Williams—16.

The preamble was then adopted by a separate vote. It was as follows:

Whereas, The board of Army officers convened by the President of the United States by special orders numbered 78, headquarters of the Army, April 12, 1878, to examine into and report upon the case of Fitz-John Porter, late a major-general of the United States volunteers and a brevet brigadier-general and colonel of the Army, having, by their report of March 19, 1879, stated that, in their opinion, "justice requires at his [the President's] hands such action as may be necessary to annul and set aside the findings and sentence of the court-martial in the case of Maj.-Gen. Fitz-John Porter, and to restore him to the position of which that sentence deprived him, such restoration to take effect from the date of dismissal from the service"; and

Whereas, The President, on the 4th day of May, 1882, remitted so much of the sentence of said court-martial remaining unexecuted as "forever disqualified the said Fitz-John Porter from holding any office of trust or profit under the Government of the United States": Therefore, that justice may be done the said Fitz-John Porter, and to carry into effect the recommendation of said board.

The consideration of the measure was objected to in the House, Jan. 17th, and so it failed.

Increase of Pensions.—The House bill increasing the rate of pensions of soldiers that have lost an arm or a leg in the service was taken up in the Senate Feb. 26th. It was as follows:

Be it enacted, etc., That from and after the passage of this act all persons on the pension-roll, and all persons hereafter granted a pension, who, while in the military or naval service of the United States, and in the line of duty, shall have lost one arm, one hand, one leg, or one foot, or shall have suffered disability equal thereto, shall be entitled to a pension of $40 per month.

It was discussed at some length, and various amendments were proposed and defeated, among them one for pensioning veterans of the Mexican and Indian wars up to 1856. In discussing this question, Mr. Hoar, of Massachusetts, said:

"I hope the Senator will not insist on embarrassing this question with that which relates to a wholly different war. I am in favor of pensioning every surviving veteran of the Mexican War on precisely the same terms, or on better terms, than were allowed to veterans of the Revolution, at the same distance of time from the close of that war, or on the same terms, or better terms, than were allowed to veterans of the War of 1812, at the same distance of time from the close of that war, or on the same terms that are allowed to veterans of our late war; but I am not in favor of putting upon the pension-roll of this country surviving veterans of the Mexican War whose disabilities have not been removed, and who contemptuously refuse to have their disabilities removed. I have no desire to say anything which will excite angry debate or unpleasant recollections, but the Senate know very well what I refer to when I make this observation; and, if it becomes necessary, it is a subject which I shall discuss with great plainness.

"This proposition would put upon the pension-roll persons who contemptuously refuse the amnesty of the Government. It would put upon the pension-roll also men who are rich, hale, strong, in active and robust middle life, when that never has been done by this Government in regard to the veterans of any other war. The veteran of the Revolution was obliged to prove, for nearly forty years after that war closed, his need, and to accompany his proof with a schedule of his real and personal property. I should not for one be disposed to make such a requisition in regard to any living survivng veteran. The veteran of the War of 1812 was not put upon the pension-roll without regard to his need until the youngest surviving veteran of that war had reached the age of seventy-eight years and most of them had reached the age of over eighty-four years, so that age itself was a disability. The dependent father, the dependent mother, of the soldier of our late war for the Union is obliged to prove that dependence and need in order to obtain a pension; and the veteran himself, though twenty years have elapsed, does not receive a pension except in case of a disability. Why should the survivors of the Mexican War and of the Indian wars be singled out from every other class of soldiers, and have a bounty extended to them which we have not extended to anybody else?

"I wish to call attention to the fact that the Senate, as I believe, has been ready, this side of the chamber has been ready (of course those soldiers are upon the pension-rolls under the general pension law), to extend to the veterans of the Mexican and Indian wars a liberal policy, which will enable all those who are in need and who are under no existing disability to re-

ceive the pension of the Government if they desire it."

Mr. Call, of Florida, said: "Mr. President, I do not propose to detain the Senate with any discussion on this question. For four years I have been endeavoring to get some little tardy justice done to the veterans of the Indian wars and to those of the war with Mexico. Bill after bill, resolution after resolution, has been referred to the Committee on Pensions, but no report has ever been obtained, either favorable or unfavorable.

"I apprehend that nobody can deny, upon the principles upon which this bill is proposed to be voted for, that the survivors of the Mexican War and the survivors of the Indian wars, that conquered the territory from the savages and acquired it from foreign countries, ought to be pensioned, especially those who are in destitution, those who are a disgrace to the country, because they are left to strive in absolute penury and want, as time after time, year after year, bill after bill, resolution of legislature after legislature are brought to Congress appealing for this small meed of justice to men who have served their country gallantly and well, and who are in absolute need and destitution. I therefore think that there can be no question that as a matter of doing justice to soldiers of another war this is a proper amendment to be attached to this bill.

"There never has been an occasion when I have not aided in granting reasonable pensions through the system of special bills, which is the appropriate and proper system of relief, because a man may have lost one leg or one arm or some other member of the body and still be a capable and an efficient man, able to take care of himself and to acquire a living. A remedy has always been afforded, and it is the proper way to afford relief by special bill in Congress for a special case. I have never refused and I have voted time and again upon special bills for the relief of pensioners whose cases were special, and who required a larger amount than the amount appropriated by the general bill. In my judgment that is the proper system. No man who has been a soldier and who has done his duty gallantly and well and is in a state of suffering, should be allowed to want for the adequate means of subsistence and comfortable support. The system of special bills is the only mode in which his particular case can be reached; it can not be done by a general bill.

"As I said, it does not follow because a man has lost one arm or one leg that he is not a more capable and efficient man than those not so wounded. He may have lost none, and yet be the victim of the most severe and extreme suffering and incapacity.

"In my opinion the bill does not meet the necessities of the soldiers. I for one have always voted and I am always willing to vote to the full extent of the capacity of this country to pay, and to pay liberally, every soldier who is in need that amount which is necessary for his comfortable support. That is the reason why this amendment should pass, pensioning the survivors, now but few in number, of the Mexican War and of the Indian wars. The legislature, I believe, of every State at different times has passed resolutions recommending it.

"If the Senator from Massachusetts can see in the present condition of the country, twenty years after the war of the rebellion, a necessity for putting upon the amendment some condition which shall attach to persons who have not applied for and received an amnesty, let the amendment be proposed, and if it is the pleasure of a majority of the Senate that it shall be passed, let it be done. There is no reason why this amendment should not be passed. If he wishes to apply to it terms which shall limit it to the indigent soldiers, to those who are in absolute destitution, let such an amendment be proposed."

Mr. Morgan, of Alabama, said: "It is true that the veterans of the Mexican War have been a long time lingering here, petitioning the Congress of the United States for some recognition of their services. They perish one by one. A great many of them are living now in the last remnants of their lives in abject poverty. I know some of them myself who are in extreme necessity. The Congress of the United States refuses to allow them an opportunity even to prove that they are in a necessitous condition, and, while doing that, Congress is adding by this bill more than twice the amount of money which the Senator from Florida proposes to pay them by way of addition to men who are already receiving pensions and have been enjoying the bounty of this Government for years together.

"This is a crying, shocking injustice. It is an outrage upon the respectability of the American character. It is an act of base ingratitude, and it is done by men who received and have in their possession a domain brought as a dower to the people of the United States greater than Cæsar ever brought to Rome.

"No set of men have ever suffered in the cause of their country so heroically, so patriotically as the soldiers of the Mexican War, for the reason that they are the only class of men who have been called to invade a foreign country. All the other men who have fought and bled and suffered on this continent have done so in defense of their own homes and firesides; they have done so in respect to a principle which animates every honorable man in the world. A man who will not fight for his own homestead and for his own family and his own fireside is not worthy of the respect of mankind; he is not worthy of their confidence or of their bounty. When he has done so I am willing that the country shall be liberal and generous toward him. When you carry your flag into a foreign country, and it is followed by the brave men who volunteer

in the service of your country, and they come back bearing it in victory and triumph to their own Government, laying at the feet of power in the Government of the United States a domain the richness of which is incalculable, beyond all calculation, then for us to turn to those old men when they are perishing one by one, and tell them that we will not grant them $8 a month with which to buy their bread, will only prove the ingratitude and the baseness of this generation.

"When that subject is presented a Senator rises on this floor and makes a threat that he will make some very plain remarks about the political opinions of some of the men who fought when that Senator was a boy, perhaps a youth at college somewhere. For the purpose of preventing the Government of the United States from giving those men an opportunity to keep out of the poor-house the Senator says that he will have some plain remarks to make about something that they have done since that time. Let him make his remarks; let him wage his war against those men.

"We have no right to deny to those men this contribution to their necessities in their old age and in their infirmity; it makes no difference what their opinions may be, it makes no difference what they have done against this country. If one of them had been consigned to the penitentiary and had served out his term he would have a right to claim the bounty of this Government for services which he rendered before the stigma of conviction fell upon him. If one of them was engaged in the rebellion and has since been pardoned by the general amnesty of the Government of the United States, he is restored to all his rights and privileges as freely and as fully as the Senator from Massachusetts.

"This complaint against one or two individuals in the United States is constantly paraded here for the purpose of gaining an opportunity to deny justice to thousands and tens of thousands, I am afraid there are, of the survivors of the Mexican War.

"There are about 8,000 of them. While we are bestowing money under a bill which Senators variously estimate at from five million to fifty million dollars to men who have done nothing except to serve their country around their own firesides and protect and defend them against a domestic foe, while those men professed to be, and I have no doubt were acting in obedience to one of the highest instincts and impulses of every honorable spirit in the world, while we are rewarding them and doing it properly for the service they rendered, we are refusing to reward the men who carried our flag into a foreign country, and who came back to us loaded with an empire of wealth the like of which no country ever acquired before with so little expenditure of blood or of treasure.

"Sir, the results of the Mexican War to the people of the United States in actual dollars and cents are greater than any conquest that can be named which has been achieved in a single war by the Anglo-Saxon people; and we, the inheritors of this vast wealth, with overflowing coffers, with a Treasury that we are trying to deplete by every measure that we know, now refuse the bread of life to the poor men who bore this banner in their youth to victory in a foreign land, and have returned only to experience the truth that this country is ungrateful to them.

"I have now said all that I expect to say on this occasion about this bill. I expect the proposition again to be trampled under foot, again to be voted down, and it will be two years, yes, it will be five times two years, before the Senate of the United States will get its consent to give those men $8 a month; and while we are refusing that we will run back upon the pension-list and we will vote a sum of money that amounts to $100,000,000 a year to men who have got no higher claim to the gratitude of this country than that they fought for their own homesteads, their own families, and their own firesides."

Mr. Voorhees, of Indiana, said: "Mr. President, there is one part of the amendment of the Senator from New Hampshire that I accept, and that is that the beneficiaries of this provision shall take the oath of allegiance. I care nothing for that, but I would ask no man to proclaim his indigence. I would ask no man to certify to his destitution and poverty. That is mean charity.

"Men who have rendered distinguished services that the whole world recognizes should not be brought to the block, as it were, to certify that they are poor and want their pauper's soup-bowl filled by Government charity.

"Whether we have gone as far from the scenes of the Mexican War as we did from those of the Revolutionary War or the War of 1812 before we granted pensions is not the question. The soldiers of the Mexican War achieved such success in a material sense as should disarm the economy or the avarice, or whatever else you may call it, of members of Congress. If a statue of gold were erected at full life-size to every surviving Mexican soldier it would not be one-quarter of 1 per cent. of what they have given this Government. Let me repeat it: If a statue of gold, life-size, were erected by our Government to every surviving soldier who fought the battles in Mexico, it would not cost one-quarter of 1 per cent. of that which they acquired for this Government. I state that simply materially considered, considered in point of dollars and cents; but when you estimate the glory which they gave this country throughout the world, the renown which they achieved, it can not be estimated even in statues of gold.

"I was deeply impressed with the letter read by the Senator from Tennessee (Mr. Jackson), stating that while we are asking addition-

al vaults and chambers to relieve those that are now plethoric with the precious metals acquired by the valor of those men, the remnant of whom we are speaking for, it is objected to, and there is a parsimonious and higgling spirit in regard to allowing them anything.

"I once before on this floor took occasion to speak of this question as it really exists, and that is as a sectional question. New England had but little share in the Mexican War. We might as well tell the truth while we are going along. State after State in New England had no concern in it. The State of the Senator from Massachusetts had but little share in it except by purchased troops. Other States in New England had not one single soldier there.

"I intend to advertise the country again of the fact that New England was opposed to that war and had no troops there. I will qualify that expression to this extent: when I say that New England had no troops there I do not mean literally that there was nobody there from New England, but I do mean that New England gave no support to the Mexican War. I mean further that I can take a map and outline the boundaries of this Government as it would have been if New England had had her policy. She fought Jefferson. Jefferson purchased Louisiana, with her outlying, vast, and vague boundaries, and New England wanted to impeach him. James K. Polk, another Democratic President, fought the war with Mexico, and New England fought him.

"The results of Jefferson's purchase are known and the results of the Mexican War are known.

"If the policy of New England had prevailed, if the old Federal idea had obtained, this day and this hour I would hold up on the floor of the Senate the map of the United States bounded on the west by the Mississippi river. The Senator from Massachusetts well knows that fact. I challenge him to show a single instance where New England has ever advocated the advancement of the standard of this country beyond the Mississippi river. When I say that I say it with regard, so far as he is personally concerned, because I call to mind while saying it a most liberal, broad, and national letter of his last summer on the subject of the improvement of the Mississippi river. I do not include him in any criticism of the policy of the past, but I speak of the past as it is. If this hour the policy of the old Federal party was stamped upon the map of the United States, it would be found as it is hung up in the office of the Commissioner of the Land-Office, at the Department of the Interior. I have looked upon it, and I proclaim here that every step beyond, every step on the sunset side of the Father of Waters, is due to the spirit, policy, action, and legislation of the Democratic party, and in direct hostility and triumph over the policy of New England and the Federal party of that section.

"I find every time that the question of paying these old veterans who exist in a few numbers in each county in the United States except New England, ten or fifteen in the various counties, poor, humble, waiting—whenever a question arises here to do something for them, however small, it is encountered by that section of the country which had neither sympathy, action, nor men in that movement.

"I do not know that the amendment of the Senator from Florida is to obtain to-night. I expect not. It will be obstructed in some way. I did not intend to advocate a single amendment to the original bill 1410, that came here from the House, nor did I. I opposed every one of them. I voted against the amendment of the Senator from New Hampshire, which I thought very well of. I opposed the amendment of the Senator from Connecticut, which is not entirely objectionable, but I wanted this bill that came from the House, pure and simple, to help one-legged and one-armed men, to pass, and so I voted against amendments that were in themselves meritorious.

"But now, inasmuch as the amendment of the Senator from Connecticut has been adopted, I shall vote for one more; I shall vote for this amendment offered by the Senator from Florida. I would not vote for it, much as I approve of it, if the bill had not already been amended; I would keep it pure and clean; but whenever the question of paying the survivors of the Mexican War comes before the Senate I shall adhere to what I have heretofore said, that I shall meet this question, always raised on the part of New England in the interest of economy, but I think in the interest of an ancient policy on their part, as I have met it here to-night."

Mr. Edmunds, of Vermont, said: "I do not know any reason why a professional man who is destitute and who served his country should be excluded from the benefit of his country's gratitude, while the man who is not a professional man should receive it. That is not the way to tempt professional people and mercantile people, and all the other body of people except day-laborers, to uphold the flag of their country. The amendment itself, therefore, if it means what my friend thinks it does, proceeds upon a false theory, in my view. But no matter for that, I do not want to take up time about that.

"The difference between the case we have in hand, the men whose legs and arms are gone, and the case the Senator from Mississippi states, is this: In this case we know that these people are in their present condition in consequence of their service; the indigent survivors of the Mexican War who do not already have pensions for disability incurred in the line of duty are indigent, are sick, or in trouble, not because they were soldiers of the United States, but because like the rest of mankind they are subject to the infirmities of human nature and to the changes

and chances of this mortal life. I do not mean to say that that is not a reason why our gratitude should be applied to them, but I say it marks a clear distinction that we ought to observe—unless we mean to destroy this bill for the benefit of those whose legs and arms are gone, which I can not impute to the Senator from Mississippi, a distinction that we ought to observe, and not embarrass one thing that we all agree about, I hope, by another that is not so clear.

"Now, when you come to the question of pensioning people who have served their country in war because they are now in need, what difference do years make? Why should not the soldier of the Union of 1861 to 1865 who is now indigent, and in trouble and distress, be just as much entitled to the gratitude of his country as the soldier of the Mexican War who is now indigent and in trouble and distress, I should like to know? I am unable to see that time has any thing to do with that question. I should be glad to have somebody explain how it can have.

"We did pension all the survivors of the Revolutionary War fifty or sixty years afterward, because they, like a great many other things that happened at that time, as long periods of years went on, became mere monuments of national glory, a few people scattered here and there that the country was able and glad to decorate them with this honor, as well as to provide for them in their old age. I repeat that in my opinion there is no distinction in principle between providing for the indigent soldiers of the war for the Union, if I may call it so—others call it the war between the States, the civil war, and so on—there is no distinction in principle that can be made between the Mexican soldiers and the soldiers of 1861–'65 if you put it on the ground of necessity. But I say in either case that the question that is before the Senate on this House bill as amended is an entirely different one from the one proposed by the Senator from Mississippi, and if I did not know his patriotic impulses I should suspect that the effect might be (as I am afraid it may be, though the purpose may be a legitimate and parliamentary purpose) to destroy this measure for the people who stand before our eyes, maimed for all their lives in the service of their country, to have this little addition to their support, by getting up a question of this kind."

Finally, Feb. 28th, an amendment was adopted to strike out all after "duty," and insert the following:

Shall have lost one hand or one foot, or been totally or permanently disabled in the same, or otherwise so disabled as to render their incapacity to perform manual labor equivalent to the loss of a hand or a foot, shall receive a pension of $24 per month; that all persons now on the pension-roll, and all persons hereafter granted a pension, who in like manner shall have lost either an arm at or above the elbow, or a leg at or above the knee, or shall have been otherwise so disabled as to be incapacitated for performing any manual labor, but not so much as to require regular personal aid and attendance, shall receive a pension of $30 per month: *Provided*, That nothing contained in this act shall be construed to repeal section 4699 of the Revised Statutes of the United States, or to change the rate of $18 per month therein mentioned to be proportionately divided for any degree of disability established for which section 4695 makes no provision.

The bill was then passed by the following vote:

YEAS—Aldrich, Allison, Blair, Cockrell, Conger, Davis of Illinois, Dawes, Hale, Harrison, Hill, Hoar, Ingalls, Lapham, Logan, McDill, McMillan, Miller of New York, Mitchell, Morrill, Platt, Plumb, Rollins, Sawyer, Sewell, Sherman, Vest, Voorhees—27.

NAYS—Barrow, Bayard, Beck, Call, Coke, Garland, George, Harris, Jonas, Maxey, Morgan, Pugh, Walker, Williams—14.

ABSENT—Anthony, Brown, Butler, Camden, Cameron of Pennsylvania, Cameron of Wisconsin, Davis of West Virginia, Edmunds, Fair, Farley, Ferry, Frye, Gorman, Groome, Grover, Hampton, Hawley, Jackson, Johnston, Jones of Florida, Jones of Nevada, Kellogg, Lamar, McPherson, Mahone, Miller of California, Pendleton, Ransom, Saulsbury, Saunders, Slater, Tabor, Vance, Van Wyck, Windom—35.

March 2d, the House concurred in the Senate amendment, and March 3d the President approved the bill, and it became a law.

Bills Passed.—Apart from the measures already considered, the regular appropriation bills, and bills of a private character, the following measures were passed at the second session of the Forty-seventh Congress and received the approval of the President:

To provide for the erection of a monument to the memory of Maj.-Gen. the Baron de Kalb.

To permit grain brought by Canadian farmers to be ground at mills in the United States adjacent to Canadian territory under such rules and regulations as may be prescribed by the Treasury Department.

To extend the time for filing claims for horses and equipments lost by officers and enlisted men in the service of the United States and for other purposes.

To reimburse the State of Oregon for moneys paid by said State in suppression of Indian hostilities during the Modoc War in the years 1872 and 1873.

In relation to certain fees allowed registers and receivers.

To amend section 3362 of Revised Statutes.

Prescribing regulations for the Soldiers' Home, located at Washington, in the District of Columbia, and for other purposes.

To amend an act donating public lands to the several States and Territories which may provide colleges for the benefit of agriculture and the mechanic arts.

To authorize the construction of certain bridges and to establish them as post-roads.

To increase the fees of witnesses in United States courts in certain cases.

Authorizing the Commissionor of the Freedman's Savings and Trust Company to examine and audit certain claims against said company, and to pay certain dividends barred by the act of Feb. 21, 1881, and for other purposes.

To amend section 3780 of the Revised Statutes.

To encourage the holding of a World's Industrial and Cotton Centennial Exposition in the year 1884.

To amend sections 6 and 7 of the act providing for the publication of the Revised Statutes and the laws of the United States, approved June 20, 1876.

Providing for the termination of articles numbered 18 to 25, inclusive, and of article numbered 30 of the treaty between the United States of America and her Britannic Majesty concluded at Washington, May 8, 1871.

To refund to the State of Georgia certain moneys expended by said State for the common defense in 1777.

To afford assistance and relief to Congress and the Executive Departments in the investigation of claims and demands against the Government.

Making Saint Vincent, in the State of Minnesota, a port of entry in lieu of Pembina, in the Territory of Dakota.

To amend section 4214 of the Revised Statutes, relating to yachts.

To amend section 1860 of the Revised Statutes so as to exclude retired army officers from holding civil office in the Territories.

Amending sections 1926 and 1927 of the Revised Statutes so as to extend the limits of the jurisdiction of justices of the peace in the Territories of Washington, Idaho, and Montana.

Relating to exportation of tobacco, snuff, and cigars in bond free of tax to adjacent foreign territory.

To exclude the public lands in Alabama from the operation of the laws relating to mineral lands.

Authorizing and directing the Postmaster-General to readjust the salaries of certain postmasters in accordance with the provisions of section 8 of the act of June 12, 1866.

Supplementary to an act approved Dec. 17, 1872, entitled "An act to authorize the construction of bridges across the Ohio river, and to prescribe the dimensions of the same."

To amend the act entitled "An act to repeal the discriminating duty on goods produced east of the Cape of Good Hope," approved May 4, 1882.

To authorize the construction of bridges over the Ogeechee, Oconee, Ocmulgee, Flint, and Chattahoochee rivers in the State of Georgia.

To authorize the construction of a bridge across the Thames river near New London, in the State of Connecticut.

To establish a railroad-bridge across the Illinois river, extending from a point within five miles of Columbiana, in Greene county, to a point within five miles of Farrowtown, in Calhoun county, in the State of Illinois.

For the allowance of certain claims reported by the accounting officers of the United States Treasury Department.

To establish certain post-routes.

To amend an act entitled "An act to authorize the construction of a bridge across the Missouri river at the most accessible point within five miles above the city of Saint Charles, Missouri," approved April 14, 1882.

To create three additional land districts in the Territory of Dakota.

To prevent the importation of adulterated and spurious teas.

To adjust the salaries of postmasters.

Relative to the Southern Exposition to be held in the city of Louisville, State of Kentucky, in the year 1883.

To authorize the construction of a bridge across the Missouri river at some accessible point within ten miles below and five miles above the city of Kansas City, Missouri.

Providing for a new mixed commission in accordance with the treaty of April 26, 1866, with the United States of Venezuela.

Validating certain contracts executed by the Postmaster-General.

To provide for the admission, free of duty, of articles for a special exhibition of machinery, tools, implements, apparatus, etc., for the generation and application of electricity, to be held at Philadelphia by the Franklin Institute.

To admit free of duty a monument to Gen. Washington.

Granting right of way to the Fremont, Elk Horn Valley, and Missouri River Railroad Company across the Niobrara military reservation, in the State of Nebraska, and authorizing the sale of a portion of said reservation.

To ratify the issuance of duplicate checks in certain cases by the Superintendent of the Mint of the United States at San Francisco.

To authorize the Seneca nation of Indians, of the State of New York, to grant title to lands for cemetery purposes.

Authorizing the Committee on Printing to instruct the Public Printer relative to the maps, etc., for the census reports.

Granting right of way for railroad purposes and telegraph line through the lands of the United States included in the Fort Smith Military Reservation at Fort Smith, in the State of Arkansas.

To authorize the Public Printer to make certain purchases without previous advertisement.

To provide for extra work in the Government Printing-Office in cases of emergency.

To rectify and establish the title of the United States to the site of the military post at El Paso, Texas.

To attach the county of Hardeman, in the State of Tennessee, to the Eastern Division of the Western District of Tennessee.

To cede to the first taxing district of the State of Tennessee a certain lot of land situated in said district.

To provide for the binding of the Compendium of the Tenth Census.

To confer upon the senior associate justice of the Supreme Court of the District of Columbia, in the absence or inability of the chief-justice of said court, the power and duties now conferred upon said chief-justice relative to the extradition of fugitives from justice.

More effectually to suppress gaming in the District of Columbia.

To punish larceny from the person in the District of Columbia.

To amend certain sections of the Revised Statutes relating to the District of Columbia.

To levy an assessment of the real estate in the District of Columbia in the year 1883, and every third year thereafter, for purposes of taxation.

To increase the police force of the District of Columbia, and for other purposes.

Constitutional amendments were proposed on the following subjects: To allow the veto of separate items in appropriation bills; to authorize the veto of separate items in the River and Harbor Bill; to create a House of Electors to confirm appointments in the civil service; to amend the provisions for the election of members of Congress; to amend the provisions for the election of President; to provide for woman suffrage; and to give Congress power to enforce contracts made by States.

CONNECTICUT. State Government.—The following were the State officers during the year: Governor, Thomas M. Waller, Democrat; Lieutenant-Governor, George G. Sumner; Secretary of State, D. Ward Northrup; Treasurer, Alfred R. Goodrich; Comptroller, Frank D. Sloat. Judiciary: Supreme Court, Chief-Justice, John D. Parks; Associate Justices, Elisha Carpenter, Dwight W. Pardee, Dwight Loomis, and Miles T. Granger.

Legislative Session.—The Legislature convened on the 3d of January, and adjourned on the 3d of May, the longest session on record in the State.

The creation of a Board of Pardons was one of the most important and most needed measures of the session. The act provided as follows:

His Excellency the Governor, a Judge of the Supreme Court of Errors, to be designated for that purpose by the judges of that court at their annual meeting, and four persons to be appointed by the General Assembly, one of whom shall be a physician, shall constitute a Board of Pardons for this State.

A unanimous opinion will be necessary to a pardon.

The new law which enlarges and explicitly defines the duties of coroners makes a sweeping change, and a radically new departure, in the methods for the initial proceedings in probable cases of murder or suicide.

The Governor's salary was raised a little, made $4,000. The State tax was made 1¼ mill. A new military code bill was passed; a bill to stop the auctioneering of town paupers to the keeping of thrifty providers in other towns also became a law; the act to wind up the Townsend Savings-Bank passed; and so did a bill to compel dealers in oleomargarine to stamp their packages of that article with that name, and put it up also in large letters over the door.

A bill was passed to prevent a drunken father from taking the wages of his minor son.

A so-called consolidation bill was passed permitting any Connecticut railroad to unite with any other road that is entirely outside of this State, and to issue bonds, provided the line thus formed shall make one continuous route, and not be a parallel and competing line.

A bill to punish frauds in party primary meetings was passed; as was a bill to put a stop to "baby-farming." The commission to look into the irregularities of Secretary Northrup, of the Board of Education, submitted, and the legislature passed, a bill to reorganize that board on a new basis. A bill that practically permits Sunday-evening concerts passed. There was an appropriation of $5,000 for a statue of Nathan Hale, to be placed on the Capitol.

An important and just measure was enacted empowering the judge, in divorce and other cases of separation, to assign the child or children to either parent, as he may decide.

Other measures passed were the following: Bill relating to annual meetings of Superior Court judges; bill relating to pay of county commissioners; bill amending the liquor law; resolution appropriating $2,500 for repairs at the State Prison.

The Governor vetoed a bill reducing the tax on the bonds and floating indebtedness of railroads from one to one half of 1 per cent.

Biennial Sessions.—On this subject the Governor, in his message to the Legislature of 1884, says:

A proposed amendment to the Constitution, providing for biennial sessions of the General Assembly, received a majority vote of the last House of Representatives, and will be presented to you for final legislative action.

The people had an opportunity in 1879, after exhaustive discussion, to express their opinion of such a proposed change in our organic law; and the record shows that more than two thirds of them voted against it. As nothing has occurred since to add to the strength of the argument then urged in its favor, it is not likely, if again submitted, to be disposed of in a different way. The objection to the present constitutional provision is, I apprehend, founded more upon the length than the frequency of sessions. If the public business could be annually disposed of in six or eight weeks, instead of occupying more than seventeen, as it did last year, there would be less difficulty in obtaining the services, as legislators, of the best citizens of the State; and few would favor abandoning yearly sessions with their traditional and educational influences.

Finances.—The falling off in the income—$102,638.17—from the previous year, is largely accounted for by the failure of certain railroad companies to meet their taxes, and by the reduction of the amount heretofore paid by mutual-insurance companies of the State, as authorized by the act of 1882.

The funded debt was, Jan. 1, 1883	$4,590,600
There has been paid in reduction thereof during the year	318,500
So that the amount of funded debt now is	$4,272,100

Three and one half per cent. bonds of the issue of Dec. 1, 1883, have been sold, amounting to $1,068,500, at a premium of 6·85 per cent., the largest ever received from the sale of State bonds.

The balance in the Treasury, Dec. 1, 1882, was	$1,192,897 91	
The income of the fiscal year, ending Nov. 30, 1883, was	1,617,800 04	
Received from sale of bonds	525,197 50	
		$3,335,895 45
The expenditures were	$1,630,526 65	
Paid for State bonds redeemed	867,500 00	
Balance on hand	837,868 80	
Total		$3,335,895 45

Taxation.—On this subject the Governor says:

Under the law, as it is, if taxable property is not returned to the assessors, and they fail to discover it, it absolutely escapes all taxation; for no provision exists for the enforcement of a claim for taxation on property which has been concealed from the assessors, or inadvertently omitted from the grand list of a town. A large amount of property, in this way, is continually evading its part of the burden of public expense. If a statute were enacted authorizing towns, upon the discovery of unassessed property, to demand and collect of the party, who failed to return it, the amount—or double the amount—it would have been liable for, if it had been properly listed, it would be greatly for the advantage of citizens who comply with the law.

Savings-Banks.—There is in the control and management of the savings-banks of the State the sum of $92,679,068.01, a larger amount than ever before, and mostly belonging to the thrifty industrial element of the population. There has been an increase of 8,659 during the year in the number of depositors, and of $3,155,973.22 in the amount of their deposits. The commissioners suggest that, in their opinion, this interest needs no new legislation, except, it may be, in relation to a class of investments against which they have heretofore strongly protested. It appears that some of these institutions have invested in simply promissory notes, without collateral securities, the sum of $4,080,766.79.

Railroads.—The permanent investment in railroads has reached the enormous sum of $87,459,646.19. There are now, completed and in use, within the State limits, 1,360 miles of road, over which were carried, during the year, 16,352,617 passengers, nearly a million more than in any previous year. Their gross earnings amounted to $16,234,942.44, yielding an average profit of four and one half per cent. on $56,958,678.25, their aggregate capital.

The report of the Treasurer shows that these corporations have paid—protesting, however, against its excessiveness—the sum of $456,128.55 in taxes to the State.

Schools.—There was expended, during the last fiscal year, in support of the common-school system, $1,813,486.11, of which sum the State and the school fund together furnished $336,289.50, and the balance was raised by local taxation. More than 60 per cent. of the amount derived from taxation comes from twenty-five of the largest towns, and one third of it from the six largest cities. There are in the State 149,466 children, between the ages of four and sixteen, 120,537 of whom attended these schools some portion of the year. The Governor says:

> I have heretofore expressed an apprehension that our public schools, in the smaller towns of the State, are not as good as they were thirty years ago. Fuller information convinces me that such is the fact. In more than half the towns there are fewer children and less wealth than formerly; but the same number of districts, school-houses, and schools are maintained. In the 1,447 districts of the State, 56 schools average 5 or less pupils; 346 schools average over 5 and do not exceed 10; 322 schools average over 10 and do not exceed 15; 213 schools average over 15 and do not exceed 20.

The building, constructed at the expense of the State and the town of New Britain, is now completed and occupied by the Normal School. The junior class that entered in September is unusually large. A model school is in successful operation.

Courts.—The judicial expenses, amounting to $226,848.42, are $6,359.37 less than those of the previous year. During the year ending Dec. 1, 1883, the records show that the aggregate sessions of the Superior Court, in the trial of civil and criminal cases, occupied 790 days, scarcely more than one third of the time of the judges of that court, if they, unassisted, did the whole of the service.

Agriculture.—In this State nearly 45,000 persons, and more than $135,000,000 of capital, are employed in agriculture. The changed condition occasioned by the development, within a few years, of railroad transportation, compels the farmer of New England to avoid competition with the cheap lands of the West, by giving attention to such lines in his occupation as require special knowledge and skill. To assist in sustaining in Connecticut such a policy, bounties have been given to agricultural societies; an experiment station has been established, the first in the country; and the Storrs Agricultural School, for the special education of farmers, has been assisted by annual appropriations of money.

Fish-Culture and Shell-Fisheries—The action of the State in creating commissions to supply the lakes, rivers, and streams with a variety of fish, and to promote the cultivation of oysters, has been productive of the most satisfactory results. The Shell-fish Commission has, within a few years, developed an industry that gives employment to a large number of men, involves large amounts of capital, and promises to continually increase its proportions.

The Fish Commissioners express the opinion that the present modes of fishing in Connecticut river are so destructive as to threaten the speedy extermination of shad, and in their annual report they call upon the Legislature to investigate the matter of the pollution of the rivers and streams of the State by refuse matter from mills and factories.

The commissioners review with regret the temporary failure to secure a permanent restoration of the salmon to its old haunts in the State. In 1874 New Hampshire, Vermont, Massachusetts, and Connecticut combined together and placed in the tributaries of the upper Connecticut about 1,000,000 young salmon. In 1878, as was anticipated, the salmon appeared in considerable numbers, averaging about fifteen pounds each; but, as it was a very large and valuable fish, nearly all that entered the river were taken. A few succeeded in making their way up to the foot of Holyoke Dam, but were there stopped by this impassable barrier. The result has been the disappearance of the salmon, never to return until a practicable fish-way shall be erected at the Holyoke Dam.

Charities.—The State has, during the year, wholly or partially, cared for 2,712 persons in its hospitals and other humane institutions, at a total expense of $257,261.17; and the people have, it is estimated, at the same time contributed, in local taxation, to the same class of charities more than $500,000.

The Insane Hospital at Middletown is intended to accommodate only 775 patients; but at no time during the year were there fewer than 842, while the average number was 854. The hospital comprises several cottages, besides the main building and annex.

The results of the school, established at Middletown, in 1869, for the care and training of friendless and neglected girls, have been exceedingly gratifying. The statistics show that more than two thirds of its wards, in number not less than 500, have been saved from a life of degradation and vice. During the year there were 48 commitments, and 54 girls were placed in country homes or among relatives. There are now in the school 192, between the ages of eight and nineteen, disposed of in families, occupying five separate buildings.

License Law.—The returns of county commis-

sioners show that 2,971 licenses were issued during the year, the total receipts from which amounted to $263,073.94. There is more popular contentment now than ever with the general provisions of the law relating to the manufacture and sale of intoxicating liquors.

Election.—On the 6th of November there were elected twelve State Senators, a full House of Representatives, and eight sheriffs. A sheriff in each county was chosen, and Senators in the odd districts. Five Republican sheriffs were elected (Hartford, New Haven, Middlesex, New London, and Windham counties) and three Democrats (Tolland, Fairfield, and Litchfield counties). Ten Republican and two Democratic Senators were elected. The legislature of 1884 will be constituted as follows:

	Republicans.	Democrats.	Majority.
Senate	15	9	6
House	154	95	59

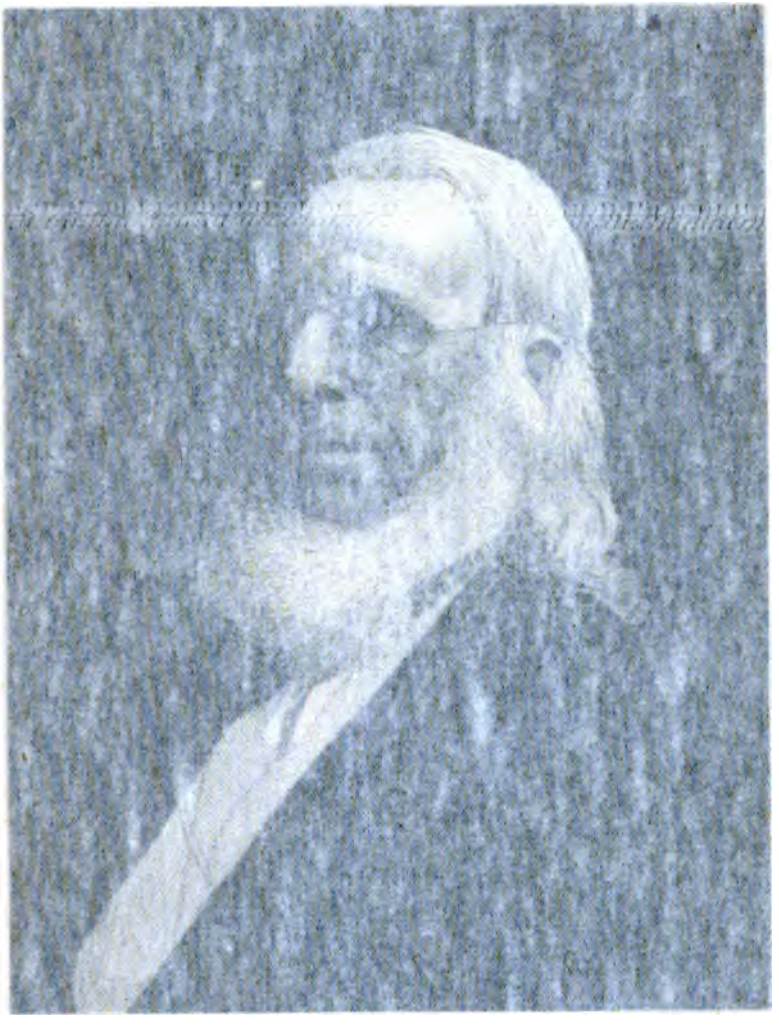
CONVALLARIA MAIALIS. Recent experiments with this drug seem to have established the following points: Its use is especially indicated in organic disease of the heart, with feeble pulse and decrease in the energy of its action; to lower the temperature of the body, to diminish the hyperæmia of the nervous centers, increase arterial tension, promote the action of the kidneys, and lessen the reflex action of the nerves. It is contraindicated in cases of gastric and intestinal derangement, in acute affections of the liver, kidneys, or spleen, in pregnancy, and in fatty degeneration of the heart. Its physiological actions, as tested upon animals, are as follow: On the brain it causes a tendency to somnolence, resulting from anæmia of the nerve-centers. On the kidneys it causes marked increase in function. Placed in direct contact with muscular tissue it completely destroys its contractility. By its action on the alimentary canal in large doses it causes salivation, vomiting, and increase in the natural muscular movements. It first causes a slight increase, and then a more decided decrease, in the animal temperature. On the respiration it has a somewhat analogous effect, first increasing the frequency, then causing a decrease, and finally complete cessation.

COOPER, Peter, an American philanthropist and merchant, born in the city of New York, Feb. 12, 1791; died there, April 4, 1883. On his father's side he was of English origin. Both his grandfather and his father were soldiers in the Revolution. His maternal grandfather, John Campbell, a successful potter in New York, did good service in the Board of Aldermen, and gave liberally of his means in the interests of his native land. The father of Peter Cooper was a hatter, and on the return of peace, in 1783, resumed his business in New York. Peter was the fifth of nine children, having six brothers and two sisters. As his father's means were limited, the lad received but few advantages in the way of schooling. At the age of seventeen he became an apprentice in a carriage-factory, and served his full time. He manifested a talent for inventions, and also adopted as a maxim for his future course, never to be in debt. The next two years of his life he spent in a woolen-factory at Hempstead, Long Island, where he invented an ingenious machine for shearing the nap from cloth. It had a rapid sale during the war of 1812, and yielded the inventor a large profit.

In 1813 he married Miss Sarah Bedel, of Hempstead. For a time he was engaged in cabinet-making; then he opened a grocery, and next purchased a glue and isinglass manufactory. This last business, in his hands, became very profitable, and was continued by him for half a century. Mr. Cooper's attention was early directed to the vast resources of the United States for the manufacture of iron, and in 1830 he erected extensive works at Canton, near Baltimore. Subsequently, he built a rolling and wire mill in the city of New York, where he first successfully applied anthracite coal to the puddling of iron. While in Baltimore he built, after his own designs, the first locomotive-engine constructed on this continent, and it was used successfully on the Baltimore and Ohio Railroad. In 1845 he removed the machinery to Trenton, N. J., and erected the largest rolling-mill at that time in the United States. In these works he was the first to roll wrought-iron beams for fire-proof buildings, and he used them afterward in his great monument, the Cooper Union in New York. He took into partnership with him his son Edward, and his son-in-law, Hon. Abram S. Hewitt, and the firm subsequently embraced in its operations large mines of ore and coal, quarries, forges, blast-furnaces, wire and rolling-mills, chain, horseshoe, and open-hearth steel works.

In the development and putting to practical use this great element in our national progress, as well as in the progress of the human family, Peter Cooper took a large share, and his name will be long honorably remembered in connection with the iron and coal industry.

The laying of the Atlantic cable was planned by him, and accomplished by his persistent efforts, even when his associates were discouraged and ready to give up in despair. Ten or twelve years of toil under difficulties which few men are able to overcome, of public ridicule, of refusal of capitalists to invest anything in it, of heavy outlays, and of apparent failure at the last, when the cable parted and sank to the bottom of the Atlantic—ten such years show the stuff of which Peter Cooper was made. In due time he reaped his reward. The same courageous and hopeful spirit was displayed in various other ways when Mr. Cooper was a member of the New York Common Council, when he urged the construction of the Croton Aqueduct, and when acting as a trustee of the



Pietro Cossa

Public School Society, and as one of the commissioners of the Board of Education.

Having devoted much careful thought and study to questions of finance and good government, Mr. Cooper made his views widely known; and the result was that, when he was in his eighty-sixth year, he was nominated by the National Independent party as their candidate for President of the United States. But the number of those who agreed with him as to the currency question (commonly called "Greenbackers") was small.

Mr. Cooper's career was not marked by brilliant exploits of genius or intellectual superiority, or by any of those startling performances which attract the admiration of mankind. He was an honest, industrious, faithful business man, ever advancing in prosperous undertakings, and at the same time keenly alive to all matters relating to public interest and public improvement. He amassed great wealth, and his aim was to use his large resources for the benefit of his fellow-creatures. Instead of waiting for the time when he could keep his hold on his wealth no longer, he chose to be his own executor, and to devote his money to the purposes he wished, while he was alive and able to secure their proper carrying out. He had always lamented his lack of liberal education, and the resolve seems early to have fixed itself in his mind to do all in his power to provide advantages and opportunities for culture to the working-classes of his native city. From this impulse arose that institution which has endeared his name and memory to thousands. He first secured an admirable site at the junction of Third and Fourth avenues, between Seventh and Eighth streets, with full light on all its four sides. From his own plans was erected the imposing structure known as "The Cooper Union for the Advancement of Science and Art." He superintended the rise of this massive building, and spared no expense to render it all that could be desired. On its completion, Mr. Cooper, in April, 1859, executed a deed in fee simple of this property to six trustees, who were empowered to devote all rents and income from it "to the instruction and improvement of the inhabitants of the United States in practical science and art." After due consideration, the trustees fixed upon a scheme which should "include instruction in branches of knowledge by which men and women earn their daily bread; in laws of health and improvement of the sanitary conditions of families as well as individuals; in social and political science, whereby communities and nations advance in virtue, wealth, and power; and finally in matters which affect the eye, the ear, and the imagination, and furnish a basis for recreation to the working-classes." Courses of lectures were established on social and political science, free to all; also, a free reading-room and collections of works of art and science were provided, and a school for instruction of women in the arts of design, by which they may gain an honorable livelihood. Still further, so soon as funds are in hand, the trustees purpose to establish a polytechnic school.

According to the last annual report of the Cooper Union, the building cost $630,000; and the total expenditures of the trustees on the building and education, from 1859 to 1882 inclusive, have been $1,603,614.17. In 1861 pupils who received certificates numbered 272; in 1883 the number reached as high as 955. In 1860 the number of teachers employed was 16; in 1882 it was 36. In 1860 the number of readers in the reading-room was about 250,000; in 1882 it was 476,000. In 1860 the expenditure was $30,800.71; in 1882 the expenditures amounted to $54,421.42. The income is chiefly derived from the rents of such parts of the building as are used for business purposes, and from an endowment by Mr. Cooper of about $200,000. The founder's children will add to this the sum of $100,000, in addition to the bequest of $100,000 in his will.

The last days of Peter Cooper were calm and peaceful. He was a devout member of the Unitarian denomination. The last sad offices for the dead were very largely attended, and the manifestations of grief at being called upon to part with one so universally respected and so widely beloved were striking and impressive. Shortly before his death was printed a volume entitled "Ideas for a Science of Good Government, in Addresses, Letters, and Articles on a Strictly National Currency, Tariff, and Civil Service. By Hon. Peter Cooper, LL. D."

COREA (officially called Chosen), a kingdom of Eastern Asia, occupying the peninsula opposite the Japanese island of Niphon and bordering on the Chinese province of Manchuria. The King of Corea acknowledges the nominal suzerainty of China, but has for ages preserved a practical independence. The country still pays a tribute to China, but the amount has been reduced to a nominal sum. An embassy visits Peking every year with certain prescribed gifts, and receives in return the Chinese calendar, which is accepted and employed by the Coreans as a sign of dependence. On the accession of a new King, the Chinese Emperor is notified, and his sanction for the investiture is obtained.

At different times the country has been overrun by both the Chinese and the Japanese. The suzerainty of China was accepted the last time as a protection against the Japanese, who threatened to subjugate the country, claiming suzerain rights, which were resisted by the Coreans, based upon a conquest in the early part of the Christian era. The object of the Japanese invasions, which were the occasion of accepting vassal relations to China, was to use Corea as a base of military operations against China, and the motive for acknowledging Chinese suzerainty was to avoid the claims of supremacy asserted by Japan. The Japanese Government has never renounced its title

to suzerainty, and after the invasion maintained a garrison in Fusan, kept that place open to Japanese trade when intercourse was broken off with all foreigners, exacted for a time an annual tribute, and exerts to this day a certain measure of political control. The relations with China, established for purposes of mutual protection, have continued to bear the character of a friendly alliance, in which the condition of vassalage is treated simply as a matter of form. For two hundred years China has avoided complications with Corea, and has never materially interfered with her affairs. In the treaty of commerce between the United States and Corea, the first clause contains a recognition of the sovereign rights of China over Corea, which became important again and mutually advantageous when it was feared that Russia or some other European power might seek to establish a protectorate.

In consequence of the Japanese and Manchu invasions which devastated and depopulated the country, the Corean Government adopted a policy of complete non-intercourse with foreigners. The mineral industries were purposely neglected, and the wealth of the country in gold and silver was kept concealed by means of rigorous laws against mining, so as to avoid presenting temptations to new conquerors. This policy of seclusion is the cause of the stagnation and backwardness of the country, and has kept the people in a condition of poverty. The population of Corea is estimated at 11,000,000, and the number of habitations at 1,700,000.

Government.—The reigning King is Li Fin, the twenty-eighth successor in a line which has reigned for 492 years. The King is an absolute monarch. He has three ministers who hold office for life. There are six governmental departments, which have cognizance respectively of the appointment and dismissal of subordinate officers; the supervision of finances, taxation, and coinage; the government of schools, the examination of literary candidates, and the regulation of ceremonies; the army, manufacture of arms, and postal affairs; the supervision of courts and the administration of justice. The heads of departments are associated with the three chief ministers in the Council of State, which makes a daily report to the King of the results of its work. The official class constitutes the nobility. There are no hereditary titles, and though the aristocratic families preserve their power and distinction, each man's rank is derived from the highest office he has held. The attachment of rank-distinction to official posts is the cause of frequent changes in the offices, in order that the titles of rank may be multiplied, and the cause also of fierce rivalry between the different families of the upper class for these posts and their division into factions which keep up a constant turmoil. Officials possess certain special privileges, such as immunity from arrest. They can only be summoned into court on a writ from the Department of Justice. The system of appointment is similar to that which prevails in China. Literary examinations are held at stated intervals, and three classes of diplomas are awarded to the successful candidates, which make them eligible to appointment in the corresponding grades of official position. The common people take very little part in public affairs.

The Army.—The army consists of a militia, in which 1,300,000 are enrolled; but this military force is not effective, as the men are not drilled and have no arms.

Education. — There are numerous private schools, but no public system of education. Nearly all of the common people can read and write in the Corean language, in which many simple books are printed. The language of learning is Chinese, in which the upper classes receive their literary education. After the opening of the country to foreign intercourse by the American treaty, the Government established an English school at Seoul, the capital. The teachers were at first Chinese, educated in the United States. Subsequently Europeans were engaged.

Customs and Institutions.—The titles to land are derived from the Government, and are carefully registered in public records. The tenure depends on the payment of taxes, which are levied in kind, and are an oppressive burden on account of the extortions of officials. The only coin in use is the copper cash, of which 525 are equivalent to a Mexican dollar. The roads are narrow and are unfitted for vehicles, except the two-wheeled carts used to transport merchandise. Bulls and Corean ponies are used as pack-animals. The wealthy travel on horseback or in sedan-chairs.

Post-offices are maintained in the principal towns, and on some of the highways the Government provides post-houses for public use.

The majority of the houses are only huts, with mud walls and floors and thatched roofs. The houses of the well-to-do have stone foundations and flues running through them, which serve as stoves. The building itself is of wood, with a tiled roof. The floors, walls, and windows are lined with paper.

The clothing of the common people is of cotton or linen cloth. They are shod with sandals made of straw or twine, with soles of rawhide. Their conical hats are made of horsehair. Their leg-coverings are wide trousers divided below the knees and fastened about the ankles. Their coat is a long, loose tunic, with flowing sleeves. Their winter clothing is wadded.

A modified form of bondage exists. Sometimes people voluntarily enter the servile state in order to escape extortion and oppression. The artisans and laborers belong to powerful guilds, which enable them to maintain a considerable degree of comfort and independence. The wages earned by laborers average about

fifteen cents a day, and by artisans about twenty-five cents. The chief domestic industries are the manufacture of silk, cotton and linen cloths, stoneware and porcelain, hats, shoes, paper, mats, fans, screens, combs, pipes, brushes, tiles for roofing, furniture, and tools for mechanical and agricultural uses. Cloths are woven by hand, and pottery is made on the wheel. With the exception of some handicrafts peculiar to the country, in which a high degree of skill is exhibited, most of the productions are rude and primitive. From specimens of old bronze and porcelain, it is evident that in former ages a higher stage of art and skill existed. It was the Coreans who introduced art and learning into Japan, and the Japanese affirm that at the period of the last emigration all the best workmen, driven away by war and desolation, settled in their island.

Commerce, Products, and Resources.—Corea is a mountainous country. From the Shanyan-alin range, which extends along the western coast from north to south, smaller ranges project, which extend to the opposite shore. In the western and central parts of the peninsula are several plains which are exceedingly fertile. The country is well watered, and in many parts well wooded. The climate of Corea, though the winters are severe in the north, in general resembles that of Southern Europe. The vegetation is exceedingly rich. Besides many flowers which are peculiar to the country, a great number of flowering plants which are cultivated in Europe grow wild. Among the trees are three of commercial value—the cork-oak, the mulberry, and the lac-tree, from which a golden-yellow gum of the finest quality is obtained. The rich soil brings forth every kind of fruit and grain. Cotton is raised easily, and is found growing wild in many spots, even in the mountains. Other products are hemp, flax, tobacco, madder, and indigo. The most important is the Corean ginseng, prized above all other varieties. The occurrence of this root in the country is partly the cause of the idleness and spirit of wandering and adventure which pervade Corean society. The finest quality brings $1,500 a pound in the Chinese market.

The mineral wealth of the country surpasses even its extraordinary agricultural resources. The mines which were worked in former centuries have been abandoned, except a few, which are exploited in an inefficient manner by the Government. The quest and digging of the precious metals is forbidden on pain of death. Of late years these laws have been executed with the greatest rigor, but the temptations to break them are so strong that considerable quantities of gold are smuggled out of the country. This metal, as well as silver, is found in all parts of Corea. In the middle and northern provinces there are many streams whose beds are rich in gold-dust. The region next to the Russian boundary has valuable coal-beds and copper-mines, and contains sulphur, arsenic, quicksilver, lead, tin, and iron, and also beautiful varieties of marble and granite.

Of the domestic animals, the cattle are well bred, and would compare favorably with those of the United States. Bulls and cows are used as beasts of burden. The horses are of a diminutive race, and poor in quality. The swine are also inferior. Goats and sheep are not often seen.

The commerce with Japan constituted the entire foreign commerce of the country up to the time of the opening of treaty-ports by the recent treaties. The Japanese were allowed only in a few places, none of them near the capital, and were subjected to harsh restrictions. Seven ninths of the commerce was with the remote port of Fusan. The total value of the trade with Japan increased from 348,000 yen in 1877 to 3,827,000 yen in 1881, aggregating for the five years 9,078,000 yen. Most of the articles sold to the Coreans were of European manufacture. The total imports for the five years were valued at a little more than 4,000,000 yen. Nearly half consisted of cotton goods, chiefly shirtings, which were imported to the value of over a million yen in 1881. The goods were almost entirely of English manufacture. This trade is capable of expansion, as the Coreans grow but little cotton and possess only rude hand-looms. Besides shirtings, cambrics and lawns found a demand. There was also a market for drugs and dyestuffs. The chief article of Japanese production imported was copper, from which the clumsy currency of the country is made. The Japanese merchants, in the absence of any medium of international exchange, conducted their trade chiefly by barter. Japanese porcelain, copied exactly from Corean ware, is imported in quantities and is preferred to the domestic product. Tobacco is another leading article of import. The most important staple exported is rice, for which there is always a demand in China, and at present prices in Japan. Rice is sold in Corea at about one third the price it brings in Japan. Gold comes next, of which, in spite of the prohibition, there were nearly 1,000,000 yen exported in the five years. Hides are the next largest export article, and then peas of the kind from which the "bean-cakes" of Northern China are prepared. A coarse stuff from which the clothing of women of the poorer classes in Japan is made, raw silk and pongee, sea-weed, *bêche-de-mer*, silver, dried fish, and ginseng were the other exports. The trade is carried on chiefly in steamers that arrive at Fusan and at Gensan, which is one of the largest cities, once or twice a month. The commerce of the five years employed 401 steam and sailing vessels of European build, having a total capacity of 60,000 tons, and 1,700 junks of 20,000 tons.

Great expectations have been raised in Europe and America of the trade which may be developed with "the hermit nation" after the opening of its gates to foreign intercourse.

The Government of Corea is disposed to encourage the trade for the revenue it will yield. One of the plans for developing commerce is a museum of articles of foreign production, such as machinery, mining and agricultural implements, and all classes of fabrics which merchants and manufacturers will send to be put on exhibition, in the hope of finding a demand in Corea. According to the report of the naval officers who accompanied the German embassy which concluded the treaty of commerce, the foreign trade of Corea is not capable of assuming any considerable dimensions. The people are described as having few and simple wants, and not inclined to work more than is necessary to satisfy their moderate requirements. They are said to lead in general a poor life, and are depicted as indolent and uncleanly compared with the Japanese, and lacking the diligence of the Chinese. They say that agriculture and cattle-growing are the chief and most profitable employments, and describe the land as being fertile and well cultivated.

The importation of shirtings of coarse quality is the only trade which is likely to develop rapidly. This will fall to the English, unless American manufacturers are able to compete with them. For the Corean rice and for the timber existing in large forests near the sea, there is a market close at hand in Japan and the north of China.

Commercial Relations.—The treaty of commerce with the United States, signed in 1882, was ratified in 1883. In this and the provisional treaties made with England and Germany the Corean Government was allowed to levy an import duty of 10 per cent. on articles of necessity, and 30 per cent. on articles of luxury. Pressure was brought through the Japanese Government to have the scale altered to a general tariff duty of 5 per cent., the same rate as in the existing treaties between China and Japan and the Western powers. This limitation was exacted of China and Japan by force, and it was expected that they would support Corea in her desire to establish the higher scale from motives of policy, in order to obtain more liberal terms for themselves when their treaties came to be revised; but the wishes of the Western powers have, as usual, prevailed. The Corean duties are payable in Mexican dollars or Japanese silver yen, instead of in the inconvenient Haikwan tael of variable standard. A Corean embassy arrived in the United States in September, 1883.

COSTA RICA. The President of Costa Rica is Don Prospero Fernandez; Vice-Presidents, the ministers Señores E. Figueroa, V. Guardia, B. Soto, and M. Guardia. The Cabinet was composed as follows in 1883: Minister of the Interior, Charitable Institutions, and Worship, E. Figueroa; Commerce and Finance, B. Soto; War and Navy, M. Guardia; Interior and Justice, V. Guardia; President of Congress, Señor J. M. Carazo; Secretaries, V. C. Segreda and J. Solano; President of the Supreme Court, Dr. R. Orozco; commander-in-chief of the army, Gen. H. Duran.

Finance.—In the budget estimates for the fiscal year ending April 30, 1884, the gross revenue and expenditures were set down as follow:

REVENUE.

From customs	$574,000
From monopolies (spirits and tobacco)	746,000
From postal service, telegraphs, national printing-office, railroads, etc.	165,600
From direct taxation	101,000
From sundries	825
From unforeseen income	20,000
Total	$1,607,425

EXPENDITURE.

Department of the Interior	$172,374
" Police	36,232
" Finance and Commerce	174,859
" Justice	87,561
" War	252,449
" the Navy	38,900
" Public Works	341,441
" Public Instruction	180,110
" Public Worship	19,340
" Public Charities	1,660
" Foreign Affairs	36,880
" Collection of internal revenue, and payments on account of internal debt	1,167,824
Total	$2,504,130
Deficiency	896,705

Public Debt.—The final treasury accounts for the fiscal year ended April 30, 1880, stood as follows: Liabilities: Public debt, $6,258,629, of which foreign indebtedness, $5,463,285; bills of exchange due, $176,886; paper money issued, $105,915; sundry consolidated debts, $161,682; internal loan, $140,774, and floating indebtedness, $210,087. Assets: $10,918,062, of which public improvements such as railroads, etc., $10,281,778; tobacco and spirits in warehouses, $155,821; deposits in banks, $156,788; money due by municipalities, $30,805; and other outstandings, $293,370.

In 1883 the foreign debt of Costa Rica amounted to £3,276,000, on which no interest had been paid since 1874; quoted on the London stock exchange, those of the loan of 1871 (£940,300) at 17 and 19, and those of 1874 (£2,335,700), at 13 and 15 per cent. President Don Prospero Fernandez has now made a proposition to Mr. Minor C. Keith to make, if feasible, an arrangement with the foreign bondholders, by pledging the customs revenue for coupons due and not paid, and for the creation of a sinking fund for the eventual liquidation of the capital. After the arrangement is perfected, Mr. Keith is to procure a $6,000,000 loan to complete the principal railway line.

Customs collected.—1876–'77, $557,407; 1877–'78, $846,691; 1878–'79, $921,406; 1879–'80, $800,957; 1880–'81, $647,803.

Railroads.—The following lines of railroad are in operation: Alajuela-Cartago, *via* Heredia and San José, 43 kilometres; from Punta Arenas to Barranca, 14 kilometres; and from Limon to the Rio Sucio, 113 kilometres; together, 170 kilometres. The gross earnings in 1882–'83 were $52,931; the expenses were $82,857.

Telegraphs.—There are in operation 727 kilometres, the service being performed by 16 offices. The lines are the following: 1. From Cartago to the Nicaraguan frontier *via* San José, Heredia, Alajuela, Esparza, with branch lines to Grecia, San Ramon, Punta Arenas, Taboba, Liberia, Santa Cruz, and Nicoya (576 kilometres). 2. From Limon to San José (151 kilometres). Number of messages in 1882–'83, 27,589, of which inland private, 18,982; for countries abroad, 1,304; Government messages, local, 7,248; beyond the country, 55. Income, $4,940; expenses, $17,718.

Postal Service.—The income from postal service in 1882–'83 was $50,000; the outlay, $80,000.

Commerce.—Of the 336 vessels that entered Costa Rican ports in 1883, 21 were navigating under the Costa Rican flag; 213 hailed from other Spanish-American countries; 39 were American, 30 British, 14 German, 12 French, and 7 of other nationalities.

In 1882 there entered the port of Punta Arenas 100 vessels, 79 being steamers, 4 ships, 8 barks, 13 brigs, and 2 schooners; 79 being under the American flag, 7 French, 5 English, 2 Italian, 1 Danish, 1 Norwegian, and 5 German; the aggregate tonnage being 168,528. Limon, on the Atlantic, has been declared a free port for ten years to come.

The imports in the fiscal year 1879–'80 *via* Punta Arenas amounted to $2,669,861; *via* Limon during the first four months of 1880, $133,500; the exports through Punta Arenas, $3,524,810 during twelve months, and through Limon, four months, $211,142.

The chief articles exported from Punta Arenas were: Coffee, 23,266,196 pounds, worth $3,436,085; hides and skins, 276,279 pounds, $50,603; India-rubber, 26,319 pounds, $10,-890; and other goods, re-exports, comprised $27,732.

The trade between the United States and Central America in 1879–'83 was as follows:

FISCAL YEAR.	Imports.	Exports.
1879	$2,251,589	$1,110,603
1880	3,318,469	1,729,215
1881	3,159,786	1,541,229
1882	4,735,398	1,586,558
1883	5,121,815	1,986,813
Total	$18,581,557	$7,904,418

IMPORT OF CENTRAL-AMERICAN COFFEE AND INDIA-RUBBER INTO THE UNITED STATES.

FISCAL YEAR.	Coffee.	India-rubber.
	Pounds.	
1878	13,868,955	$131,170
1879	11,463,186	106,673
1880	19,254,218	257,891
1881	15,856,327	467,370
1882	22,449,112	1,027,015
Total	82,893,748	$1,990,119

CUBA. The area of this Spanish West India island is 43,220 square miles, and the population, which, according to the census of 1862, counted 1,359,238 souls, was shown by the last census (1882) to have increased to 1,521,-684, of whom 850,520 were males and 671,-164 females. The six provinces into which Cuba is divided comprise 33 "partidos judiciales" and 130 "ayuntamientos." The province of Havana counted 435,896 inhabitants; that of Santa Clara, 321,397; Matanzas, 283,-121; Santiago de Cuba, 229,821; Pinar del Rio, 182,204; and Puerto Príncipe, 69,245.

The most populous ayuntamientos are: Havana, 198,721 inhabitants; Matanzas, 87,760; Santiago de Cuba, 71,307; Cienfuegos, 65,067; Puerto Príncipe, 46,641; Holguin, 34,767; Sancti Spiritus, 32,608; Guanabacoa, 29,789; Trinidad, 27,654; Manzanillo, 23,208; Santa Clara, 22,781; Pinar del Rio, 21,870; and Colon, 20,398.

The male portion of the population is composed of 571,766 Spaniards, 7,944 white foreigners, 46,698 Chinamen, and 252,660 colored people. The female portion comprises 430,-195 Spanish, 3,216 foreign, 84 Chinese, and 242,320 colored females. This gives a total of 998,961 persons of Spanish origin, 11,260 of foreign, 46,872 Chinese, and 494,980 colored.

Army.—The commander-in-chief and Captain-General of the island is Don Ignacio Maria del Castillo, born at Jalapa, Mexico, Feb. 9, 1817. He arrived from Spain at Havana on Sept. 28, 1883, to take charge of this port.

The strength of the Spanish forces in Cuba, by decree of the Minister of War at Madrid, was fixed for 1883–'84 at 25,653 men.

Finances.—In 1878 Captain-General Martinez Campos, after making the arrangement with the insurgents at Lanjon, issued a decree virtually suspending payments from the Cuban Treasury up to July 1st of that year, and since then no steps have been taken to liquidate the indebtedness, the annual interest on which amounts to $7,000,000. An issue of paper money has been made to the amount of $60,-000,000, and the premium on Spanish gold fluctuates wildly at times; this depreciated currency renders living, dear as it has been at all times, still more expensive.

Subsequent to the collapse of the insurrection, a tax law was passed, which created eleven kinds of taxation: (1) on the transfer of property by inheritance, etc., of ¼ to 8 per cent., estimated to produce $1,091,000 per annum; (2) direct taxes (income-tax) of 16 per cent. on the profits cleared by residents of cities, and 5 per cent. on sugar and tobacco planting; receipts under this head being estimated at $6,335,800; (3) on railway-traffic, to produce $1,000,000; (4) on slaughtering, $592,800; (5) on passports, $850,000; (6) import and export duties, and ship-dues, $21,359,400; (7) indirect taxes, such as stamp-dues, $3,488,800; (8) on lotteries, $3,477,000; (9) on the salaries of Government officers; (10) a tax of $12 a head which the owner of liberated slaves has to pay if he retains them for domestic service, $500,000; (11) a tax of 5 per cent. on the

budgets of all municipalities, $412,500. In August, 1883, the "Gaceta Oficial" of Havana contained the following details of a dispatch from the Minister of the Colonies, Madrid, to the Captain-General of Cuba:

All country property now pays 2 per cent., without distinction. The reduction last year was granted only to those cultivating sugar and tobacco. The sur-tax on export duties is reduced from 10 per cent. to 5 per cent. from July 1st. The duties on tobacco exported from the Central and Oriental Departments have been reduced 30 per cent. The additional tax on all drinkables has been abolished and in place of it has been imposed a tax of 2 cents per litre for casks and 3 cents per litre for bottles and jars. The municipality has been authorized to raise 50 per cent. on this tax.

This latter tax in reality substituted a 22 per cent. tax for what was 15 per cent. before.

The budget for 1881–'82 estimated the expenditures at $34,635,848.

The previous year had left a deficit of $20,000,000. The year before had left a surplus of $3,367,950.

The budget estimate for the fiscal year 1882–'83 stood: income, $34,442,979; outlay, $34,626,910.

Paper money (bank bills) is destroyed at stated periods, in moderate amounts ($200,000 on Aug. 31, 1883), in accordance with the law of amortization of July 7, 1882.

According to the new budget law, the administration-general of the Treasury of the island of Cuba has been changed into a general intendancy at Havana, with six sub-intendancies at Havana, Pinar del Rio, Matanzas, Santa Clara, Puerto Principe, and Santiago de Cuba.

According to a statement published at Havana in August, 1883, the royal lottery produced, during the last fiscal year, net profits amounting to $5,302,519, against $5,295,679 during the previous year. In 1882–'83 the administration drew with the unsold tickets, $948,100, against $1,910,400 in the preceding year. In the five lotteries drawn since July 1, 1881, there remained unsold 139 tickets on July 1, 1832, which was equivalent to a loss of $548,280 to the treasury.

On Nov. 14, 1883, the Cuban treasury, on authorization from the home Government, secured from the Spanish Bank of Cuba a loan of $500,000 for six months, at the rate of 7½ per cent. interest per annum.

Havana Gas Companies.—At a meeting of shareholders of the two gas companies of Havana, on Aug. 31, 1883, the proposition made by Señor Dorilla on behalf of several New York capitalists, to lease the works of the two companies for a term of twenty years, was accepted, the shareholders of the "Española" to receive 5 per cent. net yearly.

Emancipation.—On Nov. 15, 1883, the "Gaceta Oficial," of Havana, published a royal decree ordering that all doubts concerning the application of any part of the law of gradual abolition of slavery shall always be resolved in the sense of the widest latitude for the liberty of the slave; and that, therefore, owners of slaves, when the latter have acquired their freedom, shall not compel them to pay indemnities for their children. The decree argues that the law orders that under no consideration shall the families of slaves be separated; and that if parents were obliged, when freed, to pay for the rescue of their children, other sections of the law providing for gradual abolition would be violated.

News was received from Havana in November, 1883, that the new Captain-General endeavors to carry out the recommendations of the Liberal party in Cuba to do justice to the 30,000 slaves illegally held in bondage since 1870. He was also taking active steps to ease the situation of the Cuban treasury, consolidate the floating debt, and carry out fiscal reforms.

Immigration.—Quite a movement was set on foot by Señor Isabal, on the occasion of the meeting of the Geographical Congress, at Madrid, during the latter part of 1883, to promote white emigration from Europe and the Canary Islands to Cuba; and this movement has met with a hearty response from Santiago de Cuba, where planters, merchants, and manufacturers met on Oct. 8, 1883, and took the necessary measures toward co-operating with their Peninsular colleagues.

Railroads and Telegraphs.—In 1880 there were in operation 871 miles of railway. The length of telegraphs in operation was 2,835 miles, and the number of offices 187.

Political and Economical Status.—The surrender at Lanjon, Feb. 10, 1878, terminated the insurrection on the island after a ten-years' war, during which, according to the estimate of Captain-General Don Joaquin Jovellar, 200,000 combatants perished by the sword and disease, and the cost to Spain and Cuba was $700,000,000. The strife ruined entire provinces; those of Santiago de Cuba and Puerto Príncipe, even in 1883, still presented a painful spectacle of impoverishment and desolation. In August, 1879, a fresh rising took place, and was quelled less by the Government forces than by public opinion and the firm and resolute attitude of the Liberal Autonomist party. The basis on which the capitulation of Lanjon had been agreed to, embraced the following conditions: The island of Cuba is granted an organic political and administrative régime equal to the one which rules the island of Porto Rico; complete amnesty and liberation of all slaves and Asiatic colonists who fought in the ranks of insurrection; Cuba to be permanently represented in the Cortes by her own deputies duly elected, and thus to recover the privilege of which she had been deprived in 1836. This revival of political life caused the formation of the now existing parties in Cuba. In August, 1878, the so-called Liberal party was organized, most of whose members are creoles. Its programme is the immediate, sweeping aboli-

tion of slavery, now disguised under the name of "Patronato"; the fostering of white immigration by families, but left to private initiative; the granting of the usual necessary liberties; independence and decentralization in municipal and provincial affairs; the autonomy of the colony, that is, its own administration and free voting of taxes; finally, free trade.

In order to oppose this Liberal-Autonomist party, the "Constitutional Union" was formed, mostly made up of Spaniards. It has for its object: To preserve as long as possible compulsory labor; to endow the colony with a political and administrative *régime* analogous to that of the Peninsular provinces; and finally to maintain the system of protection.

The struggle between these two parties in Cuba is most lively, especially as the Conservative party accuse the Liberals of being the enemies of Spain, and treat them as such. The Government is not an altogether passive spectator of this political strife, but invariably leans toward the Constitutional Union, to the detriment of the Liberal Autonomists.

The prosperity of young societies known by the names of colonies is dependent upon three conditions: 1. The right of self-administration. 2. A good method of acquiring land and a system of succession which, while it favors the equality of conditions, facilitates a rapid transfer of property and stimulates the occupant of the soil to cultivate and improve it. 3. Moderate taxation—in other words, cheap government.

Cuba does not yet possess the right of self-administration, power concentrating in the hands of the Captain-General and of the Minister of the Colonies. This administrative centralization is felt throughout the details of local existence and does not allow the vitality of the country to find full scope, which is indisputably a great drawback. There is the pressure on society of a numerous bureaucratic army, devoid of fixed interests in the island. With few exceptions, these office-holders are native Spaniards. The fall of a cabinet in Madrid frequently involves the dismissal of numerous officers in the ranks of the administration, to be replaced, not by individuals competent for their new employ, but by those who belong to the victorious party at home. This abuse has come up for debate in the Cortes, and grave revelations of immorality in financial matters have been made relating to the local administration of Cuba, causing the Minister of the Colonies himself to promote radical reform.

The annual message of the President of the United States, of December, 1883, contains the following passages:

It is understood that measures for the removal of the restrictions which now burden our trade with Cuba and Porto Rico are under consideration by the Spanish Government. The proximity of Cuba to the United States, and the peculiar methods of administration which there prevail, necessitate constant discussion and appeal on our part from the proceedings of the insular authorities. I regret to say that the just protests of this Government have not as yet produced satisfactory results.

I have alluded in my previous messages to the injurious and vexatious restrictions suffered by our trade in the Spanish West Indies. Brazil, whose natural outlet for its great national staple, coffee, is in and through the United States, imposes a heavy export duty upon that product; our petroleum exports are hampered in Turkey and in other Eastern ports by restrictions as to storage and by onerous taxation. For these mischiefs adequate relief is not always afforded by reciprocity treaties, like that with Hawaii or that lately negotiated with Mexico, and now awaiting the action of the Senate. Is it not advisable to provide some measure of equitable retaliation in our relations with governments which discriminate against our own? If, for example, the Executive were empowered to apply to Spanish vessels and cargoes from Cuba and Porto Rico the same rules of treatment and scale of penalties for technical faults which are applied to our vessels and cargoes in the Antilles, a resort to that course might not be barren of good results.

United States Commercial Agent Ford, of Sagua la Grande, in a report on the carrying-trade between that port and the United States, says that if, during the next four years, "American tonnage continues to decrease and English steam tonnage to increase at its present ratio, the American flag will be seen only above the United States consulate, and the chief business of the consular office will be merely to give certificates of invoices and to draw bills of health for British steamers." In regard to discrimination against American vessels and in favor of British vessels, Mr. Ford makes the following comparisons, and offers the following suggestions as remedial measures:

In my judgment, it would be an act of wisdom in our law-makers should they abolish all consular fees now paid by American vessels, excepting those for noting and extending protests; and it would also be well to annul the law allowing three months' extra pay when a seaman is left in the hospital. The other section relating to the three months' extra wages is a just and equitable statute, and should continue in force. To abolish that would entail endless annoyance and trouble to consular officers, without benefiting any one, helping not even the complaining shipmasters. Another relief would be to allow everything which enters into the construction of vessels to pass free of duty, and to permit, under proper restrictions, the withdrawing from bond of whatever is used on our vessels.

An additional disadvantage under which American vessels labor when brought in competition with British vessels comes from our method of taking tonnage measurement. British vessels are measured with deductions which are not allowed to American vessels. I will give, as examples, two British steamers which loaded in Sagua this year: the British steamer Clandon, gross tons 1,971, net tons 1,286; and the British steamer Leina, gross tons 1,732, net tons, 1,141. These paid tonnage dues on their net measurement. Had they been American steamers (and up to July 1, 1882, no deductions were made for even coal-space), dues would have been collected on the gross tonnage. The difference in these charges at $1 per ton is considerable, and the British steamers thus secure over ours an advantage of about 50 cents per hogshead on their cargoes.

Commerce.—There were exported from Havana, in 1880: 90,523 boxes, 219,323 bags, and 190,083 hogsheads of sugar; 12,433 hogsheads, of molasses; 1,476 tierces of honey; 9,873 pipes

of 125 gallons rum; 8,779 arrobas of 25 pounds Spanish wax; 12,464,936 pounds of tobacco, and 153,141 thousand cigars. Instead of being an exporter of coffee, Cuba now imports the same from Porto Rico. Copper-ore is, however, likely to soon again become an export article to England from the Cobre Mining Company's mines near Santiago de Cuba. The working of these mines was stopped by the insurrection, but is now being resumed.

The amount of cigars shipped from Havana to the United States during the year ended Sept. 20, 1882, was $3,341,729 worth, of which New York received $2,387,648; San Francisco, $291,756; Chicago, $174,121; Boston, $144,604; and Philadelphia, $57,688.

CHIEF ARTICLES OF MERCHANDISE IMPORTED INTO HAVANA.

ARTICLES.	Weight or measure.	Average during the ten years, 1873–'82 inclusive.
Jerked beef	Quintals of 101¼ pounds	
Codfish, American	English	291,258
Codfish, European	"	88,881
Flour	"	68,680
Rice from Spain	Barrels	280,895
Rice from the East Indies	Quintals	21,765
Lard, American	"	867,991
Wine, Spanish	"	148,411
Olive-oil	Pipes	94,646
Hogshead-shooks, American	Jars	260,495
American boards	Number	82,597
American box-shooks	Thousand feet	24,028
Coal from Europe	Number	257,728
Petroleum, American	Tons	168,677
	Quintals	146,869

VESSELS ENTERED DURING THE FIVE YEARS FROM 1878 TO 1882 INCLUSIVE.

YEAR.	Total entries.		Spanish.		American.	
	Vessels.	Tons.	Vessels.	Tons.	Vessels.	Tons.
1878..	1,626	979,949	582	269,836	740	481,752
1879..	1,752	1,103,489	569	330,166	859	513,692
1880..	1,426	1,018,140	491	291,481	663	493,550
1881..	1,389	1,114,085	502	351,180	573	462,048
1882..	1,424	1,258,181	528	489,908	570	496,736

About the trade between Cardenas and the United States, the American consular agent, Nuñez, remarks:

The export tonnage in English bottoms is increasing, for the reason that the English vessels are generally steamers carrying heavy freight, and at less rates than American vessels can afford to charter for. It may not here be inappropriate to suggest that if ever this island becomes an integral portion of the United States, the impetus which that fact would give to American ship-building would be very great. All the trade, in such an event, would be coast-trade, and in American bottoms. A growing article of export from Cardenas is asphaltum, and it is claimed that the Cardenas asphaltum is superior to that of any other part of the world. There is much asphaltum in the island of Cuba; much of it is of questionable quality and is called *chapapote*, but that which is obtained at this port is dredged from the bed of the bay, and at upward of sixty feet below the surface of the water, and is supposed to be inexhaustible. It sells for export at $30 per ton.

Sugar.—This industry has been thoroughly revolutionized by the introduction of central sugar-houses and new processes; clayed sugars have gradually gone into disuse, and centrifugals and muscovadoes have taken their place, as the ensuing table of exports fully demonstrates:

YEAR.	Box Sugar.			Muscovadoes, etc.		
	Consisting of		To the United States.	Consisting of		To the United States.
	Tons.	Boxes.		Tons.	Hogsh'ds.	
1878..	71,390	375,735	218,020	468,039	652,695	631,656
1879..	72,858	383,465	185,347	551,077	692,432	738,811
1880..	45,846	241,295	115,202	449,987	728,724	681,154
1881..	35,057	184,512	94,008	414,010	670,461	628,051
1882..	37,069	195,102	98,604	500,789	810,995	788,127
Total.	262,220	1,380,109	651,181	2,318,902	3,755,307	3,467,799

The tabular statement below exhibits the fluctuating character of Cuban sugar-production, and that the United States more and more absorb it almost altogether:

YEAR.	Production.	Stock on hand Jan. 1.	Local consumption.	Export to the United States.	Export to other countries.	Total export.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1876..	590,000	14,150	55,000	436,908	100,845	537,543
1877..	520,000	11,008	50,000	419,000	41,810	460,810
1878..	533,000	19,200	50,000	430,521	43,998	474,427
1879..	670,000	27,200	50,000	481,972	141,963	723,935
1880..	580,000	22,900	50,000	405,000	55,000	460,000
Total.	2,843,000	94,458	255,000	2,173,396	383,616	2,656,715

TRADE BETWEEN THE UNITED STATES AND CUBA DURING THE FIVE YEARS 1879 TO 1883.

YEAR.	Imports.	Exports.
1879	$63,649,656	$12,201,691
1880	65,423,018	10,924,633
1881	63,003,404	10,999,276
1882	70,450,652	11,775,073
1883	65,544,534	14,567,918
Total	$328,071,264	$60,468,591

The chief articles of domestic production imported from the United States during the fiscal year ended June 30, 1882, were cattle and horses, $580,592; breadstuffs (including only 56,955 barrels of flour), $1,029,653; coal, 100,319 tons ($409,970); cordage, $205,110; machinery and hardware, $1,572,076; provisions, $2,840,480, which included 15,279,152 pounds of lard; lumber, timber, and furniture, $2,907,331; and paper and stationery, $223,814.

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DAKOTA. Territorial Government.—The Territorial officers during the year were: Governor, N. G. Ordway; Secretary, George H. Hand, succeeded by J. H. Teller; Treasurer, William H. McVay; Auditor, L. M. Purdy, succeeded by George L. Ordway; Superintendent of Public Instruction, William H. H. Beadle; Attorney-General, Alexander Hughes.

Legislative Session.—The Legislature, containing 31 Republicans and 5 Democrats in both Houses, convened on the 9th of January, and adjourned on the 9th of March. The following are extracts from the Governor's message:

During the two years that have elapsed since the meeting of the last Legislature, our population has increased from 150,000 to nearly 300,000; our taxable property has increased from $20,000,000 to $50,000,000; and the agricultural and mechanical developments have fully kept pace with this remarkable increase of property and population.

The Territorial finances are in a most satisfactory condition.

It is asserted that mines producing a revenue sufficient to pay large dividends upon $15,000,000 or $20,000,000 of stock or shares, are escaping their equal share of taxation by the payment of taxes upon less than one fifth of the actual value of the property. It is also asserted that patents have been declined upon lands granted by Congress to certain railroads running through the Territory, although the lands have passed into other hands under contracts and are thus kept out of the assessors' lists.

As a member of the Board of Equalization and Assessment, it has come under my observation that gross inequality exists in assessing the land and personal property in the various counties. I am, therefore, constrained to believe that a large amount of property in the Territory wholly escapes assessment.

The present laws give county commissioners almost unlimited power to mismanage the finances and wreck a county. As a board of equalization, they sometimes assume the authority, under the pretense of revising the assessors' lists, to cut down the assessments in certain cases nearly one half, without attempting to find any property which has escaped assessment, or that has been assessed too low, to make up the deficiency—thus largely increasing the rate upon the property which remains unchanged. Under the operation of this unequal system the Territorial Board of Equalization and Assessment are compelled to adopt a higher average rate than would be necessary if a better system was provided.

There is now outstanding against various counties in the Territory nearly $100,000 of Territorial taxes, heretofore assessed upon delinquent counties, yet the present laws provide no adequate means for the collection of this large sum.

The failure of the officers of Yankton county to meet the requirements of $200,000 of bonds issued to aid in the construction of a railroad, has caused severe criticism and unfavorable comment during the discussion of the bills for the admission and division of the Territory. Certain enactments passed by the last Legislative Assembly, although general in their provisions, intended to prevent the assessment of taxes, have been widely and unfavorably commented upon in the public press. The people of Yankton county, previous to the last election, inaugurated a movement to refund or liquidate these outstanding bonds, bearing a high rate of interest, by the issuance, under congressional authority, of a well-guarded low rate of interest bond which the revenues of the county could meet as the interest and principal should fall due.

There are now pending in both Houses of Congress bills providing a comprehensive enabling act for dividing the Territory by the admission of the southern half as a State; also a bill for dividing the Territory substantially upon the same line. It is not denied that the southern portion of the Territory has the required number of inhabitants, who, if living in a State, would be entitled to a member of the House of Representatives. It is not denied that the amount of taxable property in the southern portion is fully equal to that in any Territory that has been admitted as a State.

After giving an official history of the floods of 1881, the Governor recommends that provision be made to send assistance in any similar emergency. He strongly urges the establishment of an immigration, mining, and agricultural board of three members, one for each department, who shall collect statistics and give information about the Territorial resources. He calls attention to the probable opening of the Big Sioux Reservation, and that such legislation be taken as may be necessary.

The total number of bills sent to the Governor was 335. In the Council about 250 bills were introduced, and nearly 300 in the House. Of these 280 became laws, either by signature or limitation. Among the most important bills which became laws are the bill for capital removal; for creating a tax commission to inquire what property escapes taxation, and to suggest remedies and look after delinquent taxes, of which there are large amounts outstanding. The bill creating the office of attorney-general is another important measure. The educational bill is, perhaps, the most important measure of the session. This law adopts the civil township system and is a much-needed measure. A bill of great consequence to North Dakota is the one providing a board of grain-inspectors to look after the weighing and grading of grain.

The institutions for which provision was made, either for building or running expenses, or both, were the following: Penitentiaries at Sioux Falls and Bismarck; Hospitals for the Insane at Yankton and Jamestown; universities at Vermilion and Grand Forks; and normal schools at Spear Fish and Madison; Agricultural College at Brookings; School for the Deaf and Dumb at Sioux Falls. The Agricultural College was located at Fargo and the Reform School at Plankinton, but no appropriations were made.

The capital-removal bill, as passed, provides for the appointment of a commission of nine to determine upon a suitable location for a permanent capital. The commissioners are put under $40,000 bonds to perform their duties faithfully, and are to receive $6 a day for their services, but the total amount of expense may not exceed $10,000. On or before

July 1st, a place is to be selected, and the town or town site chosen is to give the Territory 160 acres of land and $100,000 in cash for public buildings. A bill reorganizing the legislative districts passed. Each district is entitled to one councilman and two representatives.

Finances.—The statement of receipts and disbursements for the fiscal years 1881 and 1882 is as follows:

RECEIPTS.

Balance in Treasury, Dec. 1, 1880	$1,905 73
From counties, 1881	55,918 86
From counties, 1882	102,005 93
From railroads, 1881, for 1880 tax	22,583 89
From railroads, 1882, for 1881 tax	35,614 39
From telegraph companies, 1882	518 55
From sale of Insane Hospital bonds, 1881	41,540 00
From sale of Penitentiary bonds	51,522 50
From insurance companies for loss on Insane Hospital	3,000 00
From sale of codes, 1881	70 50
From sale of codes, 1882	65 00
From sundries, 1881	135 65
Total	$314,878 00

DISBURSEMENTS.

For Auditor's warrants, 1881	$77,484 57
For Auditor's warrants, 1882	151,116 82
For interest on warrants, 1881	1,693 57
For interest on warrants, 1882	693 00
For interest on Insane Hospital bonds, 1882	2,400 00
For interest on Penitentiary bonds, 1882	1,900 20
For counties, proportion railroad-tax, 1881	13,690 00
For counties, proportion railroad-tax, 1882	22,594 66
For exchange and express charges, 1881	25 05
For exchange and express charges, 1882	148 65
Balance in Treasury, Nov. 30, 1882	43,463 90
Total	$314,878 00

LIABILITIES OF THE TERRITORY, NOV. 30, 1880.

Five-twenty 6 per cent. Insane Hospital bonds, dated May 4, 1881	$40,000 00
Five-twenty 6 per cent. Penitentiary bonds, dated May 1, 1881	50,000 00
Total	$90,000 00

ASSETS OF THE TERRITORY, NOV. 30, 1882.

Balance in general fund	$41,149 29
Balance in Insane Hospital construction fund	68
Balance in Penitentiary construction fund	2,313 93
Total	$43,463 90

The assessed value of property in 1882 was nearly $48,000,000.

Bonds to the following amounts were authorized by the last session of the Legislature:

For permanent improvement Sioux Falls Penitentiary	$30,000
Construction of Bismarck Penitentiary	50,000
Deaf-Mute School at Sioux Falls	12,000
Dakota University at Vermilion	30,000
North Dakota University at Grand Forks	30,000
Agricultural College at Brookings	25,000
Hospital for the Insane, Yankton, permanent improvements	77,500
Building the Hospital for the Insane at Jamestown	50,000
Total	$304,500

Gov. Ordway, in his report for 1883, says:

Four years ago the Territory owed some $20,000 in warrants, which securities, bearing 10 per cent. interest, for want of funds, were selling at a large discount. These warrants have all been paid off from current revenues, leaving a handsome surplus in the Treasury, and the Territory will have an outstanding indebtedness, when all the bonds provided for by the last two legislatures are issued, of $394,500, bearing but 5 and 6 per cent. annual interest; substantially the same amount outstanding against Yankton county, but not as large an amount of indebtedness by one third as Lawrence county owes. These two counties have assets to show for their large indebtedness, ordinary court-houses and jails, valued perhaps at $15,000 each. The Territory, on the contrary, will have two penitentiaries, two hospitals for the insane, two universities, two normal schools, one school for deaf-mutes, and one and perhaps two agricultural colleges, all costing in round numbers $400,000, yet worth to the people double that sum, and so located in the east, west, north, and south that one great State or two smaller ones can securely and safely be placed upon these essential foundations. This total indebtedness of the Territory could easily be paid and every Territorial bond retired next year by the assessment of a five-mill tax upon the assessable property in the Territory, without the slightest shock to business enterprise. It has been thought, however, more just to defer the payments for the erection of these institutions until the public lands to be given to the State under the "Burrows enabling act" shall become available.

Education.—The total school revenue of 34 counties, for the year ending March 31, 1882, was $343,719, which the superintendent is satisfied a full report would have increased to $500,000. This sum is raised almost wholly by direct taxation, since it does not seem from the reports that the proceeds of bonds issued to enable districts to erect and furnish school-houses were included in receipts to any considerable extent. Reports from 33 counties show the following statistics:

Total school districts organized	1,225
Total graded schools	40
Total ungraded schools	965
Number of school-houses	799
Value of same	$525,877
Amount paid county superintendents	33,616
Average wages paid teachers, male	33
Average wages paid teachers, female	26
Total expenses of the office of Superintendent of Public Instruction for salary, mileage, office, printing, books, stationery, and postage	950

An agricultural college at Brookings, one or two normal schools, Dakota University at Vermilion, and Yankton College at Yankton, have been established.

Capital Removal.—On the 2d of June the commission for choosing a site for the Territorial capital selected Bismarck, and on the 25th of August work was begun for the erection of the Capitol. On the 11th of September Gov. Ordway ordered the Territorial Auditor, Secretary, and Treasurer to remove their offices from Yankton to Bismarck. The Auditor complied, but the Secretary and Treasurer refused to remove. On the 15th of September the decision of Judge Edgarton of the Supreme Court declaring the appointment of the commissioners illegal, was made public. An appeal was taken to the full bench, but it had not been argued at the close of the year.

State Constitution.—On the 19th of June a convention, comprising more than 400 delegates from the southern portion of the Territory, belonging to both political parties, assembled at Huron to consider the question of calling a constitutional convention. This body adopted a preamble and resolutions, from which the following extracts are taken:

Whereas, The Territory of Dakota, lying south of

the forty-sixth parallel of latitude, has at present a population of more than 250,000 people, which, at its present rate of increase, will in another twelve months number over 300,000 people, which is more than double the population of any State heretofore admitted into the Union out of the Territories, and more than that of seven of the original States at the time of their admission; and

Whereas, The said part of the said Territory covers an area of 80,000 square miles, which is larger than that contained in any State in the Union except seven; and

Whereas, The last Legislature of this Territory, wisely acceding to and representing the general and earnest wish of the people thereof, did enact a law convening a constitutional convention at the Capitol of the Territory in October next, for the purpose of framing a Constitution and State government for that part of Dakota south of the forty-sixth parallel, and for forming all other things essential to the admission of such part of Dakota into the Union of States; and

Whereas, The said act of the Legislature was prevented from becoming a law by the Territorial Executive declining to approve the same or return it to the Legislature with his objections, thus depriving that body from taking further action relating thereto; therefore be it

Resolved and ordained by the people of Dakota, through their delegates in convention assembled:

SECTION 1. That for the purpose of enabling the people of that part of Dakota south of the forty-sixth parallel to organize and form a State government, and make application for admission into the Union of the States, a delegate convention is hereby called to meet on Tuesday, Sept. 4, A. D. 1883, at 12 o'clock meridian, for the purpose of framing a State Constitution, republican in form, and doing and performing all other things essential to the preparation of the Territory for making application to the General Government for the admission of such part of Dakota into the Union of the States.

An address to the people in favor of the convention was issued, and Sioux Falls was fixed upon for the place of meeting. The delegates were duly elected, and the convention met on the 4th of September, and finished its labors on the 19th. Important features of the Constitution framed by it are the following:

The name shall be the State of Dakota; the boundaries begin where the forty-sixth degree of north latitude intersects the western boundary-line of the State of Minnesota, thence south to Nebraska, thence west along the northern boundary of that State and to the twenty-seventh degree of west longitude, thence north to the forty-sixth parallel, and east to the place of beginning; the seat of government shall be and remain at Yankton until removed by law.

The right of trial by jury shall remain inviolate, and extend to all cases at law without regard to the amount in controversy; but a jury trial may be waived by parties in all civil cases, and in all criminal cases less than felony. No religious tests or amount of property shall ever be required as a qualification for any office of trust under the State, and no person shall be rendered incompetent to give evidence in any court of law or equity in consequence of his opinions on the subject of religion, nor shall any money be drawn from the Treasury for the benefit of religious societies or theological seminaries; no *ex post facto* law, nor law impairing the obligation of contracts, or retrospective in its operations, or making any irrevocable grant of special privileges, franchises, or immunities shall ever be passed by the Legislature; no law or duty shall be imposed without the consent of the people or their representatives in the Legislature, and all taxation shall be equal and uniform; no law shall be passed granting to any citizen or class of citizens privileges or immunities which, upon the same terms, shall not equally belong to all citizens.

The number of members of the House of Representatives shall never be less than fifty-five nor more than eighty, and the number of Senators less than twenty-five nor more than thirty-two. The sessions of the Legislature shall be biennial. The terms of members of the Legislature shall be two years, and their salary three dollars a day, and ten cents mileage each way; they shall receive pay for no more than forty days at one session, except in proceedings for impeachment, and they shall receive no other perquisites. The Legislature shall meet at the seat of government on the first Tuesday after the first Monday of January. No bill except appropriation bills shall be passed containing more than one subject. The Legislature shall not authorize any games of chance, lottery, or of gift enterprise under any pretense, or for any purpose whatever. The Legislature shall never grant any extra compensation to any public officer, agent, servant, or contractor after the services shall have been rendered or the contract entered into; nor shall the compensation of any public officer be increased or diminished during his term of office. The Legislature shall not pass any local or special law authorizing the creation, repairing, or extension of liens, granting divorces, changing names of persons or places, laying out or opening highways, vacating grounds, providing for the election of municipal officers, exempting property from taxation, granting to any private corporation, association, or individual any special or exclusive privileges, immunities, or franchises whatever. No act shall take effect until ninety days after the adjournment of the session at which it passed, unless in case of emergency.

The Supreme Court shall consist of three judges, to be chosen from districts by qualified electors at large. After five years the number of supreme judges may be increased to five, and their terms shall be four years. In case of re-election, it shall be eight years, and the third successor's term shall be twelve years.

The right to divert and appropriate the unappropriated waters of any natural stream in the State to beneficial uses shall never be denied. Priority of appropriation shall give the better right to the extent to which such waters shall be used, or intended in good faith to be used, for such beneficial purposes. Vested and accrued water rights shall be recognized and protected; provided that nothing in this article contained shall change the rule of riparian ownership in that portion of the State east of the Missouri river. All persons and corporations shall have the exclusive right of way across public and private corporate lands, for the construction of ditches, canals, and flumes for the purpose of conveying water for domestic purposes, for the irrigation of agricultural lands, and for mining, milling, and manufacturing purposes, and for drainage, upon payment of just compensation.

All railroads, canals, and other transportation companies, are declared to be common carriers, and subject to legislative control. Every stockholder shall have the right to vote in person or by proxy the number of shares of stock owned by him for as many persons as there are directors or managers to be elected, or to cumulate said shares and give one candidate as many votes as the number of directors multiplied by the number of his shares of stock shall equal, or to distribute them on the same principle among the many candidates as he shall see fit. This Constitution shall be submitted, at the election to be held on the Tuesday next after the first Monday in November, A. D. 1883, to the electors qualified by this Constitution to vote at all elections.

On the 12th of September a convention of delegates from the northern portion of the Territory assembled at Fargo and passed resolutions protesting against the action of the convention held at Sioux Falls.

At the election in November the Constitution was ratified by a majority of 5,552.

Progress during the Year.—Relative to the condition and recent progress of the Territory, Gov. Ordway, in his report for 1883, says:

The tide of immigration which set in strongly in 1880 has been constantly increasing, until during the past year, I think, a fair estimate of the increase in population would reach 100,000, while the increase of assessable property has even been more marked than the increase in the number of inhabitants.

The section properly denominated the "Corn Belt," running as far north as the 44th degree of north latitude, and west to the 24th degree of longitude west from Washington, has been unusually prosperous during the past year. Flax and even wheat, which sometimes blights during the extreme heated term, have yielded handsomely. Sheep-husbandry and stock-raising have both received a marked impetus in what is known as Southern Dakota, and general farming is fast becoming the rule in that section.

The Black Hills mining region and the Great Sioux Reservation, embracing the section of country lying west of the 24th degree of longitude west from Washington, still remain somewhat isolated. The agricultural developments, however, in the counties of Pennington, Fall River, Custer, Lawrence, and Butte, have increased wonderfully. Flour, vegetables, and other agricultural products, formerly transported into the Black Hills at heavy expense, have, during the past year, been exported overland to Pierre and other points on the Missouri river, and sold at remunerative prices. The increase in stock and sheep husbandry in this section during the past year has been marvelous. The cattle-trade alone, west of the Missouri river, absorbs many millions of dollars every year.

The wheat belt, commencing at the 44th parallel of north latitude and extending to the extreme northern portion of the Territory, has maintained its well-earned fame for producing the largest number of bushels per acre of the best wheat grown on this continent. The continued large returns to investors in wheat-lands have largely increased the improved acreage and carried up the price from $5 to $25 per acre on the Northern Pacific Railway and in the Red River valley. Even in the center of the Bad Lands, on the Little Missouri river, a large amount of capital has recently been invested in cattle and sheep, which are said to find excellent feed and shelter in that romantic and weird region.

The annual production of gold and silver in the Black Hills region still continues, although, owing to the scarcity of water and the necessity for having expensive mining machinery, the increase has not been large during the past year.

Miscellaneous.—The yield of wheat in 1883 has been stated at 16,128,000 bushels, being an average of 16 bushels an acre. In November, 1882, John B. Raymond, Republican, was elected delegate to Congress by a vote of 38,151 against 9,034 for his Democratic opponent. The following Territorial institutions have been established: Hospital for the Insane, at Yankton; Penitentiary and School for Deaf-Mutes, at Sioux Falls.

DANUBE, EUROPEAN COMMISSION OF THE, an international corporate institution, exercising certain sovereign powers, independent of the Roumanian Government, over the Danube below Galatz. It was originally created by the Treaty of Paris, signed March 30, 1856, was confirmed and endowed with larger powers by the Treaty of Berlin, signed July 13, 1878, and at the expiration of its term of full powers on March 13, 1883, was reconstituted and extended for twenty-one years, with power of perpetual renewal. The jurisdiction of the commission was extended over the middle Danube as far as Braila. Its sovereign rights are derived from the delegated authority of the seven contracting powers and of Roumania. They consist in the exercise of police control over the river, the right to enact and issue regulations which have the force of law, and powers to levy imposts and to contract loans, and to employ its resources in public works for the improvement and conservation of navigation. The seat of the commission is at Galatz. The first regular meeting of the new Commission was held on Nov. 3, 1883.

Finances.—The financial report of the Danubian Commission for 1881 shows an excess of receipts amounting to 842,095 francs. The total receipts amounted to 3,448,190 francs, of which 1,985,052 francs were derived from taxes, including 147,328 francs from pilotage and light-house dues, and 1,463,138 francs from other sources. The total expenditure was 2,606,095 francs, under the following main heads:

	Francs.
Administration	289,458
Technical service	711,098
Service of the debt	1,111,685
Various charges	493,854
Total	2,606,095

The debts of the commission amounted, on Jan. 1, 1882, to 2,781,911 francs, and consisted of an advance made by the Sublime Porte, which ceded the claim to Erlanger & Co., amounting to 2,469,371 francs, paying 4 per cent., which was paid off at the end of 1883, and a loan of 312,540 francs, extinguished in 1882. Besides a reserve fund of 1,000,000 francs and the surplus, in 1881, of 826,095 francs, the commission had a sinking fund of 264,856 francs, and a pilotage fund amounting to 44,565 francs.

Trade and Navigation.—The shipments of grain, which is the principal article of export, from all the ports of the lower Danube, in 1882, aggregated 6,629,843 quarters, against 5,401,441 quarters in 1881.

The total number of steam-vessels cleared at Sulina in 1882 was 760, of 741,066 tons, against 770 of an aggregate tonnage of 653,016, in 1881; the total number of sailing-vessels in 1882 was 784, tonnage 110,179, against 941 of 140,438 tons in 1881. The tonnage of 1882 was divided in respect to nationality as follows:

FLAG.	Steam-tonnage.	Sail-tonnage.
English	607,219	1,224
Greek	41,856	64,787
Austrian	.....	.....
French	58,784	.....
Russian	4,889	3,578
Turkish	.....	32,071
Italian	2,060	7,241
Roumanian	.....	1,458
German	9,724	.....
Danish	7,728	.....
All others	8,896	.....
Total	741,066	110,179

The points where sea-going vessels can load with grain from the lower valley of the Danube, are the river-ports of Galatz and Braila, and the adjacent ports of Kustendje and Varna on the Black sea. All the grain which finds an outlet by the mouth of the Danube is grown in Roumania and Bulgaria. The wheat of Hungary and the whole upper valley of the river is exported by other channels of commerce. In times of scarcity in Hungary, there is a small movement of grain up-stream beyond the Iron Gate, which rarely exceeds 350,000 tons per annum, but which may be augmented by the improvement of the channel in the difficult stretch where it passes through the Carpathians. There is a limited traffic in manufactured goods from Germany, Austria, and Hungary, which are shipped down the river in the vessels of the Austrian Danube Steam Navigation Company, a privileged corporation which monopolizes all the through traffic between Vienna and Galatz, and much of the local traffic on the upper course of the river. The freight-charges by this route are, however, so high that the construction of Roumanian railroads has taken away a great part of the traffic with the left bank, and the introduction of English and Swiss manufactures by the Sulina mouth has diminished the portion which went to Bulgaria.

The whole tendency of modern progress is to diminish the importance of the Danube as a commercial highway. It is not used as an outlet for Central-European commerce, which finds its way by rail to the German ports on the Baltic and the North seas, or to the Austro-Hungarian ports of Fiume and Trieste on the Adriatic. Even to the countries traversed by its lower and middle course it is only an alternative route, which is losing importance as railroads are extended. The Roumanian Government recently acquired the Kustendje-Tchernevoda railroad, and intends to develop Kustendje into its principal seaport. Grain can be shipped across to and loaded in vessels at Kustendje with great saving of time. A bridge over the Danube at Tchernevoda will connect this line with railways coming from the north and west which are being constructed. The completion of the Turkish, Servian, and Bulgarian net-work connecting with the Austro-Hungarian, for which Austria finally succeeded in 1883 in getting a project adopted (see AUSTRIA-HUNGARY), will alter the commercial conditions of all Southeastern Europe, and deflect a large part of the Danubian trade.

Projected Improvements of Navigation.—The entrance of the Danube was rendered passable to ocean-going vessels by the European Commission on the plans of Sir Charles Hartley. The Sulina branch was deepened and rectified, and a large volume of water which formerly found an outlet by the St. George's mouth was deflected into this channel. The flow of water at the upper bifurcation, at Ismail Chatal, was also regulated, and a portion of the waters of the Kilia branch drawn into the navigable channel. At the London Conference of 1883 a second commission was created, which was charged with the task of improving the navigation of the Danube from Braila, or Ibraila, up to the Iron Gate. This long middle course of the Danube differs very much from the tranquil stream that traverses the plain below Galatz and issues through the three branches of the delta. It comprises over 450 miles of shifting river-bed, about 300,000 acres in extent. The river is a rapid and turbulent stream, which forms shoals and islands in a few days or hours and constantly changes its channel. It sweeps down immense quantities of ice, moving it with sufficient force to crush the sides of a ship. It is impassable for a large part of the year on this account, and navigation is sometimes dangerous for nine months out of the twelve. It therefore lies beyond the power of engineering skill to render the navigation of the middle Danube passable to the class of vessels which ply up to the river-ports below, or safe for any craft.

Above the Iron Gate, within the Austro-Hungarian dominions, the Danube is the same rapid and ice-swept stream, though less unstable in its channel than below. The two parts of the river are separated by the difficult and dangerous rapids of the Iron Gate. The removal of the rocky obstructions at that point is a formidable task, but the improvement in the facilities of the river-traffic will repay the outlay. This work has been undertaken by the Hungarian Government.

Danubian Questions.—The Treaty of Paris, concluded in 1856, constituted two commissions—the European Commission and the Riverain Commission. To the European Commission the control of the river was confided temporarily, and its powers were intended to last but two years. The Riverain Commission was created as a permanent institution, and was expected to take over the functions of the European Commission and to conduct the operations for the improvement of the river and regulate the navigation throughout its entire course. As a matter of fact, the Riverain Commission never exercised its powers, while the European Commission was continued provisionally, and after carrying out the improvements at the Sulina mouth, and deepening that channel to admit sea-going vessels, retained jurisdiction over the navigation of the lower reaches of the river below Galatz until it was formally recognized in the Treaty of Berlin, and its functions maintained and prolonged. That treaty provided that Roumania should be represented on the commission, and that the powers of the commission should be exercised as far as Galatz, in complete independence of the territorial authorities. The same instrument enacted that regulations in respect to navigation, river police, and supervision above Galatz as far as the Iron Gate should be framed by the European Commission, with the assist-

ance of delegates from the riverain states, in harmony with those issued or to be issued for the portion of the river below Galatz. The treaty contained an article providing that one year before the expiration of the term fixed for the duration of the powers of the commission, the powers should come to an understanding in respect to the prolongation of its authority or the modification of its constitution.

The prolongation of the European Commission and its retention of the powers which were intended for the Riverain Commission were mainly owing to the attitude of Roumania. That state was naturally jealous of the anomalous assumption of rights superseding its sovereignty over a river flowing through its territory. It was particularly suspicious of Austria, and strove to exclude its powerful neighbor as far as possible from participation in the proposed Riverain Commission, and to deny her a share in the navigable portion of the water-way, on the ground that within Austrian territory the Danube is not navigable. In point of fact, Austria has no important commercial interests and but slight military interest in the waters of the lower Danube. On the middle Danube, however, she can claim a preponderant interest through the privileged and formerly subsidized Austrian Danubian Steam Navigation Company, which monopolizes the steam-traffic on that portion of the river. She was actuated by her general Oriental interests and by her moral position in respect to her one great river, as much as by her material interests in it, to assert the full strength of her position. As Roumania refused to accord her a commensurate share of influence as a riverain power, she used her voice as a great power to perpetuate the European control, sacrificing her exclusive riverain rights rather than yield them up to the control of a distrustful and possibly unfriendly combination of riparian states. The maritime powers of Western Europe, who were the real beneficiaries of the improvements made by the European Commission, were naturally inclined to assert and extend the principle of international control and perpetuate the institution which gave complete security to freedom of navigation and the facilities of commerce.

In 1882, when the time for a new settlement of Danubian affairs was at hand, a serious attempt was made to construct a mixed Riverain Commission, composed of delegates from Austria-Hungary, Roumania, Servia, and Bulgaria, to which should be committed the administrative management of the navigation above Galatz, in harmony with the regulations of the European Commission for the lower reaches. At that time Austrian and Russian antagonism was more salient than later. The Servian Government was supposed to be subservient to the wishes of Austria, while Bulgaria was under Russian control, and Roumania was regarded as susceptible to Russian influence through her dread of Austrian domination. Austria laid claim to the permanent presidency and casting vote in the proposed Mixed Commission. Roumania strenuously opposed this proposition. The Roumanian Prime Minister was even betrayed into the official expression of a hostile menace against the Hapsburg monarchy. Great Britain objected to the Riverain Commission, unless a general right of appeal from its decisions to the European Commission was accorded. Barrère, the French delegate on the commission, proposed a compromise which was intended to obviate the English objection to confiding the management of the navigation of the middle reaches, declared free up to the Iron Gate by the Treaty of Berlin, to the exclusive administrative direction of the riverain states, and also the Roumanian objection of giving Austria the deciding voice. The Barrère *avant-projet* was to create a fifth member in the Mixed Commision, who should represent the European Commission. The delegates of the signatory powers in the European Commission were to succeed one another from year to year in the alphabetical order of the names of the countries. Roumania raised an objection to this proposal, viz., that Germany (Allemagne) and Austria-Hungary (Autriche-Hongrie) would by this arrangement control the decisions of the new commission for the first two years, thus enabling Austria's wishes to prevail in drawing up the administrative regulations.

While Roumania on her part was seeking to shape the course of the diplomatic deliberations so as to restrict as far as possible the international control over her territorial waters and prevent Austria from acquiring a directing influence in the management of the portion yet to be improved and made free to all nations, while the maritime powers were interested in extending the sphere of international supervision and control, and while Austria exerted herself to curb Roumanian pretensions and secure a preponderant riverain position, Russia embraced the opportunity to bring forward a claim which would perhaps not otherwise have been entertained. This was to withdraw the Oczakov mouth of the Kilia branch from the jurisdiction of the European Commission. When Bessarabia was receded to Russia, her territorial rights were defined as extending to the Thalweg of the Kilia branch. This has been decided to lie along the Kilia, or southern arm of the Kilia branch. Both banks of the Oczakov arm therefore belong to Russia, while the southern arm forms the boundary-line between Russia and Roumania. The objections to abandoning the European control of this outlet to Russia were twofold: One was, that Russia, by establishing a fortified naval harbor there, could menace the navigable outlet of the Danube; the other depended on a technical question in engineering. This was whether, if, as Russia purposed doing, the Oczakov channel were deepened

and rendered navigable, it might not be possible to deflect the waters of the Danube into this channel and diminish the outflow of the Sulina mouth, so as to destroy the works of the Danubian Commission and give Russia entire control of the navigation of the Danube. If, on the other hand, the flow of the water is determined by the conformation of the beds at Ismail Chatal, where the river bifurcates, and can be regulated only there, then the opening of a second navigable outlet would be an advantage to international commerce. When M. Giers visited Vienna he secured the acquiescence of Austria in this demand, and accepted the views of the latter in regard to the claims of Roumania.

London Conference.—It was necessary that the divergent views of the powers should be harmonized in some fashion before March, 1888, in which month the mandate of the European Commission would lapse by expiration of its term. For the settlement of the terms of the new treaty, Great Britain invited the signatory powers to a conference at London, to begin February 5th. The diplomatic representatives of the powers at the court of St. James represented them in the conference. As the cabinets had not yet come to an agreement as to the basis on which some of the matters in controversy were to be arranged, the conference did not meet until three days after the date set, and did not close until March 10th, three days before the duration of the European Commission ended. Count Karolyi represented Austria; Count von Münster, Germany; M. Tissot and M. Barrère, of the European Commission, France; Earl Granville and Lord Edmund Fitzmaurice, Great Britain; Count Nigra, Italy; Baron Mohrenheim, Russia; and Musurus Pasha, Turkey. M. Ghika was present to claim a seat as the representative of Roumania. A seat on the European Commission was accorded to Roumania by the Berlin Treaty, because Galatz was by the treaty included in Roumanian territory, and the interests of that state in the navigation were largely increased. Great Britain was willing to accord Roumania an equal voice in the conference, but the motion was negatived, on the ground that the Berlin Treaty stipulated that the signatory powers were to decide as to the prolongation of the commission and the other questions which came before the conference. It was voted that Roumania and Servia should have a seat and a consultative voice, but no vote, in the deliberations. The Servian representative availed himself of this permission, but the Roumanian delegate declined to take part in the conference on those terms. Bulgaria, under the Treaty of Berlin, was to be represented by the Turkish plenipotentiary. The Bulgarian representatives who were present were allowed to listen to the proceedings, and a stipulation was made that the Turkish embassador should lay before the conference any communication they might wish to convey.

London Convention.—The new Danubian Convention, which was signed at London, March 10, 1883, by the plenipotentiaries of the powers, embraced the following provisions:

I. The jurisdiction of the European Commission is extended from Galatz to Braila.

II. The powers of the European Commission are prolonged for a period of twenty-one years, dating from April 24, 1883.

At the expiration of this period the powers of the said commission will be renewed by tacit reinvestment every three years, except in the case when one of the high contracting parties gives notice, one year prior to the expiration of one of these triennial periods, of the intention of proposing modifications in its constitution or in its powers.

III. The European Commission shall exercise no effective control over those parts of the Kilia branch of which both banks belong to one of the riparian states on that branch.

IV. As to the portion of the Kilia branch which flows between Russian and Roumanian territory, and for the purpose of insuring uniformity of authority in the lower Danube, the regulations in force in the Sulina branch shall apply, under the supervision of the delegates of Russia and Roumania, to the European Commission.

V. In case Russia or Roumania undertake works, whether in the mixed arm, or between the two banks which belong to them respectively, the competent authority shall give information to the European Commission of the plans of these works, for the sole purpose of determining that they will have no effect on the condition of navigability of the other arms.

The works which have already been executed at the Chatal of Ismail will remain in the charge and under the control of the European Commission of the Danube.

In case of divergence of opinion between Russia or Roumania and the European Commission with regard to the plans of works to be undertaken in the Kilia branch, or of divergence of opinion among the members of the commission with regard to the proper limits of the extension of the works at the Chatal of Ismail, the matter will be submitted directly to the powers.

VI. It is understood that no restriction shall be made which will deprive Russia of the right to levy tolls destined to cover the expenses of works undertaken by her.

At the same time, with the view of safeguarding the reciprocal interests of navigation in the Sulina branch and the Kilia branch, the Russian Government, for the purpose of insuring an understanding on this subject, is to acquaint the governments represented in the European Commission of the toll regulations it judges proper to introduce.

VII. The regulations for navigation, river police, and supervision, elaborated June 2, 1882, by the European Commission of the Danube, with the assistance of delegates of Servia and Bulgaria, are adopted and incorporated in the present treaty and declared applicable to the part of the Danube between the Iron Gate and Braila.

VIII. All treaties, conventions, acts, and arrangements relative to the Danube and its mouths are maintained in all of their provisions which are not abrogated or modified in the foregoing stipulations.

IX. The present treaty will be ratified and the ratifications will be exchanged at London, within the space of six months, or sooner, if practicable.

The following explanatory resolutions were embodied in a protocol at the final sitting, with the understanding that they have equal effect with the provisions of the treaty:

1. It is agreed that the agents of the European Commission can, for purposes of information, circulate in the Kilia branch and its mouths.

2. It is unanimously agreed that the nomination of a Bulgarian delegate to the Mixed Commission will be submitted to the approval of the Sublime Porte, and that the consigning of this right in the protocol has the same efficacy as if it formed part of the treaty.

3. The dispositions of the regulations in their application to the portion of the river between the Iron Gate and Braila can not be interpreted as restricting the rights of jurisdiction possessed by consuls over the vessels of their countries resulting from treaties between the riverain states and the powers as against the local authorities.

The plenipotentiaries also unanimously agreed that they accepted the fifth article of the treaty as meaning that the tolls should not go into operation until they were approved by the powers.

The Mixed Commission.—The Barrère *avant-projet* was the basis of negotiations concerning the constitution of the Mixed Commission. In the final action of the conference important modifications in the scheme were made, to conciliate the riverain states which objected to the proposal. The order of rotation in which the European representative is to be sent by the European Commission to sit on the Mixed Commission was changed; and Austria, being permanently represented on the latter, renounced her claim to be represented in her turn as a signatory power. Roumania likewise was excluded from double representation. Alterations were made also in the regulations in their application to the middle course, to meet objections raised by Roumania and Bulgaria, viz., the method of nominating sub-inspectors of the river was changed, and also the manner in which the river was to be divided for purposes of management.

Roumanian Demands.—Roumania was far from satisfied with the result of the London negotiations. The presence within her territory of foreign executive officers administering powers superseding the authority of the national Government, was a source of ceaseless dissatisfaction, particularly so because the arrangements were entirely anomalous, as all regulations established for other international and neutralized rivers are administered by the territorial authorities. She, moreover, persisted in her objections to the fictitious position of Austria in the Riverain Commission, and renewed her claim to representation in a conference to decide these special questions. Representations were made to the cabinets, in which the following demands were formulated:

1. The riverain states shall, in addition to the rights in the channel of the river conceded to them in the London resolutions and their right to nominate river and harbor inspectors, also retain the executive administration of the police and navigation regulations; yet, in order to obviate every irregularity, the International Commission shall exercise supervision over the enforcement of the regulations and the appellate and supreme legal jurisdiction over the river.

2. Since the commission is not composed simply of representatives of the riverain states, the qualifications which entitle the participants to representation shall be defined, to wit, Bulgaria, Roumania, and Servia as riverain states, Europe through a delegate of the Danube Commission, Austria and Roumania being debarred, and Austria individually and on the ground of her preponderant share in the commerce of the middle course of the Danube; the expenses of the commission to be at the charge of the riverain states alone.

3. Full participation of Roumania in the deliberations and decisions of the conference to discuss these special questions.

The Roumanian opposition to the London Treaty abated when it was found to be useless. By the time the treaty was ratified, in August, anti-Austrian sentiments were less potent in Roumanian politics, and the jealousy of the Roumanians was turned rather toward Russia; the Roumanian King visited Vienna, and overtures toward joining the triple alliance were in progress.

DELAWARE. State Government.—The following were the State officers during the year: Governor, Charles C. Stockley, Democrat; Secretary of State, William F. Causey; Treasurer, John M. Houston; Auditor, Jesse L. Long; Attorney-General, George Gray; Superintendent of Public-Schools, Thomas N. Williams. Judiciary, Supreme Court: Chief-Justice, Joseph P. Comegys; Associate Justices, L. E. Wales, John W. Houston, and Edward Wootton. Chancellor, Willard Saulsbury.

Legislative Session.—The Legislature convened on the 2d of January, and adjourned on the 20th of April. On the 16th of January Governor Stockley was inaugurated. Eli Saulsbury, Democrat, was re-elected United States Senator. On the 23d the Legislature submitted to the Chancellor and judges the following questions:

1. Is it within the constitutional power of the General Assembly, by a concurrent vote of two thirds of the members of each branch thereof, to provide for the increase of the members of the Senate and House of Representatives in the General Assembly, and to apportion the members thereof unequally among the several counties of the State?

2. Is it competent for the General Assembly to provide by law for the election of members of either branch or both branches of the General Assembly from any or every county, from districts created by law within such county, in lieu of the election thereof upon general ticket throughout the county?

The Chancellor was of the opinion that while the Legislature could by a two-third vote increase the number of Senators and Representatives, the counties must be equally represented. If it was desired to give one a greater number than the others, a constitutional amendment would be necessary. The Chief-Justice decided the first question in the affirmative, and the second in the negative. Judge Houston agreed with the Chancellor, while Judges Wales and Wootton concurred in the main with the Chief-Justice. The subject was disposed of by the passage of an act proposing amendments to the Constitution for the purpose of increasing the number of Senators and Representatives in the General Assembly. It proposes that "the House of Representatives shall consist of 25 members, 11 of whom shall be chosen from New Castle county, 7 from Kent county, and 7 from Sussex county; provided, that of

the 11 Representatives from New Castle county, 4 shall be chosen by the citizens residing in the city of Wilmington and 7 by the citizens residing in the residue of said county"; and that "there shall be 4 Senators chosen from each county, provided that of the 4 Senators chosen from New Castle county, 2 shall be chosen by the citizens residing in the city of Wilmington and 2 by the citizens residing in the residue of said county."

The first election for representatives under the amended Constitution is to be held in November, 1886.

Other proposed constitutional amendments were, one empowering the General Assembly to pass an act providing for the incorporation of cities and towns, and one relating to the judiciary. Among other acts are the following:

An act to prevent the procurement of abortion.

An act in relation to corporal punishments. Allowing the court to remit whipping in the case of youthful criminals and those recommended to mercy.

An act in relation to the requisition of fugitives from justice. Similar to corresponding statutes of other States.

An act in relation to insane prisoners. Providing for the appointment of a commission in lunacy and the subsequent incarceration of the prisoner, if adjudged insane, in jail or almshouse, according to the gravity of his crime. Should he recover his sanity, he is liable to trial or sentence, as the case may be.

An act to authorize the New Castle levy court to make a loan for the benefit of the trustees of the poor.

An act concerning private corporations. A general incorporation act covering charters of all kinds except for towns, canal and railroad companies.

An act to authorize the New Castle levy court to fund the floating debt of said county.

An act to establish a State Library.

An act for the encouragement of immigration, and to foster the agricultural interests of the State.

An act to provide for the education and training of juvenile delinquents.

An act regulating the practice of medicine and surgery. For the suppression of quacks.

An act to regulate the practice of pharmacy.

An act to secure manufacturers of railroad equipments and rolling-stock in making conditional sales and certain contracts for the lease thereof.

An act in reference to the competency of jurors in capital cases.

An act appropriating money for free schools and for other purposes.

An act for the maintenance of colored schools.

An act in relation to contested elections other than for members of the General Assembly and Governor.

An act amending the act to provide a uniform ballot for election purposes. Gives a latitude of one fourth inch in the size of ballots, and provides that imperfections of paper shall not vitiate a ballot.

An act in relation to the election of assessors and inspectors.

Twenty-four divorces were granted.

A local-option law, proposed by the State Temperance Alliance, was defeated.

Inaugural Views.—Governor Stockley, in his inaugural address, expressed the following views:

Should you approve of my suggestions in reference to the increase of the membership of the General Assembly, then I would recommend a further amendment, limiting the sessions thereof to the period of sixty days, which, in my judgment, would afford ample time for the transaction of all necessary business.

A supplement to the act entitled "An act in relation to Free Schools" was passed at the last session of the Legislature, creating the office of Assistant Superintendent of the Free Schools of the State. Having given considerable attention to the subject, I am satisfied that the object of the law will be more fully and effectually attained by a further subdivision of the labor of the office, and would therefore recommend, in lieu of a State Superintendent and assistant, that there be three superintendents, one for each county.

In the matter of education, I most cheerfully concur in the suggestions of my predecessor as to the manner of increasing the school fund, whereby the free-school system would be rendered more efficient, and earnestly recommend that such ample appropriations be made as will promote and establish a more liberal and higher standard of education among our citizens generally.

I trust that this Legislature will consider well the present and future condition of a large class of persons who, by the Constitution of the United States, are clothed with the full rights of citizenship. Whatever may be thought of the propriety of these amendments, they have long since become parts of our common Constitution; therefore, those who have been thus made citizens are entitled to the protection and benefits which the law of the land confers upon other citizens. What the State regards as good and essential for one class of citizens it should for all. We believe the almost general opinion, throughout the State, is in favor of the establishment of separate schools, as the only just and proper system for the education and best interests of both races, and the opposition most emphatic and pronounced against what are termed mixed schools, under any and all circumstances.

In my judgment, a well-regulated, judicious, and stringent license system, promptly and faithfully executed in every particular, would more effectually restrain the great evils of intemperance than other legislation.

The great interest which I feel in the development and building up of the agricultural, manufacturing, and mechanical interests of the State impels me to urgently recommend the passage of a law creating a Board of Immigration, clothed with all necessary power to encourage and afford proper and ample facilities for immigration into our State.

Finances.—In January the Auditor made the following estimate of State receipts for the year:

General fund, balance	$30,148 70
Licenses	6,500 40
Philadelphia, Wilmington, and Baltimore Railroad	40,000 00
Junction and Breakwater Railroad	16,000 00
Breakwater and Frankford Railroad	8,000 00
Bank dividends	5,000 00
Tax on bank-stock	2,000 00
Collateral-inheritance tax	1,800 00
Secretary of State	900 00
Fire-insurance companies	800 00
Railroad capitation-tax	800 00
Brandy-tax	700 00
Total estimated receipts	$170,648 74

ESTIMATED EXPENDITURES.

Interest on bonds	$25,000 00
Interest on Delaware College scrip	4,980 00
Interest on school fund	9,405 00
Judiciary and law and equity reports	18,000 00
Salaries of State officers	9,350 00
Librarian and Library	500 00
Janitor	100 00
Appropriations for colored schools	2,400 00
Militia	1,200 00
Salary of Adjutant-General	200 00
State Board of Health	250 00
General Assembly (expenses)	14,000 00
Legislative allowances	8,000 00
Printing, stationery, etc	8,000 00
State-House repairs	800 00
Miscellaneous	1,500 00
Total	$98,685 00

Amount due the State:

From back tax and interest from the Junction and Breakwater Railroad	$38,886 86
From Breakwater and Frankford Railroad	4,000 00
From Philadelphia, Wilmington, and Baltimore Railroad	6,750 00

Schools.—The statistics show a slight decrease in the number of pupils attending school in the school year of 1882 as compared with that of 1881, and likewise a decrease in the amount of money raised by local taxation for school purposes, though the aggregate sum appropriated to schools in 1882 was larger than in 1881 by reason of a considerable increase in the receipts of the general school fund. The average monthly pay of teachers throughout the State rose from $27.84 in 1880 to $30.95 in 1882. The smallness of salaries and the shortness of the school year, less than six months in Sussex county, largely explains the inefficiency of many schools. The total cost of educating 33,000 white children in the school year of 1881–'82 was $181,799.84. The number of colored children in the State is a little less than one sixth the number of white children. The average enrollment is 10,000 less than the number of children of the school year, and the average daily attendance less than half the latter number. The average cost per head of educating the 23,450 white children enrolled was $6.85.

DENMARK, a kingdom in Northern Europe. The Constitution is embodied in the charter of June 5, 1849, which was modified in 1855 and 1863, but restored in an altered form in 1866. The executive power is exercised by the King through a responsible ministry, and the legislative power by the Rigsdag or Diet. The Upper House is called the Landsthing, and consists of 66 members, of whom 12 are nominated for life by the Crown, from actual or former representatives in the legislature, and the remainder are elected indirectly by the people for the term of eight years. The popular Chamber, called the Folkething, consists of 102 members, elected by direct universal male suffrage for three years. The only classes debarred from the franchise are those who have been recipients of public charity and persons in service who have no households of their own. The former class can regain the right by repaying the sums received. The limitation of age is thirty years. The Folkething decides in the first instance on all money bills presented by the Government. The Rigsdag meets annually on the first Monday in October. The Landsthing appoints every four years four of its members to form with the judges of the Supreme Court the Rigsret, which is the highest tribunal and has cognizance of legislative impeachments.

The Government.—The reigning King is Christian IX, born April 8, 1818, fourth son of Duke William of Schleswig-Holstein-Sonderburg-Glücksburg. He was appointed to the succession by the Treaty of London, concluded May 8, 1852, and the Danish law of succession of 1853, and succeeded to the throne on the death of Frederick VII. Nov. 15, 1863. The heir-apparent is Prince Frederick, born June 3, 1843.

The ministry, first organized June 11, 1875, is composed of the following members: J. B. S. Estrup, Minister of Finance and President of the Council; E. V. R. de Skeel, Minister of the Interior; J. V. M. Nellemann, Minister of Justice and Minister for Iceland; Baron O. D. Rosenörn-Lehn, Minister of Foreign Affairs, appointed Oct. 11, 1875; Commander N. F. Ravn, Minister of the Navy, appointed Jan. 4, 1879, and since April 1, 1881, Minister of War; J. F. Scavenius, Minister of Worship and Public Instruction, appointed Aug. 24, 1880.

Area and Population.—The area of the kingdom of Denmark is 13,784 square miles; the population, 1,969,039, of which number 234,850 live in the city of Copenhagen, 865,678 in the islands of the Baltic, and 868,511 in the Peninsula of Jutland. The total population was divided as to sex into 967,360 males and 1,001,679 females. The increase in fifteen years was 10·29 per cent. in the cities, and 5·99 per cent. in the rural districts. The proportion who live by agriculture is 89·5 per cent. The land is greatly subdivided under the operation of laws which forbid the consolidation of farms into landed estates. The number of marriages in 1879, the last year reported, was 14,287; births, 62,455; deaths, 38,531; excess of births over deaths, 23,924. The emigration is mainly to the United States, and has become considerable in recent years. In 1868 there were 765 emigrants; in 1869, 4,359; in 1870, 3,525; in 1871, 3,906; in 1872, 6,893; in 1873, 7,200; in 1874, 3,322; in 1875, 2,088; in 1876, 1,581; in 1877, 1,877; in 1878, 2,972; in 1879, 3,103; in 1880, 5,667; in 1881, 7,985; in 1882, 11,614.

The dependencies of Denmark are the Faroe Isles, of which the habitable ones, 17 in number, have an area of 512 square miles, and a population returned in 1880 as 11,221; Iceland, with an area of 40,300 square miles, of which 16,100 are habitable, and a population of 72,438; Greenland, with a habitable area of 33,800 square miles and 9,700 inhabitants; and the Danish Antilles, of which Santa Cruz has an area of 82 square miles, St. Thomas of 33 square miles, and St. John of 20 square miles, the population of the three numbering 33,763. Returns dated Jan. 1, 1882, give the population of Northern Greenland as 4,217, and of Southern Greenland as 5,484.

Commerce and Navigation.—The total imports in 1881 amounted to 245,233,000 crowns, the exports to 183,472,000 crowns. (The crown or krone, the unit of account in the decimal currency, introduced in 1875, is half the value of the old rigsdaler and equivalent to 26·8 cents.) Of the total value of the imports, 58,970,000 crowns were from Great Britain, 91,141,000 crowns from Germany, and 24,848,000 crowns from Sweden. Of the total exports, 63,760,000

crowns went to Great Britain, 61,834,000 crowns went to Germany, and 27,968,000 crowns went to Sweden. The United States was the next largest importing country, furnishing 18,943,000 crowns of the imports, but took only 1,619,000 crowns of Danish products in return. The imports and exports of the general classes of merchandise in 1881 were valued as follows, in millions and tenths of millions of crowns:

MERCHANDISE.	Imports.	Exports.
Articles of food	88·7	138·0
Raw materials	77·1	28·5
Manufactured products	62·7	10·2
Machinery, tools, and other means of production	16·7	11·8
Total	245·2	188·5

In 1880 the total imports amounted to 227,400,000 crowns and the total exports to 196,600,000 crowns.

The total tonnage of vessels entered at Danish ports in 1881 was 1,894,996 tons in the maritime, and 843,554 tons in the coasting trade. Of the former, 566,545 tons represented steam, and 828,451 tons sailing-vessels. The total tonnage cleared was 1,444,263 tons in the maritime, and 822,352 tons in the coasting trade.

The mercantile fleet numbered in 1881 3,016 sailing-vessels, of 203,555 tons, and 202 steamers, of 51,984 tons, as compared with 3,091 sailing-vessels, of 213,201 tons, and 188 steamers, of 45,124 tons, in 1878.

The railroad mileage in 1882 was 810 miles belonging to the state, and 1,105 miles belonging to companies. The length of telegraph lines in operation in 1881 was 2,200 miles; length of wires, 5,840 miles.

Army and Navy.—Obligatory personal military service for all Danes was enacted by the law of 1867 and the supplementary law of 1880. Service begins at the age of 22 and lasts 16 years, 8 in the regular army, and 8 in the reserve. In the majority of cases infantry-men remain with the colors only from 6 to 11 months, and cavalry-men 20 months, after which they obtain leave of absence and are required only during the manœuvres. The total strength of the army on the war-footing in 1882 was 50,522, inclusive of officers.

The navy in 1882 comprised 2 iron-clad frigates, with 44 guns; 3 floating batteries, with 14; 3 casemated vessels, with 20; 3 torpedo-vessels, with 7; and 2 frigates, 3 corvettes, and 5 schooners, unarmored; 13 iron gunboats, 2 wheel-steamers, and 9 torpedo-boats; together 44 steam-vessels, of 31,214 aggregate horse-power, armed with 252 cannon.

Finances.—The closed accounts of the year 1880–'81 state the expenditures as 47,543,367 crowns, and the receipts as 51,745,463 crowns. The budget for the year 1883–'84 gives the estimated revenue as 51,932,822 crowns, of which 5,272,532 crowns come from railroads, interest on reserve funds, and other state property, 1,136,676 crowns from the domains and forests, 9,004,700 crowns from direct taxes on lands, houses, and titles, 32,311,000 crowns from indirect taxes, and the rest from the state lottery and other sources. The expenditures are set down at 48,335,885 crowns, of which the public debt charges consume 9,821,700 crowns; civil pensions, 2,627,980; military pensions, 730,011; the civil list and appanages, 1,225,760; the Department of Worship and Instruction, 1,367,192; of Justice, 2,551,704; of the Interior, 2,067,075; of War, 9,118,851; of Marine, 5,833,989; of Finance, 3,046,768; Public Works, 5,426,072; extraordinary expenditures, 3,022,455.

The budget for 1884–'85, laid before the Folkething Oct. 2d, estimates the revenue at 53,578,743 crowns and the expenditures at 51,631,698 crowns. The increase in the revenues is derived from the indirect taxes, which are becoming more productive every year. The increased expenditures are due to the projected new railroads and the extensive system of fortifications for which the plans have been adopted.

The public debt on March 31, 1882, amounted to 201,664,701 crowns, of which 187,907,034 crowns represented the domestic debt and 13,757,667 crowns foreign loans. The assets of the state were valued at 84,306,206 crowns, of which 40,728,814 crowns were capital expenditure, 19,276,262 crowns reserve funds, and 24,301,130 miscellaneous assets. The cost of construction of the state railroads was at that date 130,052,923 crowns. The public debt will be reduced by April 1, 1884, to 197,000,000 crowns, making a total reduction of 38,000,000 crowns in fourteen years. The object of the large reserve fund kept on hand is to have funds at the disposal of the Government in any sudden emergency.

Constitutional Crisis.—The protracted conflict between the King, supported by the Conservative party, and the Liberal party, which forms the majority in the Folkething, and derives its support from the rural population and the democratic and socialistic masses in the capital, came no nearer to a solution in 1883. The legislative deadlock became more serious. The contest is over the prerogative of the King to appoint his ministry, whom the Opposition would require him to choose from the party of the majority, in accordance with the doctrines of parliamentarism. The chief subject at present in dispute between the King and the Parliament is the proposed fortification of the city of Copenhagen. The country party assert that this project, the cost of which has grown in the estimates from twenty to a hundred millions, will transcend the financial resources of the country, while affording no security for the military defense of the parts of the country more in danger and for the integrity of the kingdom. The items in the budget for the defensive works were thrown out, as usual. In April the Radicals endeavored to bring the con-

stitutional question to an issue by an address to the King expressing lack of confidence in the ministry. The Landsthing adopted counter-resolutions; and deputations of both Houses waited on the King. The address of the Folkething reminded the King that the ministry, since its constitution, had been unable to obtain the assent of the legislature to any measure of importance except the annual budget; that in 1877 the expenditures for a part of the year were met by the assumption by the Government of unconstitutional powers, and those of 1881–'82 by occasional grants without a regular finance law; that the Government had dissolved the Folkething four times, and in each election an increased majority had confirmed the position taken by the Opposition; and that the country suffered great detriment from the stagnation of public business resulting from this never-ending conflict. The vote of censure was carried in the Folkething by a majority of 72 to 20, while the vote of confidence in the Landsthing was supported by 40 against 10. The King received the addresses of both Houses, and in his answer rebuked the Folkething for defeating the legislative efforts of the Government and rejecting the plans for national defense, while he informed the Landsthing that he would maintain the constitutional order against the attacks of the Opposition. To a deputation representing a mass-meeting of 18,000 persons which sought audience with the King in May, he replied that o ly the legislative representation, by which he understood both Chambers, could speak to him in the name of the people, and reaffirmed his right to choose his own ministers. All through the year popular meetings were held to protest against the attitude of the ministry. The Government, which upheld the same doctrine of the royal prerogative that is advanced by the German Government, though against no such pronounced and general popular dissent as is manifested in Denmark, attempted to strengthen their position, which was growing more and more untenable, by imitating the tactics of Prince Bismarck. In the session of the Rigsdag which opened Oct. 1st, the ministry brought in a bill to provide a system of old-age insurance for the poorer classes after the Folkething had tabled thirty ministerial measures. A scheme of superannuation annuities was inaugurated twenty years before by Minister David, but was afterward abandoned. A Government refuge for the aged already exists. The present proposition provides for the accumulation of a fund by weekly voluntary payments, to be repaid in the form of annuities, generally not exceeding 200 crowns, after the age of fifty-five, or returned in other cases with interest compounded at 2 per cent., the state furnishing the guarantee and defraying the expenses of administration. The Folkething did not reject this bill off-hand as it did the others, but debated it, referred it to a committee, and finally voted against it on its merits.

Socialist Congress.—The German Social-Democrats, while enjoying in the Reichstag the freedom of speech which the German Constitution insures, and commanding a degree of attention which is more than commensurate with their numerical strength in the legislature, are hunted by the police out-of-doors, and refused every right of assembly, speech, and printing, which would enable them to communicate with their constituents and consult upon party action. They not only dare not assemble in Germany, but through the influence of the German Government an asylum is likely to be refused to them in the neighboring countries. In 1883 they planned in secret to hold their annual convention in Copenhagen, while the German police and the public were led to suppose that it would take place at Zürich. They arrived unobserved and registered under assumed names in the hotels. There were fifty-six delegates, representing sixty districts of Germany, among them the entire Social-Democratic delegation in the German Parliament with two or three exceptions. There were representatives also of the German Socialists in England, France, and Switzerland. The Danish police discovered the character of the gathering on the second day, and warned them to take a speedy departure. They closed their three-days' session April 2d, and returned to Germany. The deputies Von Vollmar and Frohme were apprehended on landing at Kiel by the German police, and their detention was the subject of a discussion in the German Parliament. The Copenhagen Congress discussed, among other party matters, the position to be taken in the elections of 1884, and decided to oppose out and out the socialistic legislative projects of Prince Bismarck.

German Conscription of Schleswig Danes.—Among the difficulties which followed the high-handed disposal of the Schleswig-Holstein question by Prussia, is the anomalous position of that portion of the inhabitants of the annexed provinces who elected under the treaty to remain Danish subjects. A considerable proportion of the more substantial Danish farmers in Northern Schleswig availed themselves of the option, crossing the frontier and residing in Denmark long enough to preserve their rights of nationality according to treaty, and then returning to their homesteads. Their children are Danish subjects by birthright. This class now numbers from 20,000 to 30,000 in North Schleswig, and is increasing. In some districts one quarter or one third of the population are Danish subjects by option, or descendants of such. Disturbed at the increase of the Danish community, the Prussian Government issued a decree in January requiring the sons of Danish subjects to embrace the German nationality, and, as an indication of their intention of becoming naturalized, to report themselves for military service or to emigrate on pain of forcible banishment. This order created much excitement in Schleswig and

Denmark. The young Danes of North Schleswig paid no attention to it. The feeling in the province was manifested by the action of their deputy to the Reichstag, who, in consequence of the order, refused to take the oath of allegiance to the Emperor.

DIAMONDS AND THE DIAMOND-TRADE. During the past ten years the diamond-trade of the world has undergone great modifications. The old sources of supply in India and Brazil were practically exhausted many years before. Very few new stones were discovered, and diamond-mining had ceased to be remunerative. The few stones brought to Europe were almost wholly the remains of former findings slowly brought forth from their hiding-places. In 1868 diamonds were discovered in the interior of Southern Africa, and the field was soon found to be much larger and more prolific than those of Golconda and Brazil had ever been. The diamond region, vaguely known as Griqualand, having an area of about 17,000 square miles, was formally annexed to the British colony of the Cape. The actual diamond-fields are of very limited extent, and are scattered at wide intervals. The Kimberley mine, hitherto the most productive of all, has an extent of less than one square mile and a half. It appears to be nearly exhausted, but it is hoped that by digging deeper other diamond-bearing strata will be reached. For a dozen years and more the greater number of diamonds have been derived from this quarter, and it was supposed that so great an increase of supply would materially depress the market value.

A considerable proportion of the African diamonds are of inferior grade; of these there is an over-supply, and we are told by the most extensive diamond-dealer in New York that "low-grade diamonds are a drug in the market." He adds, however: "There is a constantly increasing demand for choice stones, and when such a one comes in our way we never fail to buy it, if it can be had at anything like a reasonable price; for we are sure that we need not wait long for a purchaser at almost any price we choose to name."

The weight of diamonds is always expressed in carats—a carat being equal to a little less than 3¼ grains troy; or, more exactly, one ounce troy is equivalent to 150 diamond carats. An ounce of pure gold is worth about $20; an ounce of fine 1-carat diamonds would be valued at from $20,000 to $60,000.

But the value of diamonds increases in the geometrical ratio of their weight. The nominal rule is, square the number of carats of weight, and then multiply the product by the value of a single-carat stone. Thus, supposing a fine 1-carat stone to be worth $200, a similar 2-carat stone would be $800; a 3-carat stone, $1,800; and so on.

Rough diamonds are rarely brought to this country, although they are admitted free of duty; cut diamonds pay 10 per cent. They are usually sent to Europe to be cut; the chief places being Amsterdam and Antwerp, in which cities there are said to be not less than 6,000 workmen in this occupation. Diamond-cutting, however, has been introduced into the United States within a few years, and there are probably about 100 diamond-cutters here. There is every reason to anticipate that this occupation will be rapidly extended. Supposing the rate of wages to be the same in New York and Amsterdam, there would be a saving of 10 per cent. on the entire cost of a diamond by having it cut here. The actual cost of cutting is much less than is generally supposed. The cost of cutting a $14,000 brilliant was not far from $150.

Diamonds always lose more or less, and usually very considerably, in size and weight, in the process of cutting, and to estimate the probable amount of loss is one of the great problems of the diamond-merchant; hardly less important than the judging of the quality of the stone, which can rarely be certainly known while it is in the rough. The prices of rough diamonds of low grade, at the Cape, a year ago, averaged about $7.50 per carat; they are now quoted at about $13. Fine stones, of course, bring much more. The diamond-market at the Cape is mainly controlled by a number of European companies, with an aggregate capital of $32,000,000. They operate measurably in common; work several of the principal mines, loan money to individual miners, purchase their findings, and transmit the stones through their agents to all the markets, of which the American is daily becoming more and more important, although as yet it is confined almost exclusively to cut gems of the finer grades.

Imports.—There appears to be no means of accurately estimating the value of the diamonds annually brought into the United States; for in the custom-house reports all kinds of jewels are put under one head as "precious stones." The reported value of these imports, in 1880, was $6,698,000; in 1881, $8,090,000; in 1882, $8,444,000; and probably much greater in 1883, although the precise figures are not at hand. Diamonds themselves probably do not constitute a fourth, perhaps not an eighth, of this amount. But even supposing that the yearly importation of diamonds does not exceed $1,000,000 or $1,500,000, the aggregate for a series of years forms a very considerable addition to the sum of our accumulated and invested wealth; for it must be considered that whatever sum is thus laid up is one of the most permanent of investments. And if the purchases are judiciously made, this is one of the safest of investments. Diamonds never wear out; there is no known means of destroying them except by burning them; and few things are less likely to be lost by accident. They may indeed be stolen, and are of course a favorite object for thieves and burglars. But the most successful diamond robbery is far

less profitable to the perpetrator than might at first be supposed. The thief can not well display his plunder upon his own person; and he can rarely dispose of it except to some dishonest purchaser, and for a sum much below its real value. No reputable dealer will purchase so costly an article unless he is sure that the seller has a good title to it; and the whereabouts of any valuable stone is easily learned.

There is little likelihood that the taste for diamonds will diminish. Other precious stones may come into fashion, but diamonds will never go out of fashion; for, more than any other jewel, they combine the attractions which have brought them into universal favor. And, moreover, the number of those who are able to indulge in this costly luxury increases far more rapidly than do the products from any probable source of future supply. This applies more especially to the finer grades of stones; for inferior grades the opposite is true.

Counterfeits.—Diamonds are counterfeited so skillfully that only an expert can detect them with any certainty. There are imitations so perfect that an expert could not detect the difference, by the eye alone, by gaslight, at the distance of a few feet; but, let him take one of them into his hand and examine it closely, and he will never be at a loss to distinguish the genuine from the cleverest imitation.

The advertisements of "Parisian diamonds," or by whatever other name they may be called, which are "in all respects equal to the genuine ones," are fraudulent. It is said that some of these consist of a "surface of pure diamond," deposited upon a solid crystal base. No such thing is possible; there is no means known to science by which any such result can be produced. "Stage diamonds" are to be looked at by gaslight and at a distance, and serve all the purposes in view.

DIPLOMATIC CORRESPONDENCE OF THE UNITED STATES. The controversy between the United States Government and that of Great Britain regarding the construction and validity of the agreement of 1850, known as the Clayton-Bulwer Treaty, was continued at intervals during the year. In a dispatch to Mr. West, British Minister at Washington, dated Dec. 30, 1882, Lord Granville, British Secretary of State for Foreign Affairs, discussed the questions involved at great length, and announced the conclusions of his Government as follow:

The conclusions arrived at by her Majesty's Government, after a careful consideration of the questions raised in Mr. Frelinghuysen's dispatch, are that the meaning and effect of Article VIII of the Clayton-Bulwer Treaty are not open to any doubt; that the British Government have committed no act in relation to British Honduras, or otherwise, which can invalidate that treaty, and justify the Government of the United States in denouncing it, and that no necessity exists for removing any of the provisions of that treaty.

There might, perhaps, be advantages in defining by agreement the distance from each end of the canal within which no hostilities should be committed by belligerents, in order to maintain the freedom of the passage through the Panama Canal, should that route be completed, and when the time approached for its completion her Majesty's Government would, no doubt, be prepared to give its careful attention to the question of concluding an arrangement with that object, should such a proposal be made to them, but in the present stage of the enterprise they conceive that it would be premature to enter upon negotiations for that purpose.

I have not thought it necessary to allude in this dispatch to the "traditional continental policy" of the United States as laid down in what is commonly called the "Monroe doctrine," since Mr. Frelinghuysen, in his note of the 8th of May last, in which he explained the views which were entertained by his Government on that subject, admitted that her Majesty's Government was not called upon either to admit or deny the views therein expressed.

You will state to Mr. Frelinghuysen that her Majesty's Government are animated by the most sincere desire to arrive at an amicable settlement of the questions which have given rise to this correspondence, and that they note with great satisfaction the friendly assurance with which he concludes his dispatch that the diversity of opinion which now exists will not in anywise impair the good understanding happily existing between the people and Governments of the United States and Great Britain.

The following is the response of the Secretary of State, transmitted through Mr. James Russell Lowell, the American Minister in London:

DEPARTMENT OF STATE, WASHINGTON, *May* 5, 1883.

SIR: I inclose herewith copy of an instruction from Lord Granville to her Britannic Majesty's Minister in Washington, dated Dec. 30, 1882, a copy of which was handed to me by Mr. West, and which is a reply to the agreement contained in my No. 368 to you of May 8, 1882, on the subject of the Clayton-Bulwer Treaty.

You will remember that my No. 368 showed that the first seven articles of the treaty related to a particular canal then in contemplation, to aid the construction of which the treaty was signed; that the United States, being then without the means to build the canal, for which they had secured an exclusive grant from Nicaragua, naturally turned to England for capital, to secure which they were willing to surrender some of their exclusive privileges; and that, the canal never having been built, the reason for the surrender of privilege has ceased, and the treaty with Great Britain is voidable, being without consideration or any object to which it is applicable.

Lord Granville in his instructions to Mr. West in substance concedes that the first seven articles of the treaty related to what was then known as the Nicaragua Canal, but intimates an uncertainty as to the route. In this he is in error, for the line of the canal was definitely fixed soon after the conclusion of the treaty and accepted by both Governments.

His lordship, however, practically confines himself to an assertion of rights under Article VIII, by which the parties, "after declaring that they not only desired in entering into the convention to accomplish a particular object, but also to establish a general principle, agreed to extend their protection by treaty stipulations to any other practical communications, whether by canal or railway, across the isthmus which connects North and South America, and especially to the interoceanic communications, should the same prove to be practicable, whether by canal or railway, which are now proposed to be established by the way of Tehuantepec or Panama," and he claims that this provision is in effect an agreement that all the prior provisions with reference to the particular ship-canal—the Nicaragua route—then in contemplation, should be applied to any other canal thereafter constructed. Citing treaties between the United States and some of

the Central American states, he contends that the Government, having, since the Clayton-Bulwer Treaty of 1850, entered into treaties which harmonize with the "general principle," is estopped from denying that the eighth article has the construction and effect he contends for.

Lord Granville further holds that Article VIII is none the less an agreement because it provides for further treaty stipulations to carry it into effect. This argument has already been anticipated in my No. 368, in which it was shown that while the parties interested agreed, in Article VIII, to extend by further treaty stipulations their protection over other communications across the isthmus, the immediate object of the article was the protection of the communication "now" [1850] proposed to be established by the way of Tehuantepec or Panama. None of the proposed communications having been established, the reason for the agreement has disappeared.

Further, the article provides for carrying out the "general principle" by additional stipulations, which have not been even discussed. Nor is there anything in the eighth article which makes applicable to any other route the provisions of the first seven articles, covering the "particular object," viz., the Nicaragua Canal.

The eighth article, therefore, is simply a declaration of the intention entertained more than thirty years ago by two nations to take up, at some subsequent period, the negotiation of a treaty on a particular subject. In order to carry out this, further treaties must be made by the United States and England with each other and with each of the Central American states through which a canal may be built, defining in detail the stipulations necessary to execute the general principles.

It can not be successfully contended, as is suggested by Lord Granville, that the separate treaties made by this country with some of the Central American states, by which this Government agrees to guarantee neutrality, show an agreement to guarantee it jointly with Great Britain, for that would involve the admission that an express agreement to guarantee singly is in effect an implied agreement to guarantee jointly. Nevertheless, it is not denied that the United States did for many years try to induce Great Britain to fulfill her part of the agreement of 1850, and it was only when it became impossible for her Majesty's Government to perform the promises which had led the United States to make the treaty that the position now maintained was assumed.

If it be contended that even if the treaty may be considered as lapsed as far as it relates to the specific route by Nicaragua and the routes named in the eighth article as contemplated in 1850 (by Panama and Tehuantepec), yet the treaty is binding so far as it relates to other isthmian communications not specified and not then contemplated, the answer is that the treaty must be considered as a whole, and that the general stipulations of the eighth article would never have been made but for the stipulations as to the specified routes then contemplated, and, that part of the treaty having lapsed, the general stipulation as to any interoceanic communication fails for want of consideration.

To reach the construction his lordship seeks to put on the eighth article, its plain language must be disregarded, and the consideration must be ignored that the article is as applicable to the Panama Railroad as to any other means of isthmian transit, and that by acquiescence for many years in the sole protectorate of the United States over this railway, Great Britain has in effect admitted the justice of the position now maintained by the President.

Passing the interpretation of Article VIII, you will remember that I contended that the Clayton-Bulwer Treaty is voidable because, while by Article I the two nations expressly stipulated that neither of them would occupy, colonize, or exercise any dominion over any part of Central America, but Britain, at the same time, has a colony, with executive and judicial officers, occupying a defined territory nearly equal in area to three of the smaller States of the Union. It is true, as was shown in my No. 368, that after the treaty had been ratified by the Senate in the form in which it now appears, and on the Fourth of July, 1850, Mr. Clayton did exchange with Sir Henry Bulwer memoranda stating that the stipulation in Article I should not apply to the "settlements in British Honduras (Balize)," and it is also true that Mr. Clayton declined to affirm or deny the British title in this "settlement" or its alleged dependencies. Lord Granville now claims that Honduras was then already (and to the knowledge of this Government) a British "possession" or colony by conquest from Spain through successful resistance by settlers to a Spanish attack.

The stipulations of the treaty, as well as the memoranda exchanged by Mr. Clayton and Sir Henry Bulwer relative to a British settlement, appear to be inconsistent with any such claim, for nowhere in them can be found any statement which expresses or implies that Great Britain claimed or the United States admitted any such governmental control in the former over Balize as is now advanced and as is necessarily implied in the word "possession."

The date of the conquest of Balize alluded to by Lord Granville is not stated, but the incident to which he refers is supposed to be the repulse by a ship of the royal navy and the settlers of an attempt in 1798 on the part of Spain to take possession of the Honduras. As the British settlers held under grants from Spain, it seems hardly necessary to consider whether the successful resistance of a tenant to an attempt to oust by force, changes the tenure to one of full possession. His lordship, however, meets this point by a plea of possession through abandonment, saying, when peace was signed, "most of the British conquests from Spain were restored to her, but the settlement in Honduras, like that of the Falkland Islands, was not given up, and continued on the same footing as any other possession under the British crown."

By the third article of the Treaty of Amiens of 1802 Great Britain engaged to restore all Spanish possessions occupied or conquered by British forces. Balize was not given up, because it was not a conquest, but a settlement under Spanish grants and Spanish sovereignty. The parallel with the Falkland Islands does not seem convincing, for these islands were ceded by France to Spain in 1763. By Spain they were in turn ceded absolutely to Great Britain in 1771, but their possession was not abandoned until 1820. Buenos Ayres occupied the islands as derelict and colonized them later in 1831. After a difficulty between the settlers and American sealing-vessels the United States ship-of-war Lexington broke up the settlement and removed the settlers to Buenos Ayres, and it was not until 1833 that Great Britain enforced her claims under the cession of 1771.

As to Balize, however, there was no cession. If the sovereignty of Spain was annulled by conquest in 1798, it was restored by the Treaty of Amiens in 1802, and while after this treaty and during the Bonaparte occupation hostilities were renewed, the treaty of 1803 provided that there should be peace between Spain and Great Britain, and "also an entire obliteration of all hostilities committed during the late war." Since the conclusion of this treaty Spain and Great Britain have been at peace, and it is not imagined that Earl Granville will seek to show that a lawful possession could be thereafter created for Great Britain by a violation of that treaty in time of peace. No conquest of any part of Honduras is known to have occurred after 1802; but if there were, the perpetuation of this conquest would hardly comport with the reciprocal agreement of 1809 to restore the *status quo ante bellum*.

On the other hand it is known that the settlements in the Balize were made under certain limited grants from Spain, subject to her sovereignty, and that long after the treaty of 1809 the occupation was generally regarded simply as a "settlement," and was so called by Lord Clarendon as late as 1854 in a note to Mr.

Buchanan, and so remained until May 12, 1862, when by royal commission it was erected into a full colony and subordinated to the Government of Jamaica.

If Great Britain has turned the "settlement" maintained for the cutting of logwood and mahogany into an organized British colony—and this is admitted—or if that settlement has encroached beyond the line occupied by the settlers in 1850—and the reports from Guatemala and Mexico tend to show that this has been done—the action has been taken in contravention of the Clayton-Bulwer Treaty, and in violation of one of its most important provisions. The insufficiency of this part of Lord Granville's argument is shown by the contention that through a postal convention this Government has recognized the British position. The negotiation of a postal convention in 1869 can not be held to involve any admission of the political status of the Balize district. It is a strained construction of such an agreement to hold that it works an estoppel as to a matter not in the mind of either party to the negotiation, and as to which both parties were endeavoring to reach a satisfactory conclusion through other and different channels; nor does the Post-Office Department act politically in its dealings with similar departments of other governments.

If, however, the United States had submitted to the conversion of the Balize to a colony by her Majesty's Government in violation of the treaty, that is by no means a recognition of the binding force of the treaty on the United States when thus violated.

In the conviction, therefore, that the arguments heretofore presented by the United States remain unshaken, the President adheres to the views set forth in the instruction to you of May 8, 1882.

Lord Granville concludes by saying in effect that he does not answer that part of the instruction to you which relates to the Monroe doctrine, because of my observation that it is not necessary for her Majesty's government to admit or to deny that doctrine. As his lordship placed the claim of her Majesty's Government on the continued binding force of the Clayton-Bulwer Treaty, limiting that doctrine, as we contend, I think my remark was logical, and so far as the United States are concerned their views on that doctrine are sufficiently manifest.

You will assure Lord Granville that this Government shares the sincere desire of that of her Majesty to arrive at that amicable adjustment of the question which can not fail to promote harmony and good-will between the two countries, and which it is my duty and pleasure, equally with his lordship, to do all in my power to perpetuate and increase.

You will take an early occasion to read this instruction to Lord Granville, and, if he should so desire, to leave a copy with him.

I am, etc.,
FREDERICK T. FRELINGHUYSEN.

The following is presumed to close the discussion for the present:

DEPARTMENT OF STATE,
WASHINGTON, *Nov.* 22, 1883.

James Russell Lowell, Esq., etc., London.

SIR: I inclose herewith a copy of an instruction from Lord Granville to her Britannic Majesty's Minister at Washington, dated Aug. 17, 1883, a copy of which was handed me by Mr. West, and which is in reply to my 586 to you of May 5, 1883, on the subject of the Clayton-Bulwer Treaty. You will observe that Lord Granville says that "Mr. Frelinghuysen still contends that the Clayton-Bulwer Treaty is voidable on two grounds—first, because the first seven articles of the treaty related to a particular canal by the Nicaraguan route only; and, secondly, because Great Britain has, at the present day, a colony instead of a settlement at Balize." Lord Granville's attention should be called to the fact that this Government not only holds the position to which he has referred, but also holds, as stated to you in my instructions of May 8, 1882, and May 5, 1883, that for the purpose of obtaining the then needed capital to construct an interoceanic canal by the Nicaraguan route, the United States were willing to surrender a part of their exclusive privileges in a canal by that route, and were also willing to agree that, by subsequent treaty stipulation, they would join with Great Britain in the protection of the then proposed Tehuantepec, Panama, or other interoceanic communication, and that the consideration having failed, the treaty is voidable as to the Nicaraguan route and as to the other routes.

Lord Granville raises the point that no time was fixed by the convention within which such interoceanic communications were to be made. While this statement is correct, it is also true that it was contemplated that the canal was about to be constructed at the time the treaty was negotiated, and that the survey therefor was then made, and that thirty-three years have elapsed without Great Britain rendering the consideration on which the treaty was based, and this failure, we think, affects the treaty in the same manner that a failure by Great Britain to give the consideration within a definite time, had one been fixed by the convention, would have affected it. The treaty provides that neither the United States nor Great Britain shall colonize or exercise any dominion over any part of Central America. This was a most important provision. It is one of a cluster, restraining one nation from having any advantage over the other in regard to the police of the canal, such as the provision against alliance, against occupation and fortification, and against taking advantage of any intimacy or influence, and yet it is claimed that the treaty does not prohibit the existence of a large, regularly organized British colony in Central America, while it does prohibit the United States from having any possession or colony there. The color for this claim is, that while the stipulation that neither of the two Governments should colonize any part of Central America, is most conspicuous, the declaration of Sir Henry Bulwer, prior to the exchange of the ratifications of the treaty, states that "her Majesty does not understand the engagements of that convention to apply to her Majesty's settlement at Honduras or its dependencies." This declaration can not be held to authorize the subsequent colonization by her Majesty's Government of a territory as large as three of our smaller States. The declaration was made, not to change or vary the treaty, but of abundant caution that it might not be misunderstood. The meaning of the declaration, we think, is that a mere settlement of British subjects for the purpose of cutting mahogany and logwood at Honduras, under Spanish-American sovereignty, was not to be considered a British colony, and thus be a violation of the treaty, and I fail to see how, since the exchange of the ratifications of the treaty, the organization of a colony with a full colonial government, under the British sovereignty, can be looked upon as authorized or allowed either by the treaty or by Sir Henry Bulwer's declaration. The two contracting powers are equally bound not to colonize any part of Central America, and the declaration itself of Sir Henry Bulwer, not being the exception of any territory in Central America from the operation of the treaty, but providing in effect that the settlement should not be considered a British colony, tended to strengthen and not to destroy the mutual obligation not to colonize in Central America.

Lord Granville is correct in saying that I stated in my instruction to you of May 8, 1882, that her Majesty's Government was not called upon either to admit or deny the views therein expressed as to the Monroe doctrine, and this was so for the reason there given, to wit, because her Majesty's Government placed its claim to join in the protection of the interoceanic canal on a treaty which, if binding, certainly modified the Monroe doctrine. But the fact that this Government, for a promised consideration, modified by treaty what is called the Monroe doctrine I think does not in any manner affect that doctrine after the treaty has

fallen, because of its infraction and because of the failure of the consideration contemplated.

I observe that Lord Granville says that her Majesty's Government have reached the conclusion that a prolongation of this discussion is not likely to lead to any practical result, and also says that Great Britain has large colonial possessions and great commercial interests, which render any means of unobstructed and rapid access from the Atlantic to the Pacific a matter of the greatest importance to Great Britain. In the conclusion of this discussion, you may say to Lord Granville that this Government fully appreciates the importance to Great Britain of an unobstructed and rapid access from ocean to ocean, and has no disposition, as stated in my instruction to you of May 8, 1882, to impede Great Britain in the enjoyment of such an access, and that this Government believes that the two nations will, in due time, reach a satisfactory solution of the questions that have been considered in this correspondence. You may read this instruction to Lord Granville, and leave a copy of it with him should he desire it. I am, etc.

FREDERICK T. FRELINGHUYSEN.

The trial and conviction in London of Patrick O'Donnell, an alleged citizen of the United States, for the murder in South Africa of James Carey, was the occasion of considerable correspondence covering the period from September 24th to December 15th.

Under the first-mentioned date Mr. Hoppin, the American secretary of legation in London, informed Secretary Frelinghuysen of the arrest of Patrick O'Donnell, and of his anxiety to have a solicitor appointed to undertake his defense. He further informed the secretary that, in response to a communication from the deputy-governor of Millbank Prison, he had stated that there was some doubt as to O'Donnell's identity. He had added that, supposing the prisoner's citizenship to be established, he did not believe it to be the duty of the United States Government under ordinary circumstances to provide professional legal assistance for one of its citizens accused of crime in Great Britain, even if he were destitute of means, and that there seemed to be nothing in this case to make it an exception. He had therefore declined to instruct some one to defend him, except under directions from the Department of State. Mr. Hoppin inclosed in his communication the letter of the governor in charge of Millbank Prison, and his reply thereto. Under date of Oct. 5, 1883, Secretary Frelinghuysen wrote to Mr. Lowell, directing him to ascertain whether O'Donnell was a citizen of the United States, and, if so, to do whatever was necessary to secure his proper defense. Inclosed in this communication was a letter from the Hon. John F. Finerty, of Illinois, transmitting resolutions adopted at a meeting in Chicago, urging upon the Secretary of State the necessity for immediate action by the United States to vindicate the right of O'Donnell to a fair trial. The reply of Secretary Frelinghuysen to Mr. Finerty was also inclosed, and in it the Secretary said:

It is not doubted that the accused will receive a fair trial according to the usual forms of law, which, in England, are substantially those in force in this country, and that any proper aid to that end which it is within their power to furnish will be given by the representatives of the United States in London. Such aid would be given, as a matter of course, without specific instructions from this department, to any American citizen accused of crime in any foreign country where this Government is represented.

Under date of Oct. 9, 1883, Secretary Frelinghuysen inclosed to Mr. Hoppin the request of the Hon. John A. Logan and others that William F. Hynes and William W. O'Brien be authorized to appear in court on behalf of O'Donnell. He also inclosed his reply thereto, stating that he understood that Gen. Pryor and ex-Judge Fullerton, of New York, were to take part in the defense. Mr. Lowell being absent from London, Mr. Hoppin replied to the last communication, stating that he had come to the conclusion that the certificate of naturalization produced by O'Donnell was either granted to some other person "bearing the not unusual name of Patrick O'Donnell, or that it was fraudulently obtained by the prisoner." It is possible, he said, that the State Department may decide that the simple fact of the prisoner's possessing a certificate of naturalization in his own name is sufficient proof of his citizenship, without regard to antecedent facts. It seemed to him that O'Donnell's defense had been properly secured, and that it was not necessary for him to take any further steps in that direction. It was hardly necessary for him to show the immense inconvenience, if not absolute impracticability, of providing, as a matter of course, professional assistance for destitute American citizens accused of crime in all parts of the United Kingdom. Such action would throw upon the legation judicial duties which would materially interfere with its legitimate work, and would entail great expense upon the Government.

Under the date of October 23d, Mr. Hoppin informed Secretary Frelinghuysen that he had made further inquiries concerning O'Donnell's alleged citizenship, and while it was impossible for him to give an authoritative opinion upon the question, he could say that he was impressed with the apparent truth of O'Donnell's statements. The question of O'Donnell's citizenship was summed up in the following communication from the Secretary of State to the President:

In response to your direction I have the honor to inform you that an investigation was made of the right of Patrick O'Donnell to claim citizenship in the United States, the result of which I have the honor to communicate to you herewith. The statements made in behalf of O'Donnell's right to claim American citizenship are conflicting. It is asserted that he is a citizen, first, by the naturalization of his father, Michael, while he, the son, Patrick, was yet a minor; second, by reason of service in the army of the United States during the late civil war; and third, by naturalization as one who resided in the United States for the three years next prior to his coming of age, and continuously thereafter up to the time of his making application for citizenship. The claim to citizenship through his father's act rests upon his own state-

ments. No proof of the fact is found or furnished, and it is not confirmed by other members of the family that the father ever was naturalized. Had he been, Patrick O'Donnell need not have applied for naturalization. As to the second point, O'Donnell himself says that an injury to his arm prevented his enlistment in the army, but that he was employed as a teamster in 1864 on a United States Government supply-train in Colorado. It has not been thought necessary to verify this statement, for if true the fact would not give him the right to naturalization as one who had served in the army; and, moreover, the certificate is not granted on the ground of his having been a soldier. In support of the third allegation he produces a certificate of his naturalization on Nov. 6, 1876, by the Probate Court of Lawrence co., Ohio. This certificate was issued in conformity with section 2167 of the Revised Statutes, which provides that "any alien being under the age of twenty-one years, who has resided in the United States three years next preceding his arriving at that age, and who had continued to reside therein to the time he may make application to be admitted a citizen thereof," may be admitted on making the prescribed declaration at that time instead of two years before naturalization.

It would appear that this certificate was irregularly granted, for by O'Donnell's statement, made to the United States *chargé d'affaires* at London, he returned to Ireland after attaining majority, and remained there between 1868 and 1871, and consequently had not continued to reside in the United States from the time of his coming of age to the time of making application to be a citizen, as he must have done to conform to the requirements of the statute. It is also uncertain whether he, in fact, resided here for the three years next before attaining majority. By his statement to Mr. Hoppin he is now about forty-eight years old, which puts his birth about 1835. In the declaration of intention made at the time of naturalization he declares that he was born in 1838. He must therefore have attained majority somewhere between 1856 and 1859. By his own statements he came to this country with his mother (his father being already here) when about four or six years old (1839–1844), returned to Ireland when twelve years old (1847–1850), and came back to the United States in 1861, when he must have been between twenty-three and twenty-six years old; so that between the extreme dates assigned by himself, the three years next preceding his reaching majority would appear to have been spent in Ireland. The act of naturalization being, however, a judicial decision, it can only be impeached according to the rules established in the Spanish-American Commission, by showing want of jurisdiction on the part of the granting court, or fraud practiced by the applicant on the court, or that the naturalization was in violation of treaty stipulations.

Patrick O'Donnell has a certificate of naturalization. He may have obtained it by mistake of the court, or by his own mistake, or there may be mistakes in the statements he now makes, and yet be an absence of fraud, and as the certificate is *prima facie* evidence of citizenship, and as I do not see the evidence that O'Donnell practiced a fraud upon the court, the United States legation at London was instructed to consider O'Donnell's citizenship established.

Under date of Dec. 11th, Mr. Frelinghuysen telegraphed Mr. Lowell of the action of the House of Representatives, as contained in the resolution of Dec. 10th, repeated his former instructions to consider the citizenship of O'Donnell established, and concluded by saying: "There being in Great Britain no judicial examination or appeal of the proceedings at a criminal trial possible, errors can only be corrected through a new trial and by executive action upon the sentence. Therefore this Government is anxious that such careful examination be given to the proceedings in this case as to discover an error should one have been committed. You are, therefore, directed by the President to request a delay of the execution of the sentence, and that a careful examination of the case be made by her Majesty's Government, that the prisoner be permitted to present any alleged points of error."

On Dec. 15th Mr. Lowell telegraphed to Mr. Frelinghuysen, acknowledging the receipt on Dec. 12th of his telegram of Dec. 11th, and stating that he immediately sent its substance to Lord Granville, who on Dec. 13th acknowledged its reception and stated that it had been referred to the proper authorities; that on the date of his telegram (Dec. 15th) Mr. Lowell received the final decision in the following words:

"SIR: With reference to my letter of the 13th inst., I have now the honor to state to you that the counsel for O'Donnell, having submitted such representations as he thought advisable on behalf of the prisoner, these representations and all the other circumstances of the case have been carefully examined and considered in the manner usual in the case of capital convictions, and her Majesty's Government find no grounds upon which they would be justified in advising the Crown to interfere with the sentence of the law or its execution. I have, etc., GRANVILLE."

The resolution of Dec. 10th, referred to, called on the Government to interpose, to prevent, if possible, the carrying out of the sentence of death on O'Donnell, on the ground that he had not had a fair trial.

DODGE, William Earl, an American merchant, born in Hartford, Conn., Sept. 4, 1805; died in New York city, Feb. 9, 1883.

The family from which he sprang was English, and the first of the name who emigrated to America was William Dodge, of Dorsetshire. He came to Salem in 1629, and was one of the founders of the Massachusetts Bay Colony. The father of William Earl was David Low Dodge, who had been a successful merchant in Hartford, and removed to New York city in the same year in which his son was born. He retired from business in 1827, and devoted the rest of his life to literary and benevolent work. Several valuable books were published by him; he was a zealous and energetic member of the Presbyterian Church, and was an elder of the old Wall Street Church. His wife was the daughter of Rev. Aaron Cleveland, a minister of some note.

William Earl Dodge entered upon active life as helper to his father, when he was only a boy. In early life he united with the Laight Street Presbyterian Church. On reaching manhood he engaged in business for himself, with a partner, the firm being Huntington & Dodge. Three years later, he married a daughter of Anson G. Phelps, and in 1833 entered into partnership with his father-in-law, the firm being Phelps, Dodge & Co., and he remained one of the senior members until 1879.

Mr. Dodge was one of the first directors of the Erie Railway, and fully appreciated its importance in the near future; but in the case of this as well as of other corporations, he wholly disapproved of compelling Sunday work from the employés, and refused to serve in any board which caused trains to be run on Sunday, or derived profit from Sunday labors. He was one of the founders and promoters of the

Mutual Life Insurance Company. He early became a member of the Chamber of Commerce, and was for three terms chosen to be its president. He was an active manager and friend of

WILLIAM EARL DODGE.

the American Bible Society, was a trustee and benefactor of Union Theological Seminary, and was among the most zealous of the founders of the Union League Club.

In 1844 Mr. Dodge found it necessary to make a voyage to Europe for his health. In 1872 he visited the East, and laid the cornerstone of the Syrian Protestant College at Beyrout. He also visited England in 1881, and made an eloquent and forcible address regarding the English and Foreign Bible Society and its works.

Mr. Dodge devoted both time and money to the support of the Government during the civil war, and was a member of the Thirty-ninth Congress. Later, President Grant appointed him one of the Indian Commissioners, and he visited the Territories, and made himself personally acquainted with the Indian question in all its important phases.

Active, unceasing benevolence and good-will to men marked his whole course. He was specially a friend and helper of the freedmen, and was a patron and benefactor of Lincoln University for colored men. He was President of the National Temperance Society, and aided in establishing in New York a temperance Christian home for men, and also a like home for women. Only ten days before his last, fatal attack he delivered in the Tabernacle, West Thirty-fifth street, an interesting lecture entitled "Recollections of Fifty Years."

Although now considerably beyond three-score years and ten, Mr. Dodge in no wise slacked his efforts to do good. Premonition came, the Saturday before his death, in an attack of angina pectoris. Yet, with undaunted courage, he nerved himself for whatever work was before him to accomplish. On Friday, February 9th, he rose as usual; but the summons had come, and, supported by the arms of his loved ones, he was laid on his bed and passed away. The funeral services were held on the 12th inst., in the Church of the Covenant, Park Avenue, of which congregation he had for fifteen years been an active and honored member.

In addition to unnumbered gifts and charities during his lifetime, Mr. Dodge left by will sums of $50,000, $20,000, and $10,000 to various charitable and educational institutions.

DORÉ, Gustave, a French artist, born in Strasburg, Alsace-Lorraine, Jan. 10, 1833; died in Paris, Jan. 23, 1883. At a very early age he manifested unusual talent and passion for drawing, and was sent to the lyceum of his native city. He was only eleven years old when his first lithographs were published, and excited much attention as coming from a boy of that age. In the following year he accompanied his father to Paris, and was sent to the Charlemagne Lyceum, for the purpose of completing his education and training for the life that seemed to be opening to him. In 1848 he published his first series of sketches, "The Labors of Hercules," which were prepared for the "Journal pour rire." They were so satisfactory, and well adapted to the objects of that journal, that the youthful artist became one of its regular contributors.

At the age of twenty Doré began to exhibit oil-paintings, and the next year (1854) he established his reputation by illustrating the works of Rabelais. He contributed largely to the "Journal pour tous," which was founded in 1856, and that same year he gave to the public a series of charming pictorial commentaries on Balzac's mirthful "Contes Drolatiques," and on the well-known legend of the Wandering Jew. These latter, though having a considerable element of the grotesque, bear the stamp of Holbein and Albert Dürer, together with the quiet humor of Hogarth.

In 1861 he was decorated with the Cross

of the Legion of Honor. His whole time and attention were given to his profession, and he worked with a diligence and executed with a rapidity almost incredible. His drawings and sketches number by the thousands (estimated at 45,000 to 50,000), and, however imperfect and extravagant some of them may be, owing to this dashing style of production, they yet display as a whole genius and power in a high degree.

GUSTAVE DORÉ.

The most prominent of the works illustrated by Doré are those of Montaigne (1857), Taine's "Voyage aux Pyrénées" (1859), Chateaubriand's "Atala" (1862), Tennyson's "Idylls of the King" (1866–'68), and the fables of La Fontaine (1867). In 1861 he published seventy-six large drawings in illustration and exposition of Dante's "Divina Commedia," accompanied by a blank-verse rendering of the text by William Michael Rossetti; and two years later appeared a very remarkable series of folio illustrations to "Don Quixote," which bear the marks of careful study from Spanish life. In 1865 he published his striking illustrations of Milton's "Paradise Lost," and during that and the following year completed a series of illustrative sketches and paintings on scenes and characters in the Bible. Among the oil-paintings exhibited by Doré, and worthy of note, are the "Two Mothers," "Alsatian Women," "A Mountebank with a Stolen Child," and some landscapes. The most noteworthy of his pictures are, scenes from Dante, especially his "Paolo and Francesca di Rimini," the battles of the Alma and Inkerman, in the Crimean War (1855–'57), the "Rebel Angels cast down" (1866), the "Gambling Hall at Baden-Baden," the "Neophyte" (1868), the "Triumph of Christianity," and "Christ leaving the Prætorium," which latter measures thirty feet by twenty.

Doré's popularity was very great, and his works have had a very large sale. There was hardly any subject which he did not undertake, from sublime epics and the sacred scenes and characters of Holy Writ, down to the broadest farce, or nursery and fairy tales. He had all the dash and vivacity of the French race, and he displayed marvelous vigor, imagination, and keen insight in his best works. English critics complain of his deficiency in taste and refinement, his lack of sensibility and deep feeling, and his frequent carelessness and slovenliness. It must be admitted that the criticism is in a measure just; yet at the same time Doré was one of the greatest artists France has ever produced, and has furnished to the world works of high order and unquestionable merit.

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EARTHQUAKES AND VOLCANIC DISTURBANCES IN 1883. The year 1883 witnessed, in addition to at least the usual number of disturbances of ordinary intensity, two memorable and disastrous convulsions in two of the principal seats of volcanic activity remaining on the earth's surface—Southern Italy and the island of Java. A strong earthquake-shock was felt in Sicily early in May, and several others at different times subsequent to the eruption of Mount Etna in March. At Tabriz, in Persia, an earthquake occurred on May 5th, which caused considerable loss of life. One in Mexico, on the 4th of August, caused 20 deaths. A village in Tyrol was badly damaged by another. The shocks in Chios and Asia Minor, the scene of frequent seismic disturbances, were more serious. There were shocks in Cordova, Seville, Cadiz, and throughout Anatolia, on October 24th, which were supposed to be connected with the Anatolian earthquake.

In Ischia.—A shock occurred on the island of Ischia, in the Bay of Naples, at 9.50 P. M. on the 28th of July. The towns of Casamicciola, Forio, and Lacco Ameno were almost entirely destroyed, with terrible loss of life. Serrara, Fontana, and other smaller villages, suffered much damage. The shock was felt in the town of Ischia, where it was severe enough to injure some of the buildings. The vibrations traveled great distances, and were even indicated by the seismograph in Rome. The number of deaths was estimated at from 2,000 to 3,000; the number of persons maimed and injured was about 600.

This island is one of the most attractive bathing resorts in Europe. The resident population is about 26,000, and there are usually several thousand summer visitors; but there were fewer than the ordinary number at the time of the catastrophe. The village of Casamicciola is much visited for its thermal waters. It was only two years since this place was half destroyed by an earthquake, March 4, 1881; but its attractions as a sanitarium and summering place were sufficient to outweigh the dangers.

A pantomime performance was going on in a summer-theatre in front of the large Manzi health establishment, and in the hotels the guests were assembled in the music and reading-rooms, when the catastrophe occurred. In fifteen seconds the village was a heap of ruins. A deafening subterranean roar accompanied the shock, which was followed by slighter vibrations, that brought the tottering buildings to the ground. Those who were not crushed under the ruins, or struck down by falling fragments after gaining the street, rushed with cries of terror to the beach, and, seizing every boat and floating thing, sought safety on the water. In the theatre and hotels every light was extinguished, and blinding clouds of dust enveloped the whole village in darkness. The Établissement Manzi, Grand Hôtel, Villa Sauvet, and Grande Sentinella escaped with comparatively little damage; but the other hotels and boarding-houses, among them the Piccola Sentinella, the favorite inn of English and American visitors, were destroyed, with most of their numerous inmates.

The village of Casamicciola and the landscape surrounding it were so completely obliterated that no feature of the topography could be recognized. The ground was rent with deep cracks several inches wide. Of most of the houses and villas nothing was left but indistinguishable mounds. In some places landslips carried away roads and vineyards.

Firemen and sappers and miners arrived immediately to disinter the dead, and rescue those who were still living under the *débris*. King Humbert came with his staff to encourage and aid the distressed, and public and private relief was extended to the thousands who were deprived of the means of subsistence. In Forio, Lacco, and Serrara hundreds of peasants were killed, and a great number of houses were destroyed. Barano suffered considerable damage. The census of 1881 makes the total number of inhabitants in the island 26,908, of whom 6,574 dwelt in the town of Ischia, which escaped injury. The population of the communes in the main part of the island which were affected was as follows: Forio, 6,791; Barano, 4,598; Casamicciola, 4,217; Serrano-Fontana, 1,972; Lacco Ameno, 1,761.

The island of Ischia is entirely of volcanic formation, with the exception of a number of argillaceous elevations of marine formation. The village of Casamicciola was built upon such a clayey deposit, produced by the disintegration of the tufa of the volcano of Epomeo, which stands in the center of the island. Lacco stands partly upon this tufa, which forms the foundation of the island, and partly upon an overlying deposit of trachytic lava. Forio, on the west coast, as well as the villages in the south of the island, is built upon tufa. The distribution of hot springs, stufas, or jets of steam, and fumaroles on the island indicates the existence of two clefts in the tufa, one extending in a curved east-and-west line near the north coast, and the other crossing the island in a transverse direction. Casamicciola stood at about the intersection of the two lines of fracture. At Casamicciola, Forio, and Lacco Ameno the shock was at first vertical, then undulatory, the wave traveling at Forio from northeast to southwest, at Lacco Ameno from southeast to northwest, and at Casamicciola first from west to east and then from north to south. For several days previous to the earthquake slight shocks, accompanied with rumblings, were perceived. The springs of Gurgitello, near Casamicciola, showed irregularities of flow and temperature. The fumaroles of Monte Cito, south of that village, which are usually almost entirely inactive, gave strong indications of volcanic action, emitting jets of steam and sulphurous acid, and giving forth a strange hissing sound.

The source of the disturbance is supposed to be the expiring volcano of Mount Epomeo, the residual activity of which is manifested in the thermal springs and jets of gas and steam arising through the two fissures. Prof. Palmieri, of Naples, attributed the excessive violence of the shocks at Casamicciola to the existence of great caverns underneath the spot, the supports of which were weakened by the action of thermal waters, and gave way when agitated by the seismic shock. Others explain it on the hypothesis of the two fissures intersecting there, which would make Casamicciola the center of any volcanic disturbance on the island, and upon the theory of Mallet. This theory is, that a seismic wave passing from a comparatively inelastic soil to one of great elasticity changes its direction as well as its velocity, and is partly refracted and partly reflected. East of Casamicciola, between it and Ischia, are the volcanoes of Rotaro and Mon-

tagnone and their trachytic deposits, as well as the lavas of Arso. The wave passing from the inelastic clayey soil into the trachytes was greatly diminished in violence, which explains the slightness of the damage in Ischia, while its recoil was destructive to the buildings of Casamicciola.

Eruption of Etna.—An eruption of Mount Etna began March 20th, attended by ninety-two shocks of earthquake the first day, followed by slighter waves, and then, on the 22d and 23d, by three severe shocks at Nicolisi. The principal crater poured forth a dense cloud of smoke and fine ashes and a column of fire. After the shocks felt at Nicolisi, eleven new mouths opened above that place, which emitted sand, scoriæ, lapilli, and smoke, accompanied by loud roarings. Other shocks were felt, but the new craters, after discharging a great quantity of gas, became quiescent by the 30th. Earthquake convulsions continued intermittently for several days.

Krakatoa Eruption.—The activity of the Javan volcanoes in August produced one of the most terrific and disastrous convulsions of nature known to history. The populous and productive island of Java is, as a seat of volcanic phenomena, remarkable among all the volcanic regions of the globe. There are forty-five active craters on the island, besides those on the adjoining volcanic isles of the Straits of Sunda, the largest of which islands are Krakatoa, opposite the town of Anjer, and Sebocke and Sebesie near the coast of Sumatra. On Krakatoa the Dutch Government maintained a fort and garrison. The other small islands are uninhabited. There are multitudes of hot springs and other forms of volcanic activity besides the volcanoes themselves, notable among which are the mud-volcano at Grobogan, the gas-fountains, called the "holy fires," at Melati Derat, and the Pakaraman or Guiva Upas ("Valley of Death").

Earthquakes and eruptions are of frequent occurrence. The inhabitants experienced several appalling disasters before the crowning catastrophe of 1883.*

On the night of Aug. 26th detonations from the island of Krakatoa were heard at Batavia and as far as Soerakerta, forty-five miles distant. In a few hours showers of stones and ashes began to fall at Jogjakerta, Serang, Sourabaya, and Samarang. Red-hot stones fell all through the night, and ashes shrouded the towns in darkness. In Batavia there were also showers. The bridges were destroyed and all communications cut off with Anjer.

By morning the disturbance had extended beneath the waters of the strait. The sea began to boil and hiss, and huge waves were dashed upon the opposite coast of Java. The temperature of the water rose twenty degrees.

The rumblings became louder and more distinct in Java. At noon an eruption burst from the Maha Meru, the largest of the Javan volcanoes. Gunung, the crater of which is the largest in the world, being four miles in diameter, was soon involved. The eruptions extended to the Gunung Guntur and the minor cones, until more than a third of the active craters were in a state of eruption or gave signs of breaking out.

The Gunung Guntur was wrapped in a luminous cloud just before dusk, and began directly to emit enormous jets of white acid and sulphurous mud, with smaller quantities of lava. Detonations were heard in rapid succession. After each explosion great volumes of ashes and huge pieces of rock were hurled a great distance in the air, and fell in the valleys on all sides, covering the whole country and destroying a vast number of people in their habitations. The sea rose in great banks of water, in response to the outburst of the volcanoes. The clouds were surcharged with electricity, and not fewer than fifteen large water-spouts were witnessed at one time.

The eruption of the Gunung Tengger formed an impressive scene. Above its top, which is 6,000 feet in altitude, stood a towering pillar of flame. This volcano has been dormant since 1800, when an eruption buried 120 square miles of country under a sheet of the white sulphurous mud peculiar to the Javan volcanoes. This crater now sent forth a constant succession of glowing bowlders which hailed down on the dwellings of the Chinese fishermen and native agriculturists, destroying every living thing.

The sides of the mountains opened in long fissures, and great chasms appeared here and there in the valleys. The showers of stones, mud, and lava did not overwhelm the elevated plains of Kediri and Bandong so completely as they did the lower portions of the island. The forests which covered a considerable portion of northern Java were fired by the volcanoes. The fields of coffee, rice, sugar, indigo, and tobacco were covered with mud, stone, and lava. Not a single crop was saved. As the volcanoes became more violent, the sea surged more tumultuously. The lava, as it reached the shore and poured over the crags into the sea, was congealed by the waves in fantastic forms of variegated bright colors.

The large town of Telokbetong, in Sumatra, was submerged by the tidal wave, and annihilated with all its inhabitants. The fortress and settlement of Anjer was overwhelmed by the tidal wave which followed the eruption of Krakatoa, and 200 white people were lost. Of the 3,500 Europeans and Americans in Batavia, several hundred lost their lives; of the 25,000 Chinamen who lived along the shore in front of the town, the greater part were swept

* In 1878 there were sixteen distinct earthquakes registered throughout the island. In 1843 Mount Guntur flung forth 80,000,000 tons of ashes and sand. By the great eruption of Mount Galung-gung in 1822 no fewer than 114 villages were laid waste, and 4,000 persons killed. In 1867 an earthquake caused the death of 1,000 people of the town of Jogjakerta alone. The eruption in 1872 of Merapi, one of the most active of the sixteen principal volcanoes, proved fatal to thousands of the inhabitants of Kadu. In 1879 the Preanger Regencies were convulsed by several severe shocks.

away by the waves. Tjiringin, south of Anjer, on the coast, was destroyed by the waters. Bantam, formerly a prosperous city, but subsequently abandoned by its European and most of its native inhabitants, was entirely submerged, and from 1,200 to 1,500 persons were drowned. The waters covered the island of Serang, on which not a soul was left alive. At Cheribon the falling of stones and flow of lava caused considerable losses of life and property. Buitzenborg, Samarang, Jogjakerta, Sourakerta, Sourabaya, and all the smaller towns were partially destroyed. Some of the "thousand temples" of Brambaman were destroyed, and a number of the domes of the famous temple of Borobodo were crushed by falling rocks.

The volcanic disturbance altered the geographical features of the Straits of Sunda. The great island of Krakatoa disappeared. Between the sunken island and Sebesie emerged sixteen new volcanic peaks. The Soengepan volcano split into five. The mountain of Kramatan, a high peak which formed the southeasterly promontory of Sumatra, sank into the sea. The changes were confined to the portion of the strait lying between this point and Krakatoa, the upheaval in the center of this strip producing a depression at both ends.

Alaskan Volcanoes. — Mount Augustin, near Cook's Inlet, burst into activity in October, and the eruption extended to two volcanoes, lying westward of Mount Iliamna, which were before considered extinct. Flames and smoke, preceded by an explosion, began to issue from the summit of Mount Augustin on the morning of Oct. 6th. The sky was obscured, and pumice ashes fell at the entrance of Cook's Inlet to the depth of five inches. A tidal wave 80 feet high washed upon the shore in the middle of the afternoon, followed by two others 18 feet high. The sky was brilliantly illuminated at night. The northern part of Mount Augustin was torn away by the eruption and leveled to the height of the surrounding cliffs. A new island, 75 feet high and 1½ mile long, appeared between Chernaboura Island and the mainland.

Earthquake in Anatolia.—Severe shocks of earthquake were felt on the 15th of October along the coast of Asiatic Turkey, and on the island of Chios. The town of Aivalik, in Anatolia, was partly destroyed. Great damage was done to the villages between Tchesme and Vourla, and a large number of people were left roofless and without means. The city of Smyrna suffered injury to a slight extent, and the shock was felt also at Syra on the Dardanelles. In Chios a number of buildings were shattered and people wounded. In Vourla, Alateuki, Ovadere, and eight other villages near Tchesme, 57 persons were killed, 150 injured, and 14,678 rendered homeless.

ECUADOR. The modification of the territorial division of this republic, alluded to in the "Annual Cyclopædia" for 1882, proves not to be permanent, as since then the revolution has triumphed, and the dictator, Ignacio de Veintemilla, after whom the new province was named, has fled the country.

The provisional President of Ecuador is Señor José María Plácido Caamaño; the provisional Vice-President is Señor Rafael Perez Pereja.

The new Cabinet at the close of 1883 was composed of the following ministers: Interior and Foreign Affairs, Señor Pablo Herrera; Finance and Public Works, Señor V. Lucio Salazar; War and Navy, Señor Agustin Guerrera.

During the recent civil war and since its termination no later official returns relating to the finances of Ecuador have been published, nor has anything transpired with reference to the foreign debt.

Events of 1883.—After some desultory warfare following the opening campaign and the various engagements between the insurgent forces and those of the Government, from October, 1882, to January, 1883, chronicled in the "Annual Cyclopædia" for 1882, the former had gradually repelled the latter and ejected them from Guayaquil, and in April, 1883, had gathered at Guaranda, Babahoyo, Machala, Santa Rosa, and Manabi, thus forming a vast semicircle hemming in Guayaquil. Meanwhile the provisional Government at Quito declared Machala, south of Guayaquil, a port of entry, reducing the import duties there by 25 per cent. and the export duty by 50 per cent.

Early in May the combined insurgent or constitutional forces made a forward movement on Guayaquil, Gen. Alfaro's besieging army pressing from the west, while Generals Barona and Flores came forward from the north, Generals Salazar, Sarasti, and Landázuri from the east, and Generals Secundino, Darguea, and Medina moving onward from the south. A concentration for siege operations took place at Mapasingue.

On May 3d the Italian war-steamer Vittor Pisani approached the insurgents' camp, and the commander requested its captain to protect the lives of Italians and other foreigners in the event of an assault on the besieged city, which was promised him.

Representatives of Veintemilla under a military escort took, on May 8th, forcible possession of $320,000 on deposit in the vaults of the Bank of Ecuador, Guayaquil, despite the protests of foreign consuls and the commanders of British and Italian men-of-war.

On May 15th Señor Antonio Flores, son of the first President of Ecuador, arrived at Guayaquil. He had been exiled by Veintemilla, and on his arrival the latter proceeded to arrest him, but was prevented by the commander of the British sloop of war in the harbor, who sent some boats with crews to protect Flores.

Being foiled in this attempt, Veintemilla made offers to Flores to resign into his hands the dictatorship, provided Flores would continue to oppose the Constitutionals and assist Veintemilla in pacifying the country. These offers were declined by Flores, who, on the

contrary, chose to join the insurgents. The commander of the Constance thereupon placed a boat at his disposal, which landed him at Sambarondon, one of the camps of the latter.

The besieging forces, 5,000 men strong, approached the fortifications of the city on May 22d. Some shots were exchanged, and the next day shells were thrown into the place. Veintemilla took part in the defense, and exposed himself fearlessly on the ramparts. His force numbered 3,000 bayonets, and he had 60 pieces of artillery in position.

On May 26th–27th the besieging forces temporarily withdrew from the immediate approaches, while the Colombian generals in the insurgents' camp, Generals Sarmiento and Montujar, proceeded to Ipalio to observe the movements of Veintemilla.

On June 3d the assailants again approached the city, and a lively cannonade was opened on it, followed by an attack on Forts Manicomio, Salado, and Puerto de Lisa, the northwestern portion of the fortifications. After the firing ceased, on June 4th, a summons to surrender at discretion was forwarded to Veintemilla, but rejected by him.

During the lull in siege operations which now occurred, Veintemilla was busy in perfecting his intrenchments.

On June 13th there was a general panic in Guayaquil, in consequence of the disorderly conduct of the garrison.

On June 19th an earthquake shook down the church and curacy of the village of Toacaso, in the interior of Ecuador. The other houses resisted the first shock, but a second shock took place about midnight, which destroyed every house. The ground opened in many places, and during the night sixteen shocks were counted.

About this time a gang of bandits paid a visit to the towns of Manta and Montecristi, where they murdered several persons and plundered a large amount. Some of the citizens resisted, and several of them were killed.

On July 9th, before daylight, the assailing army at Mapasingue advanced on Guayaquil in six divisions, and, after a two-hours' struggle, Gen. Reinaldo Flores and his brother Antonio at the head of their troops had taken the most important points by storm. The resistance was generally feeble, but the main fort held out vigorously. The townspeople received the troops with enthusiasm.

Veintemilla, accompanied by a number of officers and 200 soldiers, now fled, being conveyed to Payta, Peru, on board the steamer Santa Lucia, whence he sailed for Callao on July 21st, and thence reached Lima.

Alfaro at once organized a municipality, and on July 25th the people of Guayaquil spontaneously proclaimed Pedro Carbo chief of the government there. Meanwhile the three insurgent governments agreed to convoke a national convention; these three governments were: that of Alfaro, whose power extended along the coast (Manabí and Esmeraldas), the government of Guayaquil under Pedro Carbo, and the one at Quito. Hence a decree was issued to the effect that delegates should assemble at Ambato, on October 9th, to elect a provisional President and Vice-President.

On August 6th Miguel Valverde was appointed a member of Alfaro's Cabinet as successor of Señor Semblantes, deceased.

On August 10th Gen. Alfaro left for Manta with 1,000 troops and several guns, on the plea that provisions were wanting at Guayaquil for so many troops; simultaneously Sarasti left with a force likewise, each taking with him $100,000 raised on the spot. The motives of both were alleged to be political.

During the last week in August, earthquakes were felt at Manabí, Ecuador. Detonations were heard there, inducing the belief that fighting was going on in the neighborhood; troops were turned out ready to meet the supposed enemy. On September 2d the sun at Guayaquil was discolored.

Gen. Alfaro before his departure made a contract with Mr. M. J. Kelly, an American, for the construction of about 800 miles of telegraph to connect Bahia, Manta, and Esmeraldas, and other important towns in the lower provinces, with Guayaquil and the cable line.

The convention met on the day designated, 63 members being present, who, on October 15th, elected as provisional President of Ecuador, José María Plácido Caamaño, of Guayaquil, and provisional Vice-President, Rafael Perez Pareja, of Quito.

In the mean time, on account of old age, Don Pedro Carbo resigned his governorship of Guayaquil.

The convention before it dissolved declared in force the Constitution of 1861, and passed a bill for the encouragement of viticulture in Ecuador. This law exempts from all taxes whatsoever, both national and local, those who plant their acres with vines, and it furthermore liberates from military service, in the national army and the militia, all laborers working in vineyards, in the proportion of one thus privileged field-laborer for every two and a half acres of vineyard.

During the first week in December the ground opened in many places at Chimbo, a little village in Ecuador, forty-five miles from Chimborazo; smoke and flames rushed out, and lava and ashes were ejected. It was believed that a new volcano was in course of formation. The whole range in which the eruption has occurred is intensely volcanic.

On December 14th Gen. Eloy Alfaro arrived at Panamá from Guayaquil.

Climate and Resources.—The rainy season generally lasts from December to June, the remaining months being dry; but on the Amazon slope it rains all the year round. As to the influence of the climate on man, there are vast healthful districts in the river valleys of the Amazon region, while those of the Pacific

shore are commonly full of disease. Special disorders are due to the lack of sanitary measures. In the western and northwestern parts the abuse of sweets as food results in a curious and frightful intestinal complaint. The country is almost wholly agricultural, the Pacific coast and river valleys of both east and west yielding generous crops of cocoa, cotton, sugar-cane, rice, coffee, tobacco, and tropical fruits, while the inter-Andean plateau produces all the cereals and vegetables incident to a temperate and even cold climate, though they are of inferior quality. Cattle do not thrive in the Amazon section, chiefly from the immense number of bats which irritate them.

Cinchona-bark, which first came from the province of Loja, is being so rapidly cut and sent out of the country, without new planting, that the supply must soon cease.

Population.—The population is estimated at 1,000,000 (exclusive of savage tribes), and is distributed as follows: white, 100,000; mixed, 300,000; pure Indian, 600,000. The evil qualities of the mixed races are condemned as the source of the degradation of the country.

Internal Communications.—Internal communications are much needed in Ecuador, and, although Col. Church is personally interested in the construction of future railroads, he expresses his strong opinion that for the next ten or twenty years a thorough system of first-class mule routes would undoubtedly be best.

Railroads.—The railway from Yaguachi to the river Chimbo is finished; 77 miles are thus in operation.

Telegraphs.—Ecuador has been in communication with the world's cable system since Oct. 1, 1882, through the land line from Guayaquil to Ballenita, whence the Central and South American Telegraph Company forwards the messages *via* Tehuantepec, Galveston, etc.

Commerce.—There entered the port of Guayaquil, in 1882, 212 vessels (112 of which were steamers), of a total tonnage of 125,294, counting coasting schooners and sloops.

Exports amounted in 1882 to $5,469,793, comprising 21,377,200 pounds of cocoa, worth $3,867,896; cinchona or cascarilla bark (quinine), $319,950; tagua or vegetable ivory, $418,600; India-rubber, $1,045,703; straw (Jipijapa) hats, coffee, hides and skins, etc., making up the rest.

Cocoa Production.—The production of cocoa has been disastrously affected by the civil war, and, as Ecuador furnishes more of the article than any other country, the price has been enhanced in consequence all over the world. The December (1883) receipts at Guayaquil were only 10,500 quintals, and the price of Arriba cocoa advanced on Dec. 31, 1883, to $19 per quintal of 100 pounds Spanish (101½ pounds American). The cocoa crop for five years has been:

	Quintals.		Quintals.
1879	302,490	1882	196,580
1880	332,990	1883	146,700
1881	207,280		

EGYPT, a principality of Northern Africa, tributary to Turkey. Mehemet Ali, the governor, rebelled against the Porte in 1811 and assumed the powers of government. In 1841 he was recognized, under the guarantee of the five great powers of Europe, as Vali, or Viceroy, and the sovereign authority was made hereditary under the Turkish law of succession. In 1866 Ismail obtained a firman creating him Khedive, or King, and establishing direct male succession by primogeniture, in return for which concessions he submitted to the increase of the annual contribution to the Sultan's civil list from $1,880,000 to $3,600,000. By another firman, issued in 1873, he obtained the rights of concluding treaties and maintaining an army. In August, 1879, the Sultan was induced to depose Ismail I, who was involved in financial difficulties. His son Tewfik was placed on the throne, and the government was administered under the supervision of two Controllers-General, appointed one by the French and one by the British Government, who were given the right of investigation into all departments of the public service and an advisory voice at the councils of the Cabinet. By a second decree of the Khedive, issued April 5, 1880, an International Commission of Liquidation was appointed to elaborate a financial law to regulate the relations of Egypt with her creditors. The scheme, consolidating the foreign debts, fixing the interest at 4 per cent., and reserving certain revenues to meet it, was sanctioned by the Khedive in 1881. That same year a political movement was set on foot to deprive the Controllers of the extraordinary powers they had assumed over legislation and administration, and place the powers of government in native hands. The French and English Governments refused to accede to the demand, in the beginning of 1882, for the transfer of legislative powers to a Chamber of Notables. The movement, which was accompanied by military preparations, was treated as a military rebellion. The British Government sent an army to occupy Egypt, the French Government declining to join in the intervention. The Egyptian army under Arabi Pasha resisted the occupation, and was finally subdued in September, 1882. It was then disbanded, and English officers were intrusted with the tasks of organizing a new military establishment and a gendarmerie, while the Earl of Dufferin, British embassador at Constantinople, was sent to Egypt to work out a scheme for the reform and reorganization of the Government.

The Government.—The reigning Khedive is Mehemet Tewfik, son of Ismail I, who was born in 1852, and succeeded his father Aug. 8, 1879. The ministry at the beginning of 1883 consisted of the following-named persons: President and Minister of Foreign Affairs, Sherif Pasha; Minister of the Interior, Riaz Pasha; Minister of War and Marine, Omar Pasha

Lutfi; Minister of Public Works, Ali Mubarek Pasha; Minister of Finance, Haidar Pasha; Minister of Public Instruction, Khairz Pasha; Minister of Justice, Fakhri Pasha; Minister of Vakufs, Zeki Pasha; Minister for the Soudan, Ismail Ayub Pasha.

Lord Dufferin, special commissioner of the British Government, after working out a comprehensive scheme of legislative, judicial, and administrative reform, returned to his post in Constantinople in the beginning of May, 1883. After the abolition of the dual control by a khedivial decree, Sir Auckland Colvin was appointed financial adviser to the Khedive. A Council of State, composed partly of natives and partly of Europeans, was created in September. In the same month Sir Edward Malet was succeeded by Sir Evelyn Baring in the post of British diplomatic agent and consul-general. Sir Auckland Colvin was replaced by E. Vincent as European financial adviser to the Khedive. Clifford Lloyd was at the same time appointed adviser to the Minister of the Interior. On Nov. 22d, M. Camille Barrère presented his credentials as French diplomatic agent and consul-general.

After the destruction of the Soudan army, the Egyptian Government, unable to agree to the British proposition to evacuate a part of the Soudan and cede territory on the Red sea to Abyssinia, gave in their resignations. A new Cabinet was constituted by Nubar Pasha.

Area and Population.—The area of Egypt proper is about 210,000 square miles. The population in 1877 was stated in an official estimate to be 5,517,627, of which number 569,115 resided in the Mohafzas, or town districts, having an aggregate area of 176,546 square kilometres, and 4,948,512 in the Moudiriehs, or provincial districts, 844,808 square kilometres in extent. The number of births registered in 1877 was 173,529; of deaths, 138,668. The net immigration from 1873 to 1877 was 19,241. The number of foreigners residing in Egypt in 1878 was returned as 68,653, of whom 29,963 were Greeks, 14,524 Italians, 14,310 French, 3,795 English, and 6,061 of other nationalities.

An enumeration conducted in 1883 gives the total native population of Egypt proper as 6,798,230, of whom 3,393,918 were males and 3,404,312 females.

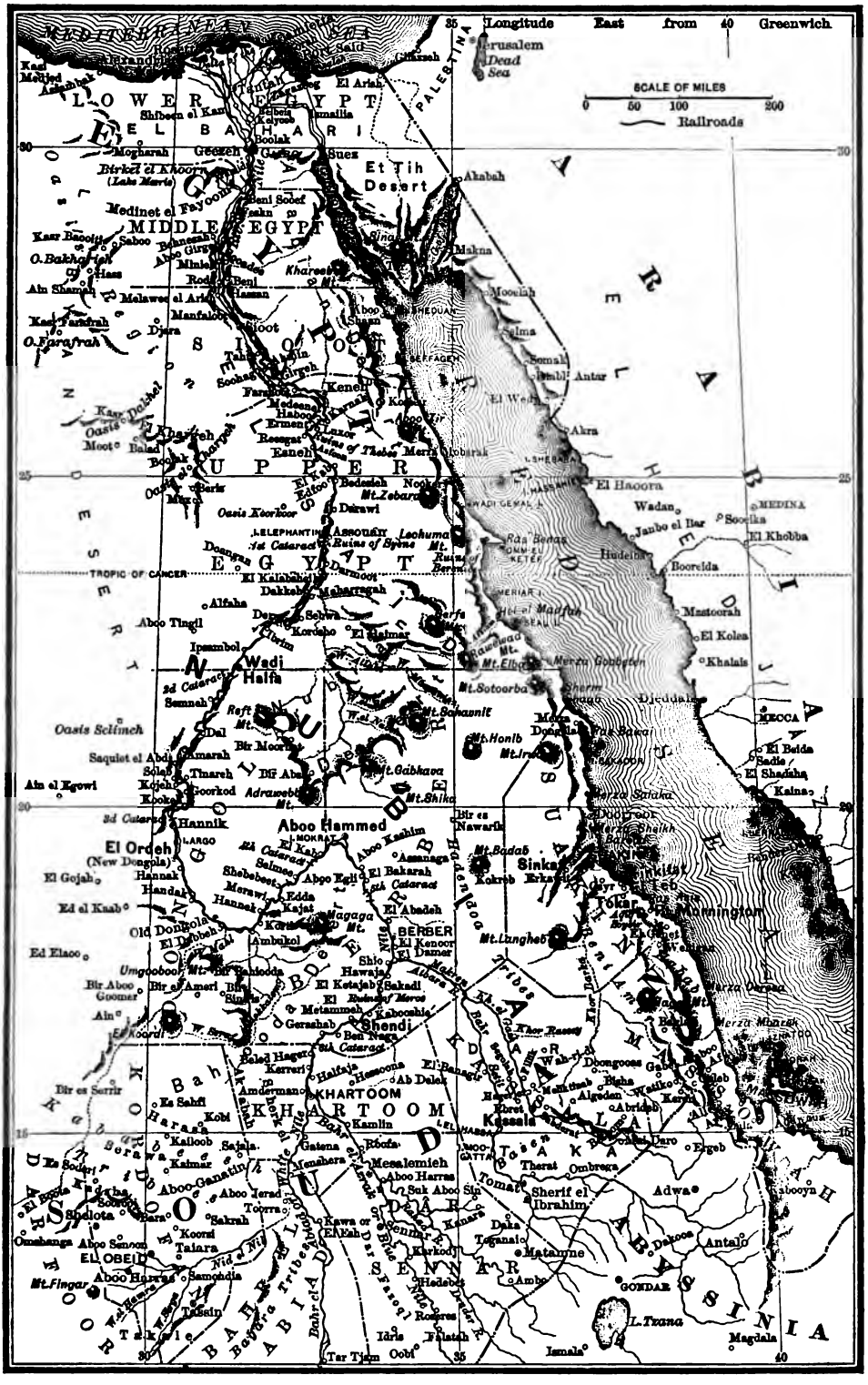
The population of the principal towns in 1883 was as follows: Cairo, 368,108; Alexandria, 208,775; Tanta, 38,725; Damietta, 34,036; Mansura, 26,784; Zagazig, 19,046; Rosetta, 16,671; Port Said, 16,560; Suez, 10,913.

The population of the three geographical districts into which Egypt proper has from ancient times been divided was as follows in 1877, not including the population of the town districts, amounting to 569,115: Lower Egypt, 2,823,995; Middle Egypt, 653,119; Upper Egypt, 1,471,398. The whole country is divided into eleven administrative provinces.

The Soudan.—The conquered and annexed districts on the Upper Nile and in Central Africa are known collectively as the Egyptian Soudan. They form a single administrative district, and since Arabi's revolt have been placed in charge of a special ministry. The Soudan proper is divided from Egypt by a belt of desert, and is not easily accessible by water on account of the deposits and growths which frequently obstruct the Nile. The inhabitants of the Upper Nile region are distinct in race from the Egyptians. The conquest of this region was begun by Mehemet Ali, who annexed Sennaar and Kordofan. The same policy was pursued by his successors, especially Ismail Pasha, who, urged on by Europeans who wished to obtain commercial profits from this country, or were interested in the suppression of the slave-trade, or the exploration of the sources of the Nile, added the province of Darfour to his dominions in 1869, and subsequently the equatorial province, extending to the border of King Mtesa's empire of Uganda. The annexation of Darfour was only nominal as long as the power of Sebehr* remained unbroken. Suleiman, Sebehr's son, who rebelled openly in 1878 after his father's arrest, was finally overthrown by Yussuf Pasha and Romolo Gessi, Gen. Gordon's Italian assistant. "Chinese" Gordon, who was clothed with unlimited discretionary power, was more successful than his predecessor, Sir Samuel Baker, in maintaining the authority of the Khedive. But the Arab colonies of Darfour and the desert, and the warlike negro races of the rest of the Soudan, profoundly dissatisfied with the extortionate and corrupt rule of the effeminate Egyptians, were ready to oppose a desperate resistance to the proposed abolition of slavery. Gordon's pacification of Darfour and the Nile country was only superficial, and, notwithstanding the ascendency and popularity which he acquired among a large part of the population, he left more dangerous elements of discontent than existed before his coming. The inhabitants of Bahr Gazelle and Gondokoro are more nearly akin to the Egyptians, and have always proved more tractable than the black races of the Soudan.

The whole of Upper Egypt, comprising Kordofan, Sennaar, Darfour, Berber, Suakim, Shendy, Bahr Gazelle, and all the region between Wady Halfa and Abyssinia and Uganda, from the Red sea to the Libyan desert, was united in 1877 into one administrative district under the name of the Soudan. This country is surrounded on three sides by deserts. Its length is 1,640 miles, and its average breadth 660 miles. The population is about 40,000,000, of which number 10,000,000 are not under the

* Sebehr was a slave-dealer who resisted the anti-slavery designs of Ismail and the British officers placed by him in command in the Soudan. The khedive formed an alliance with Sebehr, who had established a formidable military power, for the conquest of the independent sultan of Darfour. Sebehr went to Cairo with the expectation of bribing the pashas to get his sovereignty recognized, but he was arrested and kept in retirement at Cairo until his services were employed in 1883 against the Mahdi.


Longitude East from Greenwich
SCALE OF MILES
0 50 100 200
Railroads
MEDITERRANEAN SEA
Port Said
Alexandria
Rosetta
El Arish
Jerusalem
Dead Sea
PALESTINA
LOWER EGYPT
EL BAHARI
Shibeen el Kam
Belbeis
Kelyoob
Ismailia
Boolak
Geezeh
Cairo
Suez
Moghara
Birket el Khoorn (Lake Moeris)
Medinet el Fayoom
Et Tih Desert
Akabah
Beni Soocf
MIDDLE EGYPT
Kasr Bacoiti
Saboo
Behneseh
O. Bakhariah
Aboo Girge
Minieh
Hass
Ain Shamah
Roda
Beni Hassan
Melawee el Arish
Manfaloot
Kasr Farafrah
O. Farafrah
Djara
Siout
Makna
Moosiah
Aboo Shaar
SHEDUAN
SEFFAGEH
Tahta
Soohag
Girgeh
Farshoot
Keneh
Koseir
Medeenet Haboo
Ermen
Luxor
Ruins of Thebes
Esneh
Kasr Dakhel
Oasis Dakhel
El Khargeh
Oasis El Khargeh
Mooto
Balad
Boolak
UPPER EGYPT
El Kab
Edfoo
Bedesieh
Mt. Zebara
Nooker
Beris
Maxo
Oasis Koorkoor
Darawi
ELEPHANTINE
Assouan
1st Cataract
Ruins of Syene
Lechuma Mt.
Ruins of Berenice
Doongass
Darmoot
TROPIC OF CANCER
El Kalabsheh
Dakkeh
Maharragah
Alfaha
Aboo Tingil
Derr
Sebwa
Korosko
El Haimar
Ipsambol
NUBIA
Wadi Halfa
2d Cataract
Semneh
Oasis Selimeh
Reft Mt.
Dal
Bir Moorat
Mt. Sahaunit
Mt. Honib
Mt. Irab
Saquiet el Abd
Amarah
Soleb
Tinareh
Bir Aba
Mt. Gabhava
Ain el Kgowi
Kojeh
Koorkod
Adraweb Mt.
Mt. Shika
3d Cataract
Hannik
Aboo Hammed
Bir es Nawarik
El Ordeh (New Dongola)
LARGO
4th Cataract
El Kab
MOKRAT
Aboo Kashim
El Gojab
Hannak
Shebebeet
Selmee
Aboo Egli
El Bakarah
5th Cataract
Assanaga
Mt. Badab
Sinkat
Kokreb
Erkawit
Handak
Merawi
Hannek
Edda
Kajat
Magaga Mt.
El Abadeh
Tokar
Mornington
Ed el Kaab
Old Dongola
El Debbeh
Korti
Ambukol
BERBER
El Kenoor
El Damer
Mt. Lungheb
Ed Elaoo
Umgooboor
Mt. Bir Bahiodda
Shio
Hawaja
Bir Aboo Goomer
Bir el Ameri
El Ketajab
Sakadi
Ain
Sinkis
El Ruins of Meroe
Metammeh
Kaboschie
Gerashab
Shendi
Ben Naga
6th Cataract
Atbara R.
El Koordi
KORDOFAN
Beled Hagere
Kerreri
El Banagir
Halfaja
Hessoona
Ab Delek
Bir es Serrir
Amdermano
KHARTOOM
Kamlin
Es Sahfi
Kobi
Bahr el Azrak
Kassala
Harasa
Kalloob
Sajala
Gatena
Rofa'a
Mesalemieh
Wadi Medina
Kaimar
Aboo Harras
Suk Aboo Sin
Aboo Ganatin
Aboo Jerad
Toorra
Es Sodieri
Shelota
Bara
Sakrah
Kawa or El Eah
Sennar
Omshanga
Aboo Senoon
Koorsi
Taiara
Karkodj
EL OBEID
Nid el Nil
Mt. Fingar
Aboo Harras
Samodhia
Hedebet
Tassin
Bahr el Abiad
Baggara Tribes
SENNAR
Rosares
Idris
Oobi
Falatah
Tar Tiam
Dar Fazogl
Tekele
Blue Nile
White Nile
Dinder R.
Ambo
Taka
Therat
Ombrega
Sherif el Ibrahim
Daka
Toganaio
Matamme
GONDAR
L. Tzana
Ismala
Adwa
Dakoos
Antalo
Magdala
ABYSSINIA
Ergeb
Daro
Abridah
Algeden
Bisha
Doongooss
Wah-el-Ri
Kerem
Ghab
Massowa
HABAB
ARABIA
Akra
Tebhi Antar
El Wedj
SHERARA
El Haoora
Wadan
Janbo el Bar
MEDINA
Sookia
El Khobba
Hudeibe
Booreida
Ras Benas
OMM-EL-KETEF
MERIAR
Mt. Elba
Mersa Gobbeten
Mastoorah
El Kolea
Khalais
Mt. Sotoorba
Djeddah
MECCA
El Beida
Sadie
El Shadaha
Kaina
Sherm Haga
Mersa Dongolab
Ras Rawai
SAKADOR
Mersa Salaka
Doorroor
Mersa Sheikh Barud
Suakin
Mersa Dorota
Mersa Mobarek
Kaboon
WADI GEMAL
SESAB I
Heb-el Madfah
Rawelwad Mt.
30
35
40
25
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15

control of Egyptian officials, and are only nominally subject to the Khedive.

The desert regions are inhabited by Arab tribes, whose chief occupation is breeding camels. The Haddendowas, who inhabit the mountains of the coast, speak a peculiar language which is not Arabic. The Bishareens live in the Nubian desert. Various other tribes occupy the Blue Nile and Atbara regions. The camel is the only means of transportation across the Nubian desert between Egypt proper and the Soudan. The inhabitants of Sennaar are a peculiar race, but several other tribes, each governed by its sheik, subject to the authority of the mudir of the district, inhabit the region between the Blue and White Niles.

The revenue of the Soudan is collected by the aid of troops through the mudirs and sheiks, who extort more than double the legal taxes. There are numerous indirect taxes, besides the poll-tax, and a direct tax on every head of live-stock.

Slavery is universal throughout the Soudan. About seven eighths of the population are slaves. Their lot is not severe, and the force of custom is generally stronger than the desire for emancipation. The soldiers of the Egyptian army with which the rule in the Soudan is maintained, and the black troops stationed in Lower Egypt, are liberated slaves. The army of Sebehr was composed, and that of the Mahdi is now made up, in great part, of the same material.

The products of the Soudan are various, and some of them are valuable articles of commerce. The Arabs of the desert grow sheep and goats as well as camels. The mountains between Suakim and Berber are covered in many places with senna. The chief supply of gum-arabic comes from Kordofan and the regions between the Atbara and Settite rivers, where it is produced in the finest quality by the thorny mimosas which grow in thickets. Along the upper course of the Atbara, south of Cassala, and in the country between there and the Blue Nile, the dhurra-corn is so prolific that a camel's load (500 pounds) costs less than a dollar. Sesame, from which oil is extracted, a kind of millet called dochan, and cotton are the other cultivated products. This region, from Cassala through the ancient Meroe, Sennaar, and on the borders of all the affluents of the Nile, is capable of producing sugar, spices, and all kinds of tropical plants, and is peculiarly adapted to the cultivation of cotton, as the rain falls profusely from May to September, after which there is neither rain nor dew. Wheat is grown south of Khartoum. Ivory and India-rubber are brought from the Central African provinces on the White Nile. Feathers come from the distant equatorial regions. The feather, ivory, and senna trades are particularly affected by the interference with the slave-trade.

Finances.—The total receipts for 1880, when the first budget of the International Commission of Liquidation was adopted, were 8,561,622 Egyptian pounds (the Egyptian pound is approximately equivalent to $5), and the total expenditures 7,911,622 pounds. The budget for 1881 estimated the revenue at 8,419,421 pounds, and the expenditure at 8,308,870 pounds. The actual receipts were 9,229,965 pounds, and the expenditures 8,377,423 pounds, leaving a surplus of 852,542 pounds. The budget for 1882 estimated the revenues affected to the public debt as 4,377,225 Egyptian pounds, and the expenditures as 4,097,100 pounds, leaving a surplus of 280,125 applicable to the sinking fund. The service of the privileged debt required 1,159,212 pounds, the unified debt, 2,223,927; total debt charge, 3,383,139 pounds. The budget of non-affected revenues placed the receipts available for the administration of the Government at 4,336,223 Egyptian pounds, and the expenditures at 4,366,868 pounds. A supplementary budget provides for the employment of the expected surplus over the estimates, amounting to 540,000 pounds.

The provisional estimates for 1883 calculated the total receipts at 9,012,010 Egyptian pounds, and the total expenditures at 7,677,806 Egyptian pounds. The ordinary budget for that year states the receipts as 8,419,421 Egyptian pounds, and the expenditures as 8,308,870 Egyptian pounds. The estimated yield of the main sources of revenue in 1883 was, in pounds sterling, as follows:

SOURCES OF REVENUE.	Amount.
Land-tax, and other direct taxes	£5,367,684
Indirect taxes (comprising customs, post, and octroi receipts)	1,854,294
Railroads and telegraphs	1,193,545
Miscellaneous receipts	389,104
Total revenue of 1883	£8,804,627

The amounts required in 1883 to meet the foreign obligations and the estimated requirements of the Government were as follow, in pounds sterling:

EXPENDITURES.	Amount.
Turkish tribute	£678,897
Public debt	3,748,164
Administration of the government	4,155,857
Total expenditure of 1883	£8,581,918

The result of the first year of British protection and control was to embarrass the finances to an extent unknown in the worst years of misfortune and mismanagement. To a deficit of £191,000 in 1882, was added one of £250,000 in 1883, which, with an additional Soudan expenditure of probably £500,000, the cost of the army of occupation amounting to £600,000, the Domains and Daira deficits of £400,000, and the indemnities awarded for destruction of property in Alexandria and elsewhere, created a floating debt of nearly £6,000,000. A new loan to cover this would have to be added to the crushing public debt, which was the main cause of Egyptian troubles, before the first step could be taken to carry out the expensive reconstructive reforms which were promised by the English.

The state of the public debt on Jan. 1, 1882, is shown in the following statement of the amounts of the different classes of loans, in pounds sterling:

CLASSES OF DEBT.	Amount.
Unified debt, at 4 per cent	£57,023,780
Privileged debt, at 5 per cent	22,529,800
Domain loan, at 5 per cent	8,362,280
Daira-Sanieh debt, at 4 and 5 per cent	9,245,360
Total foreign debt	£97,161,220

The Moukabalah debt, a forced loan imposed upon the peasantry and scaled down by the Liquidation Commission, constitutes another obligation of the Government. The reduced capital and interest is to be paid in annuities of 150,000 Egyptian pounds, and extinguished in fifty years. The interest on the Suez-canal shares purchased by the English Government of the Khedive Ismail in 1875, is an additional charge of £200,000 sterling per annum.

(An account of the Suez canal, and the controversy relating to its improvement, is given under the title SUEZ CANAL.)

Commerce.—The total exports of Egypt increased in value from 275,000,000 piastres in 1855 (1 piastre = 5 cents) and 506,000,000 in 1862, to 1,028,000,000 in 1870, 1,333,000,000 in 1875, 1,356,000,000 in 1876, 1,275,000,000 in 1877, 810,000,000 in 1878, 1,344,000,000 in 1879, and 1,298,000,000 in 1880.

The export and import commerce with the countries having the largest trade with Egypt was in 1881 of the following values, in piastres:

COUNTRIES.	Exports.	Imports.
Great Britain	823,459,000	361,740,000
France	115,486,000	118,945,000
Austria-Hungary	46,594,000	91,946,000
Italy	78,308,000	29,155,000
Turkey	40,495,000	15,489,000
Russia	168,641,000	18,888,000
America	4,946,000	14,495,000
Greece	10,105,000	1,778,000
Other countries	15,166,000	46,814,000
Total commerce	1,298,250,000	698,745,000

The values exported of the leading articles of export in 1881 were, in piastres, as follow:

EXPORTS.	Value.
Textile materials	894,175,000
Cotton-seed	150,659,000
Cereals	142,369,000
Sugar	80,870,000
Gums, fats, and oils	26,808,000
Hides and skins	13,867,000
Ostrich-feathers	6,549,000
Other commodities	83,459,000
Total exports	1,298,251,000

The principal imports were textile fabrics, coal, metal manufactures, machinery, and other manufactured products. The total tonnage entered at Egyptian ports in 1880 was 3,242,022 tons; cleared, 3,255,614 tons. Of the 8,882 vessels entered, 3,657, of 294,183 tons, carried the Egyptian flag, including 257 steamers, of 177,011 tons.

Communications.—The length of railroad lines in operation in 1883 was 1,518 kilometres. The length of telegraph lines in operation in 1878 was 7,841 kilometres; of wires, 12,040 kilometres. Of the total length of lines 3,943 kilometres were in the Soudan.

Diplomatic Discussions.—The year opened in the midst of a controversy between the British and French Governments over the abolition of the dual control and the termination of the Anglo-French condominion. Great Britain sought to soften the disappointment of France and render less abrupt the transition to British sole supremacy by instituting a Public Debt Commission to replace the Control as the agency for the protection of the bondholders' interests. The presidency of the proposed board was offered to France. M. Duclerc rejected the proffered compensation, as the French were not disposed to resign voluntarily their prescriptive powers in Egypt or participate in changing the *status quo* to their own prejudice. In his note of January 4th, he demanded that France should receive, in case the control should be transformed, an equivalent position in the new arrangements. Here the negotiations terminated. Lord Granville then sent an identical note to all the powers, defining the English position and intentions.

The dual control came to an end by the withdrawal of two of the contracting powers from the financial arrangements on which it was based. The initiative came ostensibly from the Egyptian ministry. On January 11th Sir Auckland Colvin, the English Controller, tendered his resignation to the Khedive. The proposition of the Egyptian ministry to abolish the Control had been received two months before. Sherif Pasha, in his note dated Nov. 7, 1882, based his objections to the institution chiefly on the fact that it had taken on "almost a political character," encroaching in dangerous proportions on the authority of the Government of the country, while it is not intended to form a guarantee to the bondholders, who already possess special guarantees. On January 25th Earl Granville sent an answer to M. Duclerc's note, in which he proved that the Anglo-French Control was not based upon international agreements, but upon a simple ordinance of the Khedive Ismail, and that its re-establishment in 1879 by mutual agreement of the three powers revived only its former qualities, and did not constitute an international engagement, revocable only with the consent of England and France. Lord Granville's circular premised the unwillingness of other powers to join in the suppression of the military rebellion, which threw the task upon England alone. It announced the intention of withdrawing the British army of occupation as soon as order should be established. In the mean time it would be necessary to impart advice to the Khedive regarding internal and foreign affairs for the purpose of securing a new order which should be permanent and satisfactory. With regard to those matters which are affected by international rights and

agreements, it proposed, first, new regulations to secure the future neutrality and inviolability of the Suez canal.* Its occupation by the British and use as a base of operations against Arabi was asserted to have been no violation of the neutrality of the canal, being intended to vindicate the authority of the Khedive. For the future it was proposed that the canal should be free to all ships at all times; that in time of war naval vessels of a belligerent power should not be allowed to remain in the canal longer than a certain limited time, and that no troops or munitions of war should be debarked; that no hostilities should be permitted in the canal or its approaches, or within the territorial waters of Egypt, even though Turkey should be one of the belligerents. These restrictions, however, are not applicable to measures necessary for the defense of Egypt. It is further provided that each power shall repair any damage committed by its belligerent vessels in the canal. No fortifications are to be constructed on the canal or its approaches. The enforcement of the regulations is made incumbent upon Egypt. The proposals for a new system of financial control were declared to be not yet matured. The consent of the powers was asked to an alteration of the capitulations which would allow the Egyptian Government to tax foreign residents equally with natives; also to the prolongation of the mixed tribunals for one year only, in the hope that an amendment of the Egyptian code and procedure would then warrant their abolition.† With regard to internal matters which had not been made the subject of international agreement, the British Government announced the organization of a force of gendarmerie and police, distinct from the army, for the preservation of domestic order; and that the army, which should be kept small, would, at the request of the Khedive, be officered in the higher posts in part by English soldiers. On the question of the development of political institutions, the British Government indicated the intention of establishing representative government with prudent checks, in some form adapted to the present political intelligence of the people, and calculated to aid in their future progress.

While the other European governments acquiesced in the position of Great Britain in Egypt, and at times assumed a tone which seemed to favor the establishment of a permanent protectorate, France preserved an attitude of protest and expectancy. When the controversy with M. de Lesseps came up, regarding the construction of a second Suez canal, the French Cabinet manifested a determination not to allow the rights secured to the French company by concessions to be annulled. The Turkish Government also manifested a jealous anxiety for the sovereign rights of the Sultan in Egypt. After the disaster to the army of Gen. Hicks in the Soudan, and the indication on the part of the English Government of a desire to abandon the Soudan, suggestions were made of an intervention by France, while the Porte made an express proposition to send a Turkish force to the Soudan to quell the rebellion.

The Army of Occupation.—The British Government gave reiterated assurances during the earlier part of the year that the British forces would be withdrawn as soon as the Khedive's Government was reorganized on a basis insuring internal peace and stability. They evinced the sincerity of their declarations by recalling the troops, which numbered about 12,000 in the beginning of 1883, until in September only 6,750 remained, and continuing the reduction until in November the garrisons numbered only about 3,000. In the summer, Lieut.-Gen. Stephenson succeeded Sir Archibald Alison in the command of the army of occupation. There were manifestations of anti-European feeling, which increased in frequence and bitterness, and the Egyptian demands for the evacuation became more general and urgent. In addition to the other objections to the continued occupation, was that of the financial burden it imposed on the Egyptian people. The British Government required the country to pay £4 a month for every soldier, which was represented to be the difference in the cost of maintaining them there and in Great Britain. When the news of the destruction of Hicks Pasha's Soudan army arrived, the preparations for the further withdrawal of the British troops were suspended.

Financial Adviser.—Sir Auckland Colvin, previously British Controller, was appointed Financial Counselor to the Khedive, by a decree promulgated February 6th. This office, destined to take the place of the dual control, was defined by Sherif Pasha, the Prime Minister, in a report accompanying the decree, to have none of the political attributes of the control. The Financial Counselor, without being a minister, should sit at Cabinet meetings when invited to do so, and should have the power to examine financial questions, and to give advice within the limits prescribed by the Khedive and his ministers, but would have no authority to interfere in the administrative affairs of the country.

British Project of Parliamentary Government.—Lord Dufferin's scheme of representative government was announced about the middle of January. This plan, formulated by the Egyptian Government under the advice of the British plenipotentiary, proposed to place the chief power as before in the hands of the ministry. The Khedive should have a council of twelve responsible ministers, possessing the powers previously exercised by the Egyptian ministry, except that their acts must be approved by a Legislative Council, consisting of

* Great Britain commands both entrances to the canal from the near stations of Malta and Aden.

† The system of mixed tribunals was instituted in 1876 for the period of five years. The two previous prolongations were, like this one, from year to year.

fourteen members, half of them nominated by the Khedive, and half of them elected by a college of electors chosen by the people. A second and more popular elective assembly, consisting of forty-four members, was to be convened occasionally to discuss special subjects, without possessing any direct voice in legislation. In case the Legislative Council should reject a measure of the ministry, the final decision would rest with the Khedive.

This scheme was afterward modified so as to give the representative principle fuller scope. From the chief legislative body, called the General Assembly, the eight ministers of the Cabinet are to be selected, who shall be responsible to the Khedive.

The General Assembly consists of 84 members, composed of the 8 ministers, the 30 members of the Legislative Council, and 46 additional members chosen by the spokesmen or electors of the towns and villages.

The Legislative Council consists of 30 members, of whom 14 are appointed by the 14 Provincial Councils, an equal number are nominated by the Khedive on the advice of his ministers, and the remaining two represent one the city of Cairo, and the other Alexandria, Damietta, Port Said, Rosetta, Suez, El Arish, and Ismailia collectively. The Khedive selects from among his appointees the president and the first vice-president.

The Provincial Councils are elected indirectly in each of the fourteen provincial districts by universal manhood suffrage. Every Egyptian twenty years of age, not in military service, who has never been convicted of crime and is not adjudged insolvent, has the right to vote for electors who choose the representatives in the different elective bodies. There are about 903,420 voters altogether, of which number 797,571 are in the villages, and 105,849 in the towns. Each village constituency, of which there are about 4,300 altogether, elects one representative in the college of electors, which convenes by order of the Khedive in the chief town of each of the 14 provinces and elects the Provincial Councilors. There are 70 Provincial Councilors elected in the 14 constituencies. The number of electors in the different provinces varies from 90 to 544, the average being 307.

The election of the electoral colleges for the Provincial Councils, Legislative Council, and General Assembly took place in the latter part of September. Yet because they feared the temper of the Egyptian people, which grew more and more hostile and morose, or for other reasons, the British advisers of the Khedive deferred indefinitely the putting into operation of the legislative and representative institutions they had devised. As a temporary substitute, the Khedive appointed a Council of State, consisting of eleven Egyptians, two Armenians, and ten Europeans. Sherif Pasha was appointed president. The European members were E. Vincent, Lemesurier, and Rowsell, Englishmen; Gay-Lussac, Pietri, Rousseau, and Borelli, Frenchmen; Blum and Keller, Austrians; and Ara, an Italian.

Reorganization of the Army.—Soon after the occupation, the Khedive, of his own motion, summoned Baker Pasha, a British officer in the service of the Sultan, to Cairo, and intrusted him with the task of organizing a new military force. He was appointed commander-in-chief, had the rank of Ferik, the highest in the Egyptian army, bestowed upon him, and worked out a scheme for an army of about 6,000. He was not, however, the choice of the British Government, and was superseded by Sir Evelyn Wood, who adopted the main features of the plan. Gen. Baker was then commissioned to organize a constabulary force separate from the army.

The new army was to be raised by enlistment. Compulsion in recruiting was prohibited, non-commissioned officers were forbidden to strike the soldiers, and the new force was recruited in a short time. Under Sir Evelyn Wood as chief in command, the cavalry was commanded by Lieut.-Col. Taylor, the artillery by Lieut.-Col. Duncan, and one of the infantry brigades by Brig.-Gen. Grenfell, all of the British army, the command of the other brigade of infantry being given to Ali Pasha Tchudi, an Egyptian general. The infantry were armed with Remington rifles, and Krupp guns were provided for the artillery. The troops and all officers below the rank of captain were to be native Egyptians. One half of the regiments were to be commanded by Egyptians, while the others were to have an English lieutenant-colonel and major for chief officers, the total number of British officers being limited to twenty-five.

Instead of the cruel treatment and seclusion resembling the punishment of a felon, which followed forced conscription in the old Egyptian army, and instead of an indefinite term which often lasted to old age, the discipline and treatment were assimilated as far as could be to the system of the British army. The pay of a piastre a day is given regularly every month. The term of service is four years with the colors, and four in the reserve. An annual leave of absence and a daily release from duty for an hour or two are allowed. The hospital and commissary administration are excellent, and schools and other modern improvements have been introduced.

Gendarmerie.—Baker Pasha organized a force of 4,000 gendarmes, divided into two battalions, one of rural and one of city gendarmerie. The commanders and inspectors were all British army officers. The urban constabulary were intended to assist the police proper in preserving order in the larger towns of the Delta. The ordinary police in these places numbers 1,600. The object of both the army and the constabulary was to keep the population in check by disciplined armed forces under the control of Europeans, and thus prevent

or promptly suppress any riotous or insurrectionary outbreak. The separation of the military force into two distinct establishments was expected to render it a more reliable instrument. The gendarmerie was intended to be a larger organization than the army, and to number altogether 7,390 men. They are mainly armed and equipped as mounted infantry.

Before the British plans were developed, and soon after the destruction of Arabi's army, the Khedive began to form a military police and body-guard from foreigners enlisted in Switzerland, Albania, Dalmatia, and Turkey. The Swiss and other Europeans were to constitute the military police of the cities, and the Turks, Bosnians, and Albanians the palace-guard and the gendarmerie. Baker Pasha was at first intrusted with the organization of the latter bodies; but finally, through the influence of the British agents, especially after the European police proved unruly and disorderly themselves, the scheme was abandoned in favor of the one described above, and finally developed by Gen. Wood.

The military character which Baker Pasha impressed upon the gendarmerie was objected to in England, and the Egyptian authorities were influenced to alter the character of the organization, depriving the officers of their military titles and honors, changing the official designation of the corps to the English word "constabulary," etc. Yet, when the army of the Soudan was annihilated, this was the only force available for the relief of the Soudan towns and garrisons, except what blacks the former rebel, Sebehr, was able to enlist in the Delta. The reason of sending gendarmes to the Soudan and leaving the soldiers to do police duty in their place, was because the new army was enlisted on the express condition that they should not serve in the Soudan.

Establishment of Native Courts.—The organization of new native tribunals was proceeded with early in the year. They are to be presided over partly by native and partly by European judges. The latter are the exception, and will eventually give place to Egyptians. A simple code of procedure was drawn up by an English and an Italian jurist, Messrs. Hills and Moriondo. The parties appear before the Judge of Instruction, a native, who acts as a Conciliation Court, and decides whether there is a case for litigation. He lays both sides of the case before the Court of First Instance, of which there are eight altogether. The forms of French law, simplified, were adopted because the Egyptians are familiar with no other law, except the Sheriat law administered by their cadis, and because it was the intention to merge, in the course of time, the international tribunals in the new indigenous tribunals, and therefore desirable to retain the forms of the Code Napoléon, which govern the procedure of the mixed courts. Since English judges were not fitted to apply a strange code of procedure, and on the ground of economy, the European members of the new courts were brought from Belgium and Holland.

Financial Problems.—The financial difficulties which compelled the abdication of Ismail Pasha, and underlay the revolt of Arabi, confronted the English in as formidable a shape as ever. No improvements in the system of government, in the administration of justice, or in any of the departments of the public service, would be of any use unless means could be devised to enable the fellaheen to bear their financial burdens and to stay the progressive impoverishment of the country. After a year of war and anarchy, followed by a pestilence, the people were called upon to meet extraordinary demands for the cost of occupation, indemnities, etc., while under British direction the expenses of administration increased.

Since it was out of the question, under the circumstances connected with the intervention of Great Britain, to require the bondholders to forego their claim to half the total revenue of the country, the only relief was through reforms and public improvements, which would only yield their results after several years. The Egyptians, filled with national and religious animosity against the British, were not conciliated by the promised reforms, the immediate object of which seemed to be to supplant foreign speculators of other nationalities by English speculators, and supersede the officials introduced by the dual control with still more expensive English officials.

The impoverishment of the country was manifested by the neglect of the irrigation-works and the relapse of cultivated areas into barrenness, and by the increasing indebtedness and more frequent bankruptcy of the fellaheen. The private indebtedness of the peasantry was estimated by some as high as £15,000,000. Lord Dufferin placed it at £9,000,000. At the time of the abdication of Ismail the aggregate amount did not exceed £1,400,000. The average interest paid on unsecured debts was not less than 36 per cent. per annum. A frequent arrangement was to pay three-month loans of napoleons in pounds sterling, equal to 100 per cent. per annum! The average product of the land is about £3½ per *feddan* (nearly an acre), instead of £15 to £30, as estimated by Villiers Stuart. The taxes average 40 per cent. of the annual product. The rapid increase of insolvency was due to the right of foreclosure given to creditors by the mixed tribunals, a remedy which is foreign to the customs of the country. The quantity of land which actually passed into the hands of Europeans under judicial sales was stated in the later inquiries to be only a few thousand acres. More than half of the loans were also said to have been made by banks doing a legitimate business, and not receiving over 10 per cent. interest on mortgages.

The principal present remedy proposed by Lord Dufferin for the relief of the economic distress was to rescue the fellaheen from the

toils of the usurers. The usual course of foreign creditors when the fellaheen were not prompt in their payments had been to appeal to the provincial governor or his subordinates, who would compel payment, if the fellah was able, by arbitrary methods. The provincial authorities were admonished by the Minister of the Interior in the summer not to interfere in the disputes between the fellaheen and their creditors, who must have recourse to the courts of justice. An appeal was made to the creditors to deal leniently with the fellaheen until normal conditions return. It was expected that English capital would flow into the country, and not only provide the fellaheen cheap money for their present wants, but enable the Government through the co-operation of an English commission to assume the debts of the fellaheen and convert the usurious interest into moderate rates. It was further announced that the commission intrusted with the revision of the Egyptian laws would incorporate in the new code a provision reserving a certain quantity of land to every farmer as an inviolable and inalienable family possession. The first effect of these proposed reforms was to aggravate the financial embarrassments of the peasantry, for now the money-lenders would make no more loans. The fellaheen on their part refused to pay their debts until the English commission met to consider them. After several months of this monetary derangement, the Ministry of the Interior in November issued another order directing the provincial authorities to take measures to induce the fellaheen to pay their foreign creditors. The commission to consider the indebtedness of the fellaheen was appointed in October. After a few sittings the Government changed its attitude in this question and adjourned the inquiry until the next year.

The partition and sale to the fellaheen of the Daira Sanieh and Domain lands is expected to improve the well-being and the tax-paying capacity of the people. These estates, to consolidate which vast numbers of fellaheen were expropriated by the ex-Khedive, cover a fifth part of the total cultivable soil of Egypt. Their administration by European officials has not been successful. Under the Control the Daira Sanieh thus administered paid expenses and the interest on the debt for which it was pledged, while the Domains ran behind £700,000 in four years. The latter were partly divided up into parcels in 1883 and conveyed to peasant owners.

The decay of agriculture can not be effectually arrested without taking measures for the restoration, improvement, and maintenance of the irrigation-works. The *corvée* is no longer equal to the task of keeping the canals clear, and the desert is encroaching upon the tillable land. The introduction of steam-engines for pumping supplied a corrupt motive for negligence, since the failure of the subsidiary canals enables the proprietors of steam-pumps to exact a high price for furnishing the peasants with water. Extensive improvements in the system of canalization were among the promises held out by the English, and technical studies of the subject were undertaken.

Repeal of the Capitulations.—The English were hindered at every point in their reform projects by the capitulations, which grant exceptional rights and immunities to foreigners, the chief of which are exemption from taxation, and separate courts of justice. These privileges constituted in some respects a serious grievance. The English had a double motive in desiring to abolish them—to win popularity with the Egyptians, and to take away from other foreign countries their exceptional position and right to interfere in Egypt. The abrogation of the capitulations was opposed by the foreign colonies in Egypt, to whom those privileges were materially valuable. Still, the European governments were willing to accede to the proposition, with the exception of France. That power refused its consent, and so the year passed by without this necessary preliminary to financial reform and the contentment of the Egyptians being accomplished.

Alexandria Indemnity Commission.—A commission was appointed in the spring, charged with investigating and deciding upon claims for indemnification for damages suffered from the bombardment, burning, and pillage of Alexandria. The president was Abdurrahman Rushdi, and the vice-president Yacoob Artin Beys; the other members were representatives of England, Austria, France, Germany, Italy, Russia, Greece, and the United States. Claims less in amount than £200 were first taken into consideration. The majority of these were presented by native Egyptians, the Greeks and French coming next. The commission had not quite ended their labors at the close of the year. The total amount of damages awarded approximates £4,000,000.

Political Trials.—Several trials for crimes connected with the Alexandria riots, the burning of that city, and other incidents of the rebellion, were set on foot by the Khedive's Government; but after it was seen that the object was to strike terror, and that dangerous revelations might be brought out in evidence, the English discouraged these prosecutions. The first trial was instituted for the satisfaction of the English themselves. The accused were thirteen Arabs indicted for the murder of Prof. Edward Henry Palmer and his companions, Capt. William Gill and Lieut. Harold Charrington, on Aug. 12, 1882. That well-known Oriental scholar, who had recently visited several Arab sheiks and sought to win them over to the English cause, was commissioned to return and complete the arrangements in company with the two officers. The party carried with them for this purpose £40,000, ostensibly to be employed in buying camels for the British army. Capt. Gill had orders to cut the tele-

graph wires and prevent Arabi from holding telegraphic communication with the East. A sheik named Meter Sofieh accompanied them as guide and protector from Moses' Wells on Aug. 10th. Betrayed perhaps by him, they were captured by a troop of Bedouins and shot as spies. Of the thirteen persons brought to trial on Feb. 18, 1883, five were shown to have taken a subordinate part in the act, and were executed on Feb. 28th.

On the 7th of June Suleiman Daoud Sami, military commandant of Alexandria at the time of the bombardment, was brought before a court-martial on the charge of having ordered the plundering and burning of Alexandria. The British Government gave assurances that the rules of evidence and the right of defense would be observed, but the motive for the removal of Suleiman Sami and closing the delicate questions connected with that episode of the war was so strong that he was hastily put through an irregular trial, and executed on June 9th, just as the Foreign office in London were about to bestir themselves in the matter. In the beginning of July Said Bey Khandeel, prefect of police at Alexandria, was tried for conspiracy, on suspicion of having incited the massacres of Alexandria. The advocates of the accused offered to prove that the Khedive himself instigated Omar Lutfi, then Governor of Alexandria, to stir up the disturbances which culminated in the riot and massacres of June 11, 1882, with the object of discrediting Arabi Pasha who had guaranteed public safety. Said Khandeel was acquitted of the main charge, but condemned to seven years' hard labor for neglect of duty and connivance in the disorders. In September a number of the native police were executed for having taken part in the massacres. There were numerous other executions in different parts of the country.

In the first week of October, the jails were thrown open, and the multitude of prisoners incarcerated on charges connected with the mutiny and rebellion were set at liberty. The courts-martial and prosecution committees were dissolved, and on the 10th of October the Khedive granted amnesty to all concerned in acts of violence, pillage, and incendiarism during the disturbances, murder excepted.

The Cholera.—On June 26th the cholera appeared at Damietta, and, spreading through the Delta, raged until autumn. The European press charges the British authorities with having negligently allowed infected persons to import the disease from India. It is certain that no quarantine precautions were taken, and that the disease was of the genuine Oriental type. The English Government, in their anxiety to rebut this accusation, obtained a report of English experts declaring that cholera had been endemic at Damietta since 1865, while Egyptian officials published a statement that Asiatic cholera had never been endemic in Egypt.

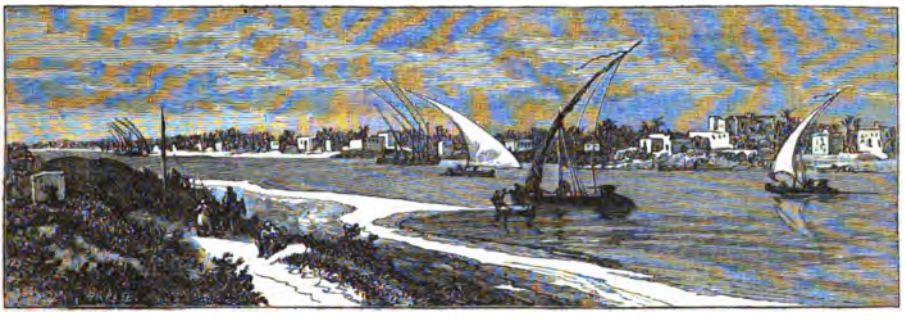
The Soudan Rebellion.—The resistance of Sebehr, who, with a large number of sheiks and chiefs, threw off the authority of the Khedive in 1878–'79, and successfully opposed the efforts of Sir Samuel Baker and Gen. Gordon to put down the slave-trade, prepared the Soudanese for the great uprising of a mingled religious and political character under Mohammed Achmed, the pretended Mahdi, or expected redeemer of Islam (see MAHDI, EL). The English war of occupation gave this leader the opportunity of consolidating his power, and enabled him to obtain the prestige of victory. The efforts of the English to root out slavery, and the approach of 1889, the year set for general emancipation, added new motives to the old desire for deliverance from the Egyptians.

The religious phase of the movement in the Soudan, though prominent in the beginning, gradually sank in importance as compared with the political side of the rebellion. The Mahdi himself, while proclaiming his divine mission to revive the power of the Shiite sect in the beginning of the thirteenth century of the Hegira, showed more of the characteristics of an ambitious ruler than of a religious leader. The Soudanese themselves were filled with a longing for deliverance from the harsh Egyptian yoke. They had not forgotten the cruelties of the conquest, sixty years before, when the Fung, the finest of the Ethiopian tribes, whose kingdom extended from Sennaar to the second cataract, succumbed after a valorous resistance to the Egyptian fire-arms, but, unable to furnish the boat-load of gold demanded by Ismail Pasha, son of Mehemet Ali, murdered the prince, and were in return butchered to a man by the relentless defterdar, except those who escaped into Abyssinia. The inferior fellaheen battalions have had to contend from that day to the present with these brave races, whose superiority in a military sense has been proved by the black regiments of the Khedive in every battle in which Egyptian troops have been engaged. The oppressions and extortions of the Egyptian officials, which culminated in the administration of Dhafar Pasha, Governor of Khartoum, in 1870, made the existence of the Soudanese a social martyrdom. The country-people dared not venture into Khartoum, for they were robbed by the soldiers and officials of the Khedive, and pressed into any labor that was required. Theft and robbery were never punished, and nothing was accomplished without bribery. Under Muntas Pasha, the next governor, who posed as a reformer, the impoverishment of the country was pursued with more system and thoroughness. The fields were no longer cultivated, because the harvest was confiscated. Pieces of land selected at will were declared khedivial property and cultivated with forced labor. The regulations of Baker Pasha for the suppression of the slave-traffic were circumvented, unless the officials, on the pretext of carrying them out, seized the slaves for their own use. To the Khedive's

Government this plundered land was a financial burden, the revenues not being sufficient to cover the expenditures.

In the summer of 1881 Reouf Pasha, then Governor of the Soudan, first heard of the religious pretensions and proclamations of the Mahdi, who at that time had but a small band of military followers about him on the island which he occupied in the White Nile. The governor sent an official to summon him to Khartoum. He refused, and, when a small force was sent by water to effect his capture, it met with a severe repulse. The Mahdi then withdrew for greater safety to Gebel Gedir, where he extended his influence for some time unmolested, and his adherents greatly increased in numbers. Finally, an expedition was sent against him in December, 1881, by Rashid Bey, Governor of Fashoda. This force was defeated. The bravery of this officer and his 270 Nubian soldiers delivered the beleaguered garrison and townspeople, who from the fortified barracks kept the rebels thus long beyond gunshot. The rebel force swelled after the taking of Sennaar by Amr to at least 40,000. Sala Aga marched his little band into the midst of the insurgents, who mistook them for a body of rebels. Forming a square with their backs to the river, they opened fire. The rebels threw themselves upon the black soldiers, but with their savage weapons were unable to get near them. They returned to the attack and were driven back by withering fusillades all day long. After thousands had fallen and Sheik Amr himself was wounded, the rebels retired from the city.

Giegler collected a body of irregulars and marched on May 15, 1882, toward Abu Harras, where another rebel chief, the sherif Mohammed Taha, who called himself the vizier of the Mahdi, was inflaming the whole district. An officer sent by the vice-governor with a detachment to parley with the rebels, attacked them, and his force was annihilated. Giegler Pasha awaited in Abu Harras the arrival of Ali Kashef, the newly appointed Mudir of Sennaar, with a sufficient force to clear the province of rebels. As Mohammed Taha had to be subdued before marching against the sheik Amr-el-Makasef, the vice-governor sent several hundred irregulars with a cannon against him. This detachment was also cut to pieces. The situation of Giegler Pasha was critical when Ali Kashef arrived with irregular troops and the chief of the Shukuriehs with 2,500 warriors of his tribe. The next morning the whole force marched upon the village where the sherif was encamped, on the right bank of the Blue Nile. The leader of the insurgents came out to meet them, surrounded by hundreds of praying dervishes, and followed by his warriors and all the women and children. The fanatics allowed themselves to be decimated without faltering, until the sherif, whose seemingly charmed life inspired the soldiers with superstitious fear, was at last struck by a bullet; then they scattered, pursued by the savage soldiery, who spared none. Other uprisings were in progress; but they subsided after this blow, only



KHARTOUM, CAPITAL OF THE SOUDAN.

In the beginning of 1882 the new Governor-General of the Soudan, Abd-el-Kader, fitted out an expedition under the advice of Giegler Pasha, the Austrian vice-governor, with the intention of effectually suppressing the Mahdi. The command was given to Yussuf Pasha, the general who commanded the expedition that defeated Sebehr, the merit of which exploit was ascribed at the time to Gessi. The force which proceeded from Khartoum and Kordofan against the Mahdi consisted of thirteen companies of regular troops, 1,500 irregulars, and a number of loyal Arab sheiks with their people. The troops were excellently armed and provided with an abundant commissariat, and steamboats and camels for transport. They set out in the middle of March, 1882.

After their departure the news came that the sheik Amr-el-Makasef had risen in Sennaar, on the Blue Nile, and with thousands of rebels threatened the city of Sennaar. The Mudir of Sennaar received orders to attack Amr. The garrison were driven back into the barracks by the rebels, who sacked the town and massacred the inhabitants. The expedition against the Mahdi had stripped Khartoum of soldiers and munitions. Salah Aga-el-Mek, who with a battalion of infantry had been accidentally left behind by Yussuf's army, was commanded to march to the relief of Sennaar.

one body, under a certain Essein, making a stand against the Egyptian force. When these insurgents were cleared out of the way, the Egyptians advanced to meet Ahmed-el-Makasef, who had a force of about 10,000 men. They routed this army near the village of Teko, and thus put an end to the insurrection in Sennaar; but the sheik escaped with many of his followers, and joined the Mahdi in Kordofan.

These successes held the insurrectionary movement in check on the Blue Nile while Yussuf Pasha, with almost the entire force which Arabi's rebellion left in the Soudan, advanced against the Mahdi on the White Nile. In June he approached the rebel leader's stronghold in Kordofan. With superior strategic skill, the False Prophet selected an advantageous position and fell upon the advancing column by surprise at Gebel Geon, giving them no time to form in order of battle in a difficult position. The Egyptian army, though armed with muskets against swords and spears, was cut to pieces. Few of the soldiers and none of the officers escaped alive.

The Mahdi then directed his efforts with energy to taking possession of the Soudan, now almost stripped of its defensive force. But the fortifications of the towns were a formidable obstacle to his savage warriors. The slightest earthworks could be easily defended. At El Obeid the Mahdi met with his first reverse. In a single assault on September 8th, 6,000 rebels fell. Attempts to storm other places were unsuccessful. The Mahdi withdrew his forces on December 8th, and spent some weeks in improving their discipline and organization. He then returned and laid siege to El Obeid. The garrison held out until reduced to the last extremities. On the 15th of January they surrendered. Iskander Bey, the commandant, and the larger part of the garrison, then went over to the rebels and accepted service under the Mahdi.

The garrison in El Obeid, when the place was first attacked in August, numbered 6,000 men. When they surrendered unconditionally and took the oath of allegiance to the Mahdi, there were 3,500. The victors obtained about $2,500,000 in treasure. Iskander was employed by Mohammed Achmed to persuade other Egyptian officials to embrace his cause.

In the spring the English made military preparations to suppress the rebellion. A force of 7,000 infantry, 120 cuirassiers, 300 Bashi-Bazouk cavalry, and about 30 guns, was sent to Khartoum. It was joined on the way by other bodies, which increased the force to some 10,000 troops, and took rockets and howitzers in abundance. The Soudan army was entirely distinct from the regular army organized by Sir Evelyn Wood. It was composed, in great part, of the disbanded troops of Arabi, and contained the most unpromising materials. Some were too old for efficient service, and the majority were enlisted compulsorily. The British had little excuse for again underrating the power of the Mahdi, who disposed now of a force of 338,000 warriors. But the difficulty of their situation in Egypt, in which they had to consult the interests of the Egyptian bondholders, prevented them from following out the wishes of the Khedive's government to make sure work of suppressing the rebellion. The expedition was sent so late that it was judged best not to take the field until the opening of the dry season in September. Many of the soldiers had belonged to Arabi's army. To test their quality and disposition, a camp was formed at Um-Durman, on the west bank of the Nile, opposite Khartoum. Camels for transport were wanting, but they were procured by the exertions of Alla-ed-Din, the new Governor-General of the Soudan. Some time was consumed in efforts to procure the cooperation of Adam, the Takale chief, who is powerful in the region southeast of Obeid. Col. Hicks, who came to Egypt with the English army, and had been the Khedive's chief of staff, was commander of the expedition.

On the 9th of September the camp at Um-Durman was broken up, and the march up the White Nile begun. The army kept as close to the west bank as the floods would allow. Duem was reached on the 20th of September, and from that place to El Obeid a circuitous route was chosen on account of water. About 3,000 men were left on the way to maintain a line of fortified posts, but the plan of keeping up communications was abandoned, and the army was left to subsist upon their biscuits and what they could obtain from the country.

In the Suakin district, in the beginning of November, an expedition composed of about 500 Egyptian soldiers was conducted by Commander Moncrieff, the British consul at Suakin, and their native officers, against the rebellious Bedouin tribes of the neighborhood. Proceeding by sea, they landed at Toka. The Egyptian soldiers fled before an inferior force of Bedouins, and were slaughtered almost to the last man. On November 12th the rebels advanced to attack Suakin, but were repelled.

The Mahdi advanced to meet Gen. Hicks from Kordofan with an army of 300,000 Soudanese. Hicks Pasha divided his force of about 7,000 into two columns; one being sent on to capture El Obeid, while with the other he awaited the coming of the Mahdi's army at Kaz. The rebel forces were nearer than was anticipated, and the Mahdi had laid his plans skillfully. The first engagement with the rebels was at a point near Namua, where Gen. Hicks encountered and worsted a considerable body of the Mahdi's black allies.

When they reached Namua, near the Obeid hills, Hicks Pasha detached the column which was sent to demand the surrender of the fortress. It was this division which the Mahdi, advancing from the southeast, engaged on ground selected by himself, November 2d. Gen. Hicks, on hearing the firing, came up

with the rest of his forces. Forming a square around the camels and stores, they withstood the fierce and reckless onset of the Soudanese until evening, when the Mahdi withdrew. The Egyptian camp-followers were thrown into confusion by the stampeding of camels, but the troops fought with admirable fortitude. The next morning the rebels resumed the attack, re-enforced by the arrival of well-armed troops from Kordofan, soldiers who had surrendered at El Obeid. The Egyptians held their ground through another day's fighting, but on the third morning the square was broken. The battle-ground had been selected by the Mahdi with his usual sagacity. It was a narrow, rocky passage between wooded hills, in which he had placed the guns and rifles captured in former engagements in positions where they could be used with effect, but where it was impossible for Gen. Hicks to deploy his artillery. Into this ambuscade the Egyptian advance-column was led by a treacherous guide. The army of Hicks Pasha was totally annihilated. The troops are reported to have fought three days without water, until all their cartridges were expended. Gen. Hicks then ordered a bayonet-charge, but the army was immediately overwhelmed and not a man escaped. The commander-in-chief, with Alla-ed-Din, Governor-General of the Soudan, Abbas Bey, Col. Farquhar, Majors von Seckendorf, Massy, Warner, and Evans, Captains Herlth and Anatyaga, Surgeon-Gen. Georges Bey, Surgeon Rosenberg, O'Donovan, the well-known war correspondent, a number of Egyptian pashas and beys, and all the officers, who numbered 1,200, and soldiers of the army, were slain. All the camels, stores, and munitions, with 36 Nordenfeldt, Krupp, and mountain guns, fell into the hands of the Mahdi.

The annihilation of the main Soudan army at Kashgate left about 4,000 troops in the Soudan scattered in various places. Col. Coetlogon, who was almost the only surviving European in the Soudan, being the next in command, collected these scattered bodies in Khartoum and the other important posts.

Baker Pasha was at once ordered to Suakin with a mixed force of gendarmes, Bedouins, and Soudanese. To Sebehr Pasha, the former Soudan potentate, was confided the duty of recruiting and leading the black and Arab irregulars. The object of the expedition was to keep open the line of communication between Suakin and Berber, so as to afford an avenue of retreat for the Egyptians in Khartoum and other parts of the Soudan.

The entire province of Sennaar declared for the Mahdi as soon as the defeat of Hicks became known. The majority of the Bedouins of the coast, to secure whose co-operation was the first thought of the Egyptian council of war, which decided on a plan of operations at Cairo, joined the rebellion. The whole Soudan was involved except the fortified trading posts, which were held by feeble garrisons, and where the loyalty of the black population was doubtful.

After the first detachments of Baker's force had arrived, the forts of Suakin were repeatedly attacked between November 26th and December 1st by the slave-dealing Kabbabish Arabs, who were the Mahdi's efficient allies in the coast-region. On December 2d a force of 500 Soudanese infantry, 200 Bashi-Bazouks, and 200 cavalry marched out from Suakin to attack the rebels. Within three hours' march from the town they were unexpectedly attacked. They were without their Remington guns—most of which were strapped on the camels—but they executed the manœuvre in which the Egyptian soldiers are so well trained, the hollow square, and fought valiantly until the greater part of them were killed. Only fifty are reported to have escaped.

Gen. Baker was detained at Cairo by business connected with transports and supplies for his relief expedition until the middle of December. When he arrived at Suakin he had at his disposal a force of 2,300 gendarmes, 500 of them mounted, 1,500 black troops, and 4,000 Bedouins, with five guns. The gendarmes were under the command of Col. Sartorius, the blacks and half the Bedouins under Sebehr, and the rest of the Arabs under Hussein Pasha. The latter division was to advance up the Nile and join the others, advancing from Suakin, between that place and Berber. In the mean time the posts of Tokar, on the coast of the Red sea, and Sinkat, midway between Suakin and Berber, were beleaguered by Arabs, and the garrisons reduced nearly to starvation.

The Egyptian Government, having been practically deprived of all defensive power by the abolition of its army, could only look to England to restore the provinces which had been lost through the English invasion. The British Government was in a helpless dilemma. It was out of the question to expose British troops to the dangers and privations of a campaign in the Soudan, or to employ Indian troops for such a purpose again, and equally so to burden the Egyptian treasury with the expenses of a war to suppress the rebellion if the troops could be raised in Egypt, or to call upon the British people to help defray them. If the Porte was willing to attempt the reconquest of the Soudan, it would only be at the price of impairing the position of England in Egypt. The rebellion itself was a menace to English interests in the Delta and on the canal. The councils of the English Cabinet were divided on the Egyptian question from the first. Mr. Gladstone himself was opposed to establishing direct British dominion in any shape. The policy of removing the occupying army and leaving the Egyptians to themselves, of letting them "stew in their own juice," as it was phrased, was abandoned. A continued occupation of indefinite duration was now in prospect, perhaps a permanent protectorate. Yet the

abandonment of the Soudan must disappoint and alienate the only class on whose sympathies the English counted, viz., the Khedive and the court and Government circle in Cairo. The movement started in the Soudan might spread to the Arabs of Asia and threaten the power of the Sultan; but it was certain, if Egypt were now abandoned by the British, or unless a line of military defense were drawn and effective measures taken to check the Mahdi's advance, to infect the discontented fellaheen of Egypt, inflame their religious passions, and result in a new revolution and war far more desperate and sanguinary than that of Arabi.

The measures proposed by Great Britain were humiliating to the Khedive, but he had no other choice. They were to secure the alliance of the King of Abyssinia by ceding to him the port of Massowah, and to abandon a great part of the Soudan, drawing the new frontier and line of defense from Suakin through Berber to Khartoum. This line it was imperative to hold for the present, for it was the only way of retreat for the Egyptians in the Soudan. Gen. Gordon was sent alone into the Soudan to consolidate whatever well-disposed elements there were remaining in the Soudan, and recede the western provinces to the former sultans.

Baker Pasha entered upon the campaign without definite plans. Except a small sprinkling of Turks, he had no material in his army on which he could rely for courage or fidelity. The former soldiers of Arabi made up the bulk of his command, and they had been driven into the ranks at the point of the bayonet. The black troops recruited by Sebehr were suspected of sympathy with the False Prophet. When they were sent to Suakin it was judged advisable to remove Sebehr Pasha from the command. Baker, who was given supreme military and civil authority, hoped to transform gradually this cowardly and mutinous body by recruits from Turkey and the islands of the Levant. The Abyssinians had made a military demonstration against the coveted port of Massowah, in connection with a revolt of the Cassala tribes. Baker Pasha was empowered to secure the alliance and military cooperation of the King of Abyssinia by agreeing to the cession of the port and adjacent territory. His general instructions were to protect the coast, relieve Sinkat, and reopen the Suakin-Berber line of communication. The rebels withdrew from Trinkitat on the arrival of Baker's troops at Suakin; but the besieged garrisons of Tokar and Sinkat were in extremities. The slave-dealing Arabs of the coast had no direct connection with the Mahdi; they constituted a separate military organization, under the direction of Osman Digna.

Baker Pasha advanced his line to Trinkitat, and then sent an appeal to Cairo for rifles to replace the obsolete muskets with which most of his troops were armed. There were Remingtons in Suakin, but, owing to the neglect or treachery of the civil officers, they were not delivered. Baker received, in reply to his dispatch, orders to advance at once to the relief of Tokar, which had been thrice attacked. The belief in the irresistible destiny of the Mahdi prevailed among the troops, while European and Egyptian officers were alike persuaded of the hopelessness of the operation. Yet he set out from Trinkitat with 3,000 men, and, on February 6, 1884, advices arrived in Europe stating that a body of Osman Digna's forces had routed this last Soudan army not far from Tokar. The Egyptians made no stand. In the confused flight to Trinkitat, about 2,000 were lost. The remnant were got on a transport by Gen. Baker, and escaped to Suakin. British marines landed there to hold the forts against an attack from without, or from an insurrection in the town. A few hours later the news arrived that 400 of the garrison at Sinkat, which was now reduced to subsist on herbage, in attempting to cut their way through the line of the enemy, were overwhelmed and the entire detachment destroyed. On the 12th came the news of the annihilation of the remaining 600 and their brave commander, Tewfik Bey, who, when the final stage of hunger was reached, spiked the guns, blew up the forts, and sought death in battle at the head of his troops.

ELECTRIC LIGHTING, PROGRESS OF. Electric lighting has now reached a condition in which striking and fundamental inventions have ceased to appear. The main lines along which future improvement must go have been laid down, and attention is now being given to those matters of detail in the construction of apparatus necessary to secure good working and greater economy. Whatever may be the improvements effected in the future, it is very certain that the incandescent lamp has taken its final form, namely, that of a strip of resisting material inclosed in an exhausted vessel, while it appears reasonably probable that the regulator arc-lamp will maintain its ascendency, though the combinations of parts which may be made in this type of lamp can be so greatly varied that it is difficult to pick out with certainty the surviving forms. Hitherto, the regulator lamp, having its carbons placed end to end in a vertical line, has given the best photometric results, and been most extensively used. Its extreme unsteadiness, and the fact that, for most uses, it furnishes too strong a light at one center, renders, however, its prospect of permanence less certain than that of the incandescent lamp. Whether the regulator will give place to lamps which obtain increased steadiness by the interposition of a refractory material in the arc, such as the sun-lamp, or to those giving a light due partly to an arc and partly to incandescence, such as open-air incandescent lamps, the future can only decide. With incandescent lamps progress must consist in the improvement of the light-giving body, so that they will be able to stand

higher temperatures safely. These lamps are being continually improved in this direction, the lamps of to-day being very much better than those of a year or two ago.

Two new lamps of this kind have recently attracted considerable attention, though they do not appear to possess any advantage over previous ones. In one of these the light-giving carbon is in the form of a hollow tube, and in the other it consists of a platinum wire with a carbon coating. The former of these is the invention of Mr. Alexander Bernstein, of Boston, and the latter of Signor Cruto, of Turin. In manufacturing his tubular carbons Mr. Bernstein at first carbonized straws, and later deposited carbon from a carbonaceous gas or liquid upon a metal mandrel, which latter was afterward dissolved out by acids. This method was, however, abandoned, and the carbons formed by wrapping paper about a rod, the successive layers of paper being made to adhere by gum or paste. These paper tubes were then carbonized, in the ordinary way. Owing to the great shrinkage undergone by them in process of carbonization, the paper was finally replaced by a closely-woven textile fabric of cotton or silk. The inventor has been able to produce his tubes in the form of a bow, so that in external appearance his lamp does not differ materially from those now in use. These carbons are said to be highly elastic, so much so that they can be bent nearly straight, and will spring back to their normal shape. The lamp differs, further, from present lamps in being of quite low resistance, which will prohibit its use in any extensive multiple-arc system of distribution. The inventor, however, contemplates placing them in series as is done with arc-lamps. At the recent Exhibition of Electricity, at Vienna, a number of these lamps were shown of 65 and 150 candle-power. The appearance of the lamp is shown in Fig. 1.

The filament of the Cruto lamp is made by raising a platinum wire to incandescence in a carbonaceous atmosphere, the carbon being deposited upon the wire in the same way as it is upon carbon filaments in the "treatment" to which these are subjected by some of their makers, to render them homogeneous. Another incandescent lamp of a decidedly novel character has been patented in England by Messrs. Boullon, Probert, and Soward, though it does not appear to have been publicly shown in operation as yet. Instead of first making the filament and then mounting it upon leading-wires and sealing them into a glass globe, as is done in all other lamps, these inventors manufacture their filament by means of the current after they have sealed the leading-wires in place in the globe. To this end they introduce two platinum wires in a glass envelope, the inner ends of these being the distance apart of the intended length of the filament. A carbonaceous gas is then introduced into the globe, and a carbon bridge built across from one wire to the other by passing electric sparks between the platinum electrodes. The inventors state that they are able by this means to produce a carbon filament of great purity, and one which, being formed under the influence of the current, is not disintegrated by the

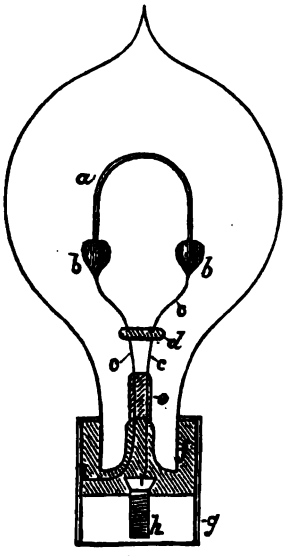


Fig. 1.

prolonged action of the current upon it. The apparent objection to forming a filamentary conductor in this way is the difficulty of obtaining a filament of uniform section, which is essential to permanence, as otherwise there will be spots throughout the conductor at greater temperature than the remaining portions, and the filament will tend to give way at these points of greater strain.

In dynamo-machines, though new varieties continue to be brought out, there is but little of importance to chronicle. An improvement in the construction of dynamos for incandescent lighting has, however, been patented during the year by Mr. Edward Weston, which deserves notice here. As is well known, incandescent lamps are arranged in what is termed multiple arc—that is, one terminal of the lamp is connected to the outgoing and the other to the return conductor. Each lamp, therefore, takes its own supply of current independently of all the rest. In order, however, that the proper amount of current should pass through each lamp, the electromotive force of the current should remain constant, however the amount of the current varies as lamps are turned off and on—that is, the difference of potential between the terminals of the machine must be unvarying. Mr. Weston succeeds in fulfilling this condition by establishing a certain relation between the armature and the field.

As is well known, the brushes of a dynamo, instead of resting upon the commutator at

the theoretical maximum points—the points joined by a line at right angles to the line drawn through the center of the field-magnet poles—are in practice given a lead, or displaced in the direction of rotation. According to Mr. Weston, the reason of this is that the field-magnets tend to induce magnetic poles in the iron core of the armature in the line joining their poles, while the rotating coil of wire wound on the core tends to induce poles in this core at points at right angles to this. The real maximum points are, therefore, on a line between the theoretical ones and that joining the field-magnet poles. The position of these points changes with every variation of the strength of the field-magnets due to variations in the current flowing in the field-coils, while the position of the brushes remains unchanged. That the difference of potential between these should remain constant, it is necessary that the position of the maximum points should not change, and this will be the case when the actual and theoretical positions coincide.

To realize this it is only necessary to make the magnetic effect of the field upon the armature-core so greatly preponderate over that of the wire upon it that the effect of this latter is inappreciable. This he accomplishes by making his field-magnets of great strength, winding but a single layer of wire upon the armature-core, and making this core, which consists of a number of sheet-iron disks, with projections which come close to the face of the magnet-poles. With this construction Mr. Weston states that the theoretical and actual maximum points so completely coincide that the machine can be run in either direction without changing the position of the brushes. The dynamo is shunt-wound—that is, the field-magnets are placed in a shunt to the main circuit.

Mr. Edison has continued to improve the details of his system, his latest improvement being an important modification of his system of distribution by means of which the cost of the conductors is materially reduced. Heretofore he has used the simple multiple-arc system. In this system each lamp requires its own supply of current, so that, to maintain a hundred lamps, one hundred times the amount of current must be transmitted as to maintain one. If, however, the lamps be arranged on a multiple-series system—that is, a system in which each cross-circuit contains two or more lamps arranged in series—the supply of current will depend upon the number of series circuits and not upon the individual lamps. Thus, if two lamps be placed in series, only one half the current will need to be transmitted which would be required in the simple series. If three lamps are placed in series, only one third the current will be required, and so on. The electro-motive force of the current must, however, be proportionately increased. The defect of this arrangement is that the lamps are no longer independent of each other: whenever one of a series is turned out, all of that series must be. If they were not, they would be destroyed by the increased current which would flow through them on account of the diminished resistance of the cross-circuit in which they are placed.

Mr. Edison has, however, succeeded in devising a way of rendering the lamps in a multiple-series circuit independent of each other, and thus rendering it as practicable for a general distribution as the simple series. How he accomplishes this is shown in Fig. 2, which represents three lamps arranged in series on

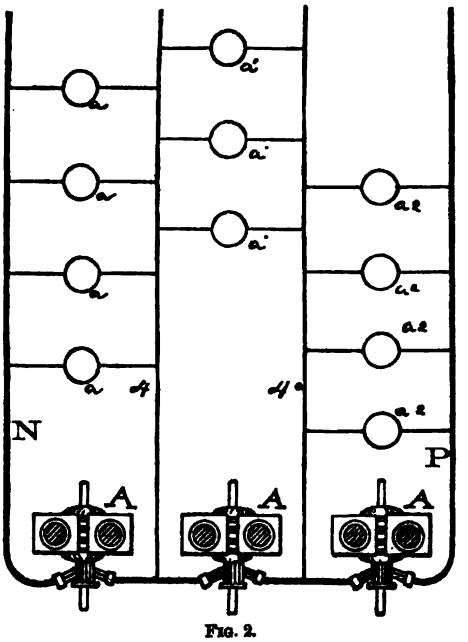


Fig. 2.

each cross-circuit. The dynamos A, A, A, are connected together in series, that is, one after another. The two main conductors, P and N, are connected, the one to the positive pole of the first machine and the other to the negative pole of the last. Between each line of lamps compensating conductors, as Mr. Edison terms them, are run to the generators and connected with the conductor joining them, as shown. With this condition of things, when the same number of lamps are in each circuit, no current will flow through the compensating conductors, but will pass from the main positive conductor through each cross-circuit. When, however, the number of lamps is unequal in two adjacent circuits, the excess of current above that necessary for the smaller number of lamps will flow through the compensating conductor between them. In practice, the circuits would be so arranged that the number of lamps in adjacent ones would be nearly the same all the time. The compen-

sating conductors may therefore be quite small and inexpensive. This method of distribution is applicable to cases in which but one generator is used, the compensating conductor then being connected to an extra brush on the machine placed between the two other brushes, as shown in Fig. 3. This method of distribu-

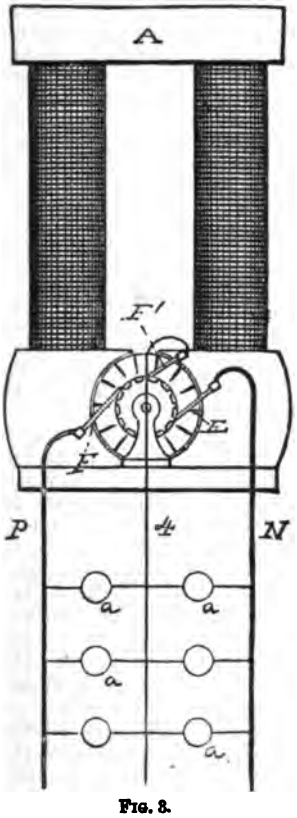


FIG. 3.

tion has not as yet been put into use, but Mr. Edison designs to employ it in the next electric-light district which is soon to be established in New York. The great importance of this system of distribution will be appreciated when it is remembered that even with the high-resistance lamps used by Mr. Edison the cost of the street mains is equal to the entire generating plant, and that the great outlay necessary for plant is to-day the chief obstacle to furnishing the electric light cheaply.

The system of distribution, which consists in placing the lamps or other apparatus to be used in the secondary circuit of an induction-coil, the primary coil of which is in the main circuit, has been proposed by various inventors in the past few years. Mr. Edison himself took out some patents on this method of distribution, though he has never put it into practical use. M. Jablochkoff, in 1877, used this system with his candles, employing for this purpose an alternating-current generator. The late J. B. Fuller also proposed to use the system in 1879. His induction-coils were made by winding over an iron core coils of coarse wire at each end and a fine-wire coil at the middle, the former being included in the main circuit, and the latter forming the local circuit in which the lamps were placed. Any number of such induction apparatus or groups of them may be placed on a circuit in series which the tension of the current will permit, and by connecting the fine-wire coils in series or in multiple the intensity or the tension of the lamp-current may be varied within wide limits. The death of Mr. Fuller cut short his experiments in this direction, so that his apparatus was never made practical use of. The secondary current was also employed by Professors Thomson and Houston for operating their vibratory arc-lamp. For this purpose each lamp was placed in a separate secondary circuit, and by means of an electro-magnet, one of the carbon electrodes, usually the negative, was given a rapid vibratory motion to and from the upper positive carbon. This form of lamp was, however, abandoned by them, and they subsequently resorted to an arc-lamp operated in the ordinary manner by a continuous current. Various other inventors have patented different forms of induction apparatus, but none of them have passed into actual use. Quite recently, however, this method has been revived in England by Messrs. Goulard and Gibbs, who have put the system into operation along the line of the London Metropolitan railway (underground).

They construct their induction-coils by forming each circuit—primary and secondary—of cables containing a number of wires, and then winding these cables as the wire is ordinarily wound on such apparatus—that is, the coarse wire on a central paper or other insulating tube, and the secondary over this. The iron core is composed of a bundle of wires, and is contained within a brass cylinder, by the withdrawal of which the strength of the secondary current can be regulated, and consequently that of the lights. The primary coil is in the main circuit, through which is sent an alternating current from an alternating-current dynamo. This current is of high tension, but, as this circuit is a permanently closed metallic one, there is no danger from the system on the score of the tension of the main circuit current.

Messrs. Goulard and Gibbs combine a number of their induction-coils into one apparatus of sufficient capacity to do the lighting required—say, that of a private house—and connect the coils so that any desired combination of them, in series or multiple, may be made. The secondary currents can therefore be made to give currents of high tension suitable for a number of arc-lamps in series, or low tension such as are required for incandescent lamps in multiple. In the installation on the Metropolitan railway five stations are lighted, each

one being provided with an induction apparatus, or "secondary generator," as the inventors term it. The main line consists of a copper-wire but one sixth of an inch in diameter, and is of a total length, out and back, of fifteen miles. At each station a portion of the coils are grouped in multiple arc for the supply of Swan incandescent lamps, and others for both regulator arc-lamps and Jablochkoff candles. As each different class of lamps has its own circuit quite distinct from the others, all sorts of electrical apparatus can be readily used without difficulty. This constitutes an important advantage over the system of direct supply, as arc and incandescent lamps can not be successfully worked in the same circuit. The only way in which the two can be supplied by the same street conductors is by the use of the secondary battery. No tests of the loss due to the secondary generator system have yet been published, and we can not therefore estimate its economic value. The extreme flexibility of the system, however, will give it a prominent place in the distribution of electricity, if this loss be not too great.

The storage-battery system of distribution for incandescent lamps has made but little headway during the year. Despite the flourish with which successive improvements in secondary batteries have been announced, this apparatus is still in an experimental shape. Experience has shown that the battery deteriorates rapidly in use, its first cost is high, and its return is too low to make its use as an element in a distributive system economical. Whether it can be converted into a practical commercial apparatus remains to be seen, but the present opinion in the electrical world is not hopeful of its future.

ENGINEERING. The year 1883 saw the completion in the United States of two of the most remarkable high-level bridges in the world, one of the wire-suspension type, identified with American engineering, the other on the cantilever principle, a new and important development, the merit of which may be ascribed more particularly to the English school of engineers. Two more of the great transcontinental railroads were completed within the year, and American enterprise is pushing the reticulations of the American railroad system into Mexico. A great ship-canal is projected across the isthmus of Florida. The Congress of Nicaragua in October, 1883, authorized the Government to guarantee, in association with the other governments of Central America, 3 per cent. interest on the capital of the projected Nicaraguan canal for twenty years after the completion of the canal, which capital shall not exceed $75,000,000.

In Europe the Channel tunnel project was condemned on strategic grounds by a Parliamentary Commission. The Manchester ship-canal met with political opposition, and the project has been altered from that of a tidal water-way for ocean-steamships to a plan for a canal with locks, which would accommodate barges and some of the smallest of the transatlantic steamers. The obstruction of this promising scheme illustrates the difficulty of carrying out great public improvements in Great Britain, where monopolies not only wield political power but possess, as "vested interests," a legal status, which is not accorded to an equal extent in any other state. The "plateway" between Liverpool and Manchester has been given up. The third great Alpine tunnel has been bored by the Austrian Government. The works on the isthmus of Corinth and Panama canals are progressing, and under the same auspices the project of inundating the Algerian *chotts* is assuming definite shape. The Suez-canal controversy has given rise to several projects, the most probable and practicable of which is that of enlarging the present canal and building a second one of equal size to accommodate the return traffic. In Germany a canal is proposed from Strasburg to the Rhine, which, by connecting with the French system of canals, would establish water-communication between the North sea and the Mediterranean.

The old project of a Euphrates valley railroad has been taken up by the Sultan, who believes that such a railroad would in Asia have turned the scale of victory in the last Russian war. The latest plan is that of Lerkis Bey Ballian, who proposes to carry the line from Saladieh (Seleucia), at the mouth of the Orontes, to Bagdad, 690 miles. Another, the Caralet project, would make the western terminus at Alexandrette, opposite Cyprus. There are several others, new and old. The promoters must be satisfied in their demands on the Porte with extensive land-grants like those given to railroads by the United States Government. The improvements of the Danube are to be extended as far as practicable up to the Iron Gate, and the dangerous reefs in that remarkable chasm, which necessitate the unloading and reloading of steamers passing through, are soon to be cleared away.

The harbor-works at Trieste, which have taken fifteen years of labor and an expenditure of $7,300,000, were completed in 1883. By running out three piers, 700 feet long and from 250 to 275 feet broad, the old roadstead, which was exposed and insecure, was converted into three basins, 85 acres in extent each, with from 26 to 43 feet depth of water. A mole 3,600 feet long, running parallel with the shore at the distance of 1,000 feet, protects the harbor from the northeast, southeast, and southwest winds. A pier 250 feet long, projecting in the direction of the northeast end of the breakwater, at right angles to it, gives a protected entrance to the haven 315 feet in width. The length of quays in the basins is about two miles. The soil is so unstable that the quay walls had to be reconstructed about a year after they were built. The Italian Government is engaged in naval harbor works on an

extensive scale. In Belgium and other countries harbor improvements are in progress. The proposed tunnel under the strait of Messina will have a total length of 13,546 metres, of which 4,688 metres lie under the strait. The estimated cost is $14,200,000. A bold scheme for a bridge across the strait, with spans of over 1,000 yards, also finds advocates.

Enlargement of the Suez Canal.—The question of widening or duplicating the Suez canal to accommodate the traffic which has outgrown its capacity, is still in the phase of political controversy, and in its politico-commercial aspect is treated in the article on the SUEZ CANAL. The opposition which seeks to nullify the franchises and abrogate the concessions of the Suez Canal Company, on such fallacious grounds as that the exclusive right to construct "a" canal meant "one" canal, or that, if other companies were debarred, the Egyptian Government could make a new canal, on the arbitrary plea that Said Pasha had no sovereign right to grant privileges over an international highway, or the simple argument of might, finds its *animus* in the desire of British ship-owners to compel the company to reduce the rate of toll allowed in the concessions, just as in the early period of its operation they compelled the directors of the canal to adopt the Moorsom system, which deducts the space occupied by engines, fuel, etc., in rating the capacity of vessels, instead of levying ten francs a ton on the real capacity of a ship. M. de Lesseps was less alarmed at the threats of an alternative canal, from the fact that his canal occupies the *Thalweg* of the isthmus.

Of the different schemes to take the improvement out of the hands of the Suez Canal Company that were proposed, those which took no account of the rights of the company were naturally of a bold and visionary character. The project of a fresh-water canal from Alexandria to Suez by way of Cairo was recommended on the ground of its combining irrigation with navigation. It was formerly entertained by the Khedive Ismail. But, aside from its cost, it was out of the question to expose the great and increasing commerce of the Suez route to the delays and accidents of a long canal, whose navigability depends on the workings of a system of locks. A still more adventurous scheme is that proposed by Gen. Gordon, to create a new passage from the Mediterranean to the Red sea by flooding the depressed valley of the Jordan. This scheme was broached twenty years ago, and was objected to not only on religious grounds, but from the stand-point of engineering science. Calculations were made to show that it would take a full century for a stream 90 feet broad and 15 feet deep to fill the depression, owing to the extraordinary evaporation and absorption in that region. Gen. Gordon, after studying the natural conditions of the Jordan valley, came to the conclusion that by cutting a canal 60 yards wide and 3 yards deep from Haifa, the gulf of Acre, to Zenn, 25 miles, and another from the head of the gulf of Akabah to Ain Gerundel, 40 miles, the intermediate depression, 325 cubic miles in extent, will be flooded in nine months' time. The inland sea, thus created, filling the Jordan bottom and Dead sea basin from Lake Huleh to Ain Gerundel, with the two short cuttings, which could be dug at a cost of $55,000,000, including port works at Herifa, would furnish a navigable water-way through which vessels could steam at full speed in a minimum depth of 40 feet of water. It would be scarcely wider than the Dead sea, and would submerge only a small portion of the fertile lands of the Jordan valley, and none of the important sites of religious interest. Many other advantages, commercial, political, and sanitary, are adduced by the advocates of this scheme.

The alternative scheme, of a second canal constructed across the isthmus with English capital, to compete with the Lesseps canal, would have serious financial and technical problems to solve, after overriding the legal difficulty and braving the danger of a rupture with the French Government. Shut out from the Great and Little Bitter lakes and Lake Timsah, a canal of sufficient section to suit the present requirements of navigation would require three times as much excavation as the Suez canal did, and without the forced labor which M. de Lesseps had at his command. The Suez Company would be unwilling to convey the plant and supplies to the different points along the line. There would also be two new entrance-ports to create at an enormous cost.

As relates to the improvement of the Suez canal, the practical problem in engineering resolved itself into the question whether it would be better to enlarge the present canal or excavate a new one by the side of it. The second proposal had the recommendation of greatly diminishing the risk of a total stoppage of the route, of obviating the necessity of stopping at sidings to allow other vessels to pass, and also the danger of collision between vessels going in opposite directions; on the other hand, it had the disadvantage of requiring more labor and outlay, and of increasing the working expenses for supervision and administration, and for repairs.

The Works Committee of the Suez Canal Company, in January, 1883, adopted the following programme of improvements which were expected to double the present capacity of the canal:

Rectification of the west bank of the channel of the outer port of Port Said; formation of a new basin at Port Said; widening of the canal in the passage of the small Bitter lakes; widening of the canal between Suez and Kilomètre 152; doubling of the Ismailia station; embankment of Kantara station, and of the station at Kilomètre 133; rectification of the eastern curve of Timsah station; also of the southern curve of the small lakes; also of the northern curve of El Guisr; also of the curve of Toussoum; widen-

ing of the canal off Port Tewfik; deepening of the basin of Port Tewfik; and the continuance of the masonry-work.

They at the same time suggested the advisability of cutting a second canal parallel to the first, in anticipation of a still greater traffic. This scheme was the subject of the negotiations between M. de Lesseps and the British Government. The section of the Suez canal is too small for vessels of such dimensions as are now built for the Indian and Australian trade, irrespective of the question of overcrowding and blockades. The passage is too narrow and shallow to allow them to steer properly, particularly at such a slow speed as five knots an hour, the maximum in the present canal. It was on this account that the English ship-owners, in their conferences with M. de Lesseps in the latter part of the year, urged the necessity of enlarging the section of the present canal as more pressing than that of separate channels for vessels going in opposite directions. He promised to meet their views and have the plans for the improvements drawn up on the basis of an enlargement of the present canal, which will take precedence, and a correspondingly larger sectional area in the projected parallel passage.

Isthmus of Corinth Canal.—The Isthmus of Corinth canal, which was begun in the spring of 1882, and is expected to take four years, proceeds with greater rapidity since the introduction, in the autumn of 1883, of gigantic steam-excavators constructed in France. The length of the canal is 6,342 metres. Its depth and width are the same as those of the Suez canal. It will save ships from the Adriatic trading with Greece, Turkey, the Danube, or the Black sea, as much as 185 marine miles, and those from the Mediterranean and Atlantic about half that distance. At present 5,800 large steamers and 300 war-vessels, besides a large number of sailing-craft, sail around Cape Matapan every year, enough to furnish the canal, to begin with, a traffic of nearly 6,000,000 tons. The site of the new town of Isthmia, at the Ægean outlet of the canal, is exceedingly healthful. There was no mortality among the workmen from climatic causes during the first year's operations.

Sahara Sea.—M. de Lesseps, after a personal examination of the route of the canal with which Commandant Roudaire proposes to inundate the *chotts* of Tunis and Algeria, declared his adhesion to the project, which he has favored from its inception, and aided in its preliminary stages. The *chotts*, or alkaline basins, depressed below the level of the Mediterranean, extend in an irregular chain from Gabes to the town of Biskra in the desert, 300 miles inland. The large lake which would be formed by flooding the depressed area would be not less than 2,000 or 3,000 square miles in extent, and deep enough to float the largest vessels, which could enter easily by the nearly straight canal. The creation of such a landlocked sea would render fertile a broad belt of desert-land to the north, constituting the whole interior of Algeria and Tunis, where there are numerous fresh-water wells, and where nothing but rain is wanted to make the soil exceedingly productive. The cutting would be through sand, except in some places where a calcareous rock is met with; which, however, is hardly more than sufficient to furnish materials for breakwaters, piers, and buildings. The total cost is estimated by M. de Lesseps at 150,000,000 francs, and the time to complete it five years.

Panama Canal.—The works on the Panama canal are progressing, though, from the inability of M. de Lesseps to raise a new loan in the spring, it is evident that the feasibility of carrying out some important features of the original plan is doubted. The reports of the director-general, M. Dingler, on the excavations are encouraging. The quantity of earth to be removed is placed at 100,000,000 cubic metres, instead of 80,000,000 as previously estimated; but the absence of the expected rock excavation, and the looseness of the soil, reduce the estimated cost from 10 francs a metre to about one third of that rate. Much of the excavation is done by negro laborers, who work more cheaply than the machines which were brought for the purpose. M. de Lesseps estimates the total cost at 500,000,000 francs, not including the reserve fund of 100,000,000 francs for unforeseen expenses. He asserts positively that the canal will be completed within the five years originally calculated, which end in 1888.

The proposed high dam in the valley of the Chagres is one of the most dubious features in the canal plans. The reservoir at high water is to cover an area of 6,750 acres, and contain 1,000,000,000 cubic metres of water. The directory has abandoned the idea of building the canal without locks, and determined to make a lateral canal and three locks at Panama.

The total length of the canal from the Atlantic to the islands of Naos and Flamenco, where it joins the Pacific, is 74 kilometres. It is divided into 12 sections, the most important of which are Colon, Gorgona, Obispo, Emperador, Culebra, and Paraiso. On all the sections 30 steam-excavators, 40 locomotives, and 800 tip-wagons were at work in the autumn. The force of laborers was then 10,000 men, which number was expected to be augmented at the beginning of the fine season in December to 15,000. About two thirds of the grand cutting between Obispo and Paraiso was excavated by Oct. 15th. It is expected that in 1884, when all the machinery will be on the ground, the excavations will proceed at the rate of 4,000,000 cubic metres a month. On Oct. 15th the harbor-works at Colon were nearly completed. An entire town had sprung up there, with numerous workshops and warehouses, and connecting railroads for the distribution of material. The *terre plein* and breakwater were finished. A cutting was opened at the spot

called Monkey Hill, with the object of filling up the lagoons at the bottom of the bay of Colon, in order to improve the sanitary conditions. The 120 horse-power dredgers remove, each of them, 6,000 cubic metres of earth a day. The machines of the Franco-American Trading Company, which were built in Lockport, N. Y., excavate 2,000 metres. This company has contracted to dig the Pacific opening from the mouth of the Rio Grande to Paraiso within the term of two years.

Florida Ship-Canal.—A project for a tide-water canal across the upper part of the Florida Peninsula has been taken up by a company formed for the purpose. The commercial prospects of this canal are more encouraging than those of the again intermitted Cape Cod cutting, for the 800 miles of navigation which it will save were described by Commodore Maury as being as dangerous as any in the world. The annual losses from wrecks on the southern coast of Florida are computed to amount to $5,000,000. A saving of 1 per cent. in insurance is therefore counted on. The commerce which goes through Florida Pass annually is said to be three times as great as the traffic of the Suez canal. The route selected is from a point on the Suwanee river, to a point above Jacksonville on the St. John's river—a distance of somewhat over 60 miles. The estimated cost is $20,000,000.

The Iron Gate.—The removal of the obstructions in the cataracts and narrows of the Danube, called the Iron Gate, at the point where the Austro-Hungarian, Servian, and Roumanian boundaries meet, was attempted in 1781, and again in 1834. The scheme has been deferred up to the present in pursuance of the protective policy of the Austrian and Hungarian Governments, which feared the competition of foreign manufactures, and even of American grain. In 1883 it was again taken up, and arrangements were made for the final execution of this important and difficult work of engineering. On June 4th, an accord was reached between the Austrian and Hungarian ministries, in a conference at Vienna, by which the Hungarian Government undertook the regulation of the river. The agreement of Servia and Roumania was obtained. The cost is to be reimbursed by the levy of tolls for the period of ninety years. The various estimates range from 10,000,000 to 22,000,000 florins. The general plan which was adopted was worked out by the American engineer MacAlpine.

Diversion of the Syr Darya.—Schemes for changing the course of the Syr (Jaxartes) and that of the Amou (Oxus) have been under the consideration of the Russian Government for some time. Both of the principal rivers of Turkestan have followed different channels at different periods. The partial diversion of the Syr into the bed of the Jany Darya is a work of no great difficulty, as it was accomplished by the Kara Kalpaks about 1760. The river was turned into its former course by means of a dam constructed in 1837 or 1838, by order of the Khan of Khiva, to prevent the Russians from using it as an avenue of approach to his capital. In 1853 the Russians broke the dam and allowed the waters to flow into the dry bed of the Jany Darya, but finding that the Syr Darya was rendered too shallow for steamboat communication, they restored the work. In 1883 a channel was reopened, and the water soon penetrated as far as Irkibai. Whether the main volume of the river can be diverted into the new course, and whether it can be made to flow into the Amou or the Sea of Aral, is still doubtful. The work already accomplished will restore fertility to a large portion of the Kizil Kum desert, and improve the military and caravan communications with Khiva and the Amou Darya station.

Drainage of Lake Okechobee.—The reclamation of swamp-lands on an enormous scale has been undertaken in Florida by an association of American and English capitalists. The Florida Land Improvement Company, organized by Hamilton Disston, of Philadelphia, in addition to 4,000,000 acres of State lands which were obtained by purchase, selected, and in great part resold, one half being taken by an English syndicate and several hundred thousand acres of the remainder by other purchasers, received authorization to drain the Okechobee district, covering 11,000,000 acres, on terms giving the company for its service one half of the land reclaimed. There are some sections in the overflowed lands, as well as in the pinelands of Southern Florida, which are supposed to be as well adapted to the cultivation of sugar as any soil in the world. The cane can be harvested in saccharine maturity, as the region is south of the frost-line; but whether it will propagate itself for a succession of years by ratooning, as in Cuba, is not yet established. These lands are also suitable for jute, which is grown in Florida of a superior staple and luster. The feasibility of draining Lake Okechobee was established in 1879, in a survey ordered to be made by the Federal Government. Col. Meigs, who conducted the survey, calculated the level of Lake Hickpochee, connecting with Lake Okechobee, to be 22 feet above mean low tide. A survey made in 1881 demonstrated that the elevation of Lake Okechobee above the low-water level of the Atlantic ocean was 25 feet. When Lake Okechobee overflows its banks and backs the waters of its numerous tributaries, submerging the entire surrounding country, a portion of the overflow finds its way into the Gulf of Mexico by sluggish and tortuous channels through Coloosahatchie river and other outlets. The company began to cut a canal from the Coloosahatchie in January, 1882, and made connection with the lake on Dec. 10, 1882. A steady current set through this channel, which relieved a large surface of swamp-land adjacent to the

lake, and lowered the level of the neighboring lakes. The outlet canals connecting Okechobee with the Coloosahatchie river are to be made navigable. The first one made is 52,000 feet long. The company next deepened and straightened the Kissimmee and Little rivers which connect the Tchopekaliza lake with Okechobee. Canals 6 feet deep were cut, and a current was obtained of 2½ miles an hour. By May, 1883, the level of the upper lake had fallen 5 feet. At that time 380,000 acres had been redeemed. The excavation was done entirely with steam-dredges.

Hull Harbor Improvements.—The new dock at Hull is intended to meet the growing demands of a port which, next to London and Liverpool, has the largest commerce of any in the British Islands. In connection with the New Barnsley railway, running to the Yorkshire collieries, the new dock enables Hull to become a large coal outport. The Humber brings ships of deepest draught up to Hull at any state of the tide. Besides the river Hull, which winds through the town and constituted the old harbor, but which is available only for small vessels at high water, there were seven wet docks with a total area of 76½ acres. The new basin, called the Alexandra dock, is 46½ acres in extent, and a new one in course of construction contains 10½ acres, giving the city a total area of wet-dock accommodation of 133½ acres. The Alexandra dock will accommodate the large vessels engaged in the grain-trade with California and India. To construct it, 150 acres of the foreshore were reclaimed by embanking, of which 100 acres are occupied by the wet dock and two graving docks, their quays, warehouses, roads, railways, etc. The works have a frontage on the river of 6,000 feet, and a depth of 3,500 feet. The dock is 2,300 feet long by 1,000 wide. It is entered through a lock 550 feet long and 85 feet in width, having three pairs of gates and a caisson at the entrance. The sea-bank between the basin and the river is 1½ mile long, being composed of 200,000 tons of chalk, faced with stone, with an outward slope of one in two. The trumpet-shaped entrance, 360 feet wide, is formed by timber wharves built upon creosoted piles. The depth over the sill is 34 feet at high spring-tide. There are two jetties 400 feet long, and one of 450 feet, within the dock. All the cranes, capstans, and other appliances, as well as the gates, valves, and sluices, bridges, and hoists, will be worked by hydraulic machinery. This is already applied in a novel manner in the work of excavation. A hydraulic navvy is used, which is capable of removing 600 to 700 cubic yards of earth a day. Unlike the steam navvy, it can not be thrown out of order by giving it more work than it can do, as it stops when driven beyond its capacity, so that it can not get strained. Another advantage is that it takes only two men to operate it. It is self-acting, depositing the earth in tip-wagons on either side as fast as they can be unloaded and brought up again. Hydraulic power is used also in drawing the barrows which bring the excavated material up an incline to the banks, where it is used for filling up. The larger of the two graving docks is 550 by 65 feet at bottom, with 21½ feet of water on the sill; the larger one is 512 by 81 feet, with 19½ feet of water. The pumping-engines used in emptying the dry docks are employed also in maintaining the water in the main dock at the proper level, the supply being drawn from an inland stream which is freer from sediment than the Humber.

Arlberg Tunnel.—The headings met in the great tunnel through the Arlberg in the Rhætian Alps on Nov. 14th. The tunnel is nearly 6½ miles long, taking rank immediately after the St. Gothard and Mont Cenis tunnels. The exact length of the new tunnel is 10,270 metres, that of the Mont Cenis tunnel 12,323, that of the St. Gothard tunnel 14,900. The object of the work is to shorten the distance between Austria and Switzerland, and to give Austria direct communication with the railroad systems of Western Europe and render her independent of the South German railroads over which the traffic has hitherto had to pass. Starting from Innspruck, the new line is carried along the right bank of the Inn to Landeck. At that point the difficult part of the work began. From Landeck to St. Antoine, where the road enters the tunnel, the total rise is 1,721 feet. The gradient in the valley of Rosanna is one in forty. The distance between Landeck and Bludenz, the other terminus of the road, on the opposite side of the Arlberg in the Austrian province of Vorarlberg, is 35 miles. This section is a mountain railroad all the way. The Panznau valley is crossed by a bridge of three arches, each of 197 feet span. The tunnel first planned by Gen. Nordling, who surveyed the route, was a smaller one higher in the mountain; but the Austrian Government determined not to spare expense in a work of so great political and commercial importance, and the tunnel was made longer, in order to lessen the grades, and wider, so as to accommodate two tracks instead of one.

The work of boring began in June, 1880, on the Austrian side. On the Swiss side the heading was started in September of that year. The perforators used on the Austrian side were percussion drills, constructed on the same system as the machines employed in boring the Mont Cenis and St. Gothard tunnels. A series of 20 or 25 chisels, covering a space of 7 square metres, were driven into the face of the heading with blows imparted in rapid succession by compressed air. The machines were actuated by turbines at the end of the gallery. The chisels penetrated the rock from 1½ to 2 metres. The holes were then filled with dynamite and the blast exploded, lengthening the drift about 1½ metre. The perforators moved on wheels. The compressed air was applied

under a pressure of five atmospheres through flexible tubes. On the Swiss side the new Brandt perforator was employed. This machine excelled the performance of the Ferroux apparatus used at the other end, which is the latest improvement in the percussion perforator. The new perforator consists of six or eight veritable drills, with a diameter of 70 millimetres, which bore into the rock with a rotary movement under a hydraulic pressure of from 60 to 100 atmospheres. The difference in the speed at which the work proceeded in the different Alpine tunnels shows the progress made in boring machinery. The Mont Cenis tunnel advanced at the rate of 3,637 feet a year; the St. Gothard at the rate of 5,474 feet; and the Arlberg at the rate of 7,080 feet. The improvements reduce the expense in a still greater ratio, the Arlberg tunnel having cost only $750 per lineal metre, as compared with $1,250 per metre in the St. Gothard, and $2,000 in the Mont Cenis works; although a part of this saving was due to the relative shortness of the Arlberg bore.

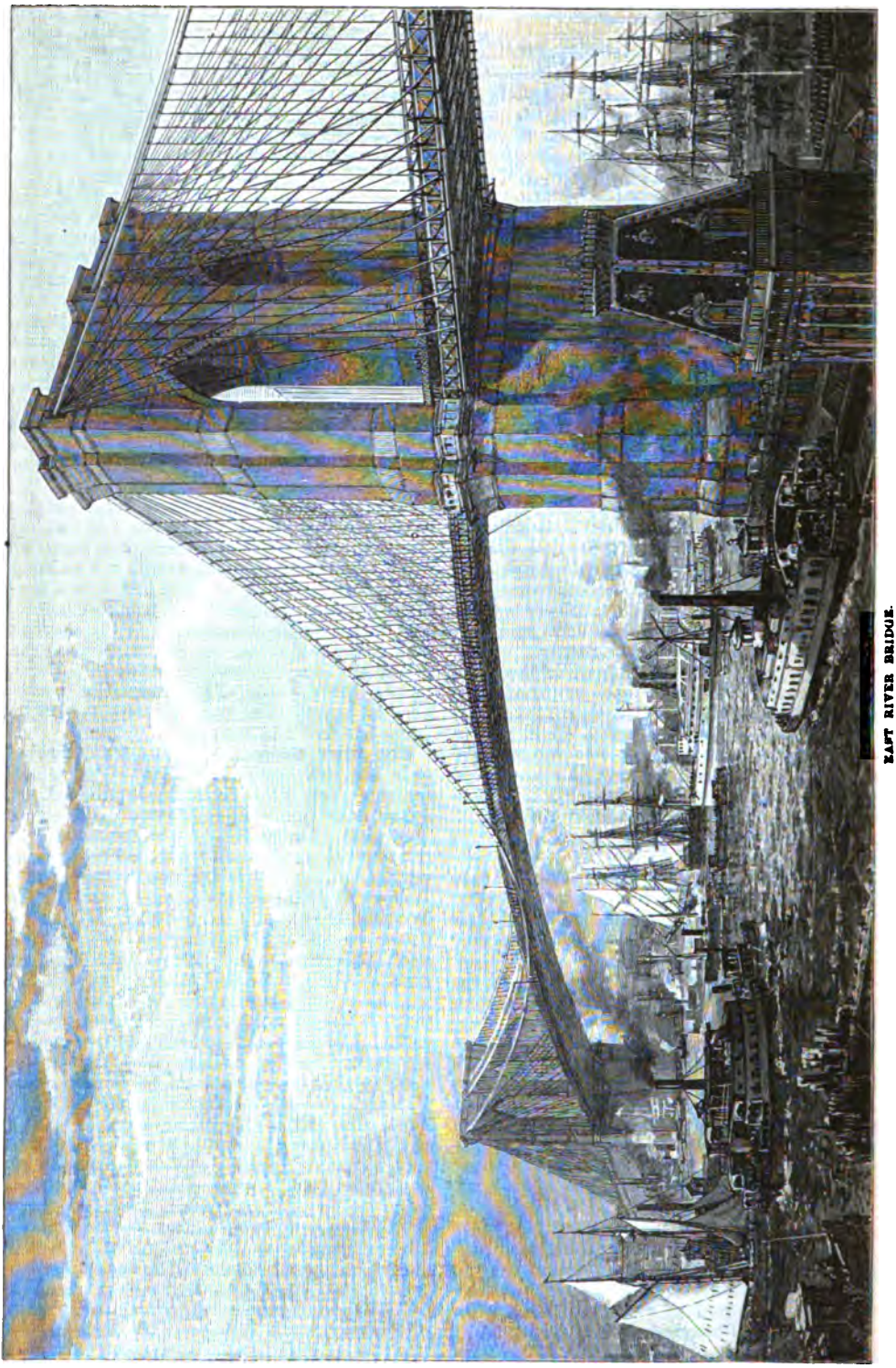
The work of carrying away the excavated material in mountain tunneling is as difficult, and consumes quite as much time, as that of excavating. The gases from the explosives render this task unwholesome and sometimes dangerous. In the Arlberg the miners escaped ill effects by covering their mouths and nostrils with sponges steeped in vinegar.

At first, owing to the hardness of the rocks on the western side, and to the inflow of enormous quantities of water, the stipulated rate of progress, about ten feet a day, could not be made; but after the water was subdued the advance was more rapid than the prescribed speed. The gallery was driven on a level with the bottom of the tunnel, and not, as formerly, on the Belgian system, i. e., on a level with the top. The cost of the tunnel itself is estimated at 18,000,000 florins, including the premiums earned by the contractors for early completion, in which premiums they allowed their workmen to share. The cost of the whole line will be about 40,000,000 florins.

Mersey Railway Tunnel.—The headings of the tunnel under the river Mersey met in the center before the end of the year. Though insignificant in length, the river being less than a mile broad at that point, this tunnel is a work of great difficulty, owing to the low level at which it has to be carried under the deep waters of the Mersey, the toughness of the new red sandstone, the amount of pumping necessary to remove the immense quantity of water which perforates through this porous rock, the work of lining the gallery to stop this inflow, and the precautions which were necessary against a possible fault in the geological formation and the inrush of water from the river. Fortunately, the stratum was found to be continuous. The roof of the tunnel is separated from the bed of the river by a thickness of 30 feet. The length of the tunnel is 1,753 yards. The seven-foot heading was excavated partly with Col. Beaumont's boring-machine, which was set for ⅛ inch per revolution, equal to ¾ inch per minute, which was a slower speed than was made in the gray chalk of the Channel tunnel. Through this seven-foot drift-way the water which entered flowed down the incline to the shaft at each end and was got rid of by means of the steam-pumps. The tunnel was excavated at a higher level, the work proceeding at some distance in the rear of the advance of the drift-way. The tunnel is semicircular, and has a breadth of 26 feet and a height of 20 feet above the rails, the radius of the curve varying from 40 feet at the base to 18 feet in the arch. The gallery, as it was quarried out, was lined all round with massive walls of brick and cement. The heavy blocks of stone, which were blasted out with gelatine, were removed on cars in a constant rotation. On the Cheshire side, where the Beaumont borer was used, a compressed-air locomotive of Col. Beaumont's invention was employed to remove the excavated rock.

Hitherto the only connection between Liverpool and Birkenhead, where the railroads of Cheshire and Wales converge, has been by ferry. Various plans for carrying a railroad across the Mersey, by a high bridge or a tunnel, have been proposed by engineers before. The tunnel finally constructed is the shortest and most direct route, one end emerging in the center of Liverpool, and the other in the center of Birkenhead. The grades are consequently heavy. The tunnel is expected to be opened to traffic in 1885.

East River Bridge. — The suspension-bridge over the strait called the East river, which separates New York from Brooklyn, on Long Island, was completed and formally opened on May 24th. The project of a bridge to connect the two cities and furnish safe and rapid communication, was originally brought forward by William C. Kingsley, President of the Bridge Trustees, and Henry C. Murphy, his predecessor in office. Mr. Kingsley selected the site, and had plans and estimates prepared, as early as 1865. The Bridge Company was organized in 1867, with a nominal capital of $5,000,000, the amount of the preliminary rough estimate of the engineer, $500,000 of which was subscribed by citizens who formed the company, $3,000,000 was to be furnished by Brooklyn and $1,500,000 by the city of New York. In 1875 the bridge was made a State work, and placed in charge of a board of trustees. John A. Roebling, the originator of wire suspension-bridges, was the engineer. His estimates in 1867 made the cost of the bridge $7,000,000, and of the approaches $3,800,000. The estimated time of construction was five years. A commission of bridge engineers approved his plans. Congress passed an act in 1869 authorizing the construction, and in June of that year the Secretary of War decided that it would not impede navigation, providing



EAST RIVER BRIDGE.

five feet were added to the clear elevation proposed in the plans. This requirement, together with an increase of five feet in the breadth, added 8 per cent. to the original estimates. Other changes in the designs, which swelled the actual cost to nearly $15,000,000, were the adoption of solid masonry for the approaches, instead of light iron trusses, and the sinking of caissons for the towers, instead of erecting them on a foundation of piles.

There were many hindrances and delays in the work of construction. In addition to the enormous and to a considerable extent unexpected technical difficulties, differences frequently occurred between the two municipalities, and occasionally appropriations were not granted in time, so that the work had to be suspended for long periods. The piers were built up by the aid of caissons of unprecedented size. The dimensions of the towers at the base are 140 by 59 feet. The New York tower was founded on the bed-rock, 78½ feet below the surface of the water. The Brooklyn tower was built up from the clay, 44½ feet below the surface. The lowering of the Brooklyn caisson began in May, 1870, and was completed in March, 1871. The New York caisson was towed into position in October, 1871, and sunk to the rock by the May following. The erection of the enormous towers was a work of time. The Brooklyn tower was finished in May, 1875, and the New York tower in July, 1876. The towers are each pierced by two archways 31½ feet wide at the height of 118 feet above high-water mark. Through these openings passes the floor of the bridge. Above the arches, which are 120½ feet high, the partitions reunite, and the towers rise 30 feet higher, to support the saddles which sustain the cables. The total height of the towers above the surface of the water is 276 feet. The height of the bridge-floor over high-water mark is 118 feet at the towers, and 135 feet in the center of the span.

The four cables are 16 inches in diameter, and contain about 5,000 single wires each. The wire is of ⅛-inch size; 278 single wires were grouped into a rope and 19 ropes bunched to form a cable. The wires were carried forward and back from anchorage to anchorage over the towers. The sun, expanding the more exposed wires, and the wind, rendered the nice work of forming the ropes with mathematical exactness exceedingly difficult. The work of stringing the wires began in June, 1877, and was completed in October, 1878. On one occasion a bundle of wires broke away from the anchorage and shot across the tower, falling into the river. The iron saddles on which the cables rest are made movable, to permit of expansion and compression on a saddle-plate of iron firmly imbedded and anchored in the towers. The saddles are 13 feet long, 4 broad, and 4½ thick. They glide through minute distances in response to strains and changes of temperature, upon 40 iron rollers.

The anchorages are 930 feet from the towers on each side; they are solid masses of masonry, each 132 by 119 feet at base and top, 89 feet high, and weighing 60,000 tons.

During the construction of the bridge 20 fatal and many disabling accidents occurred. The compressed air of the caissons caused over 100 cases of caisson-disease. The victim of the first accident was Engineer Roebling, who died from lockjaw resulting from a crushed foot, received when laying the foundations of one of the shore-piers, July 22, 1869. His son, Washington A. Roebling, took charge of the work, but in 1871 he was prostrated with a peculiar form of caisson-disease which destroyed the nerves of motion, the result of a fire in the Brooklyn caisson in 1870. This fire necessitated the flooding of the caisson, and delayed the work two months. After his accident Mr. Roebling never was capable of active work. His intellectual faculties, however, were unimpaired, and he was able to make the plans and calculations, and to superintend the construction, through the mediation of his wife. It was not until 1876 that he was sufficiently restored to be removed, after which he remained in view of the bridge, directing the work, though for a long time after that he was still incapable of locomotion.

The total length of the bridge and approaches is 5,989 feet. Of this the middle span takes up 1,595 feet, the distance between the towers and the anchorages on each side 930 feet, and the approaches 1,562½ feet on the New York and 972½ feet on the Brooklyn side. The length of the suspended structure, from anchorage to anchorage, is 3,454 feet. Its total weight is 6,470 tons. The maximum load which it is designed to bear is 1,740 tons. The ultimate resistance is calculated at 49,200 tons. (For other measurements see "Annual Cyclopædia" for 1882.)

The bridge is divided into five avenues. The central one, 15½ feet in width, is the path for foot-passengers. The two outer ones, 19 feet wide, are for vehicles. The others are laid with the rails for the cars, which are drawn by an endless chain. They are attached and detached by means of a "grip" arrangement.

Niagara Cantilever Bridge.—A double-track railroad-bridge over Niagara river, about 300 feet above the railroad suspension-bridge, completed in November for the New York Central and Michigan Central Railroads, is constructed on the new cantilever principle, which is that of a balanced beam. In the perfect cantilever, represented by the bridge now building over the Forth, in Scotland, of which a description is given below, the diagonally-braced frame of the cantilever is exactly poised on the upright iron columns in the center. In the Niagara bridge, designed by C. C. Schneider and Edmund Hayes, the abutting banks are made use of to attach the shore ends to a mass of masonry which counterpoises the extra weight of the river arms, and stays and anchors the

NIAGARA CANTILEVER BRIDGE.

entire structure, and the two arms of the cantilever are different in length and in details of construction. The cantilever type of high-level bridges is a development of the use of cast-steel, which combines with rigidity a tensile elasticity that enables it to resist lateral strains to a certain degree. Like the suspension-bridge, the cantilever span can be carried over places where, as in the Niagara chasm, it is impossible to erect temporary supports. The two gigantic steel towers which bear up the cantilevers of the Niagara bridge are 132½ feet high, and rest on stone piers 39 feet high. They are composed of four columns of plates and angles riveted together, braced with horizontal struts and ties. They converge upward with a batter of 1 in 24 in the direction of the length of the bridge and 1 in 8 at right angles to the middle line of the bridge. The cantilevers are each 395 feet in length. A space of 120 feet between the river ends of the cantilevers is spanned by a girder resting on the extremities of the arms. The total length of the bridge is 910 feet between the centers of the anchorage-piers. The clear span between the towers is 470 feet. The height of the bridge is 239 feet from the surface of the river to the rail. The cantilevers are composed of two trusses, 28 feet apart, having a depth of 56 feet at the towers, 26 feet at the extremities of the river arms, and 21 feet at the shore ends. The materials used in the bridge are steel and wrought-iron, the former for the towers and the lower chords, center posts, and all the pins, and the latter for all the tension members. The steel pins connecting the members fit into the bored holes with the utmost accuracy. The lower chords and center posts are latticed channel-plates. The upper chords are heavy eye-bars. A compression member is packed between the chords of the shore arms. The shore ends of the beams are anchored to masonry abutments by short links, which serve also as expansion-joints. Joints are provided also at the connection of the intermediate span with the river ends, to allow for contraction and expansion due to changes of temperature. The floor-beams are wrought-iron plates and angles, 4 feet deep, riveted between the vertical posts. On these rest four lines of stringers, consisting of plate-girders 2½ feet deep. The width of the floor is 32 feet, a plank walk and iron railing at the side of the tracks being supported by the white-oak ties, one half of which project beyond the tracks for the purpose. Each column of the towers stands on a limestone pier, 12 feet square at the top and battering 1 in 24. The piers are connected by walls 3¼ feet wide at top. The courses of the piers are 2 feet deep. The foundations are a solidified mass of bowlders, *béton*, and cement, 20 by 45 feet and 8 feet deep under each pair of piers. The anchorage-piers are 11 by 37½ feet under the coping, and consist of blocks of masonry, each measuring 460 cubic yards and weighing 1,000 tons, raised upon 12 iron plate-girders 2½ feet deep and 36 feet long, resting in turn on 18 15-inch I-beams through which the anchorage-rods pass in such a way that the pressure is distributed evenly over the entire mass of masonry. The maximum uplifting force of the cantilevers is 678,000 pounds, or only about one third of the weight of the piers.

After the towers were built, the shore arms were constructed by the aid of temporary structures, in the usual way. After they were completed and attached to the anchorages, the river arms were built out over the river, one panel at a time, by means of huge traveling steam-derricks. When each panel was constructed and braced, the traveler was moved forward and the next panel erected. The intermediate 120-foot span was specially designed with bottom compression members so that it also could be built out from the end of each arm by the aid of temporary stays, which were removed when the two halves of the girder were fitted together in the middle.

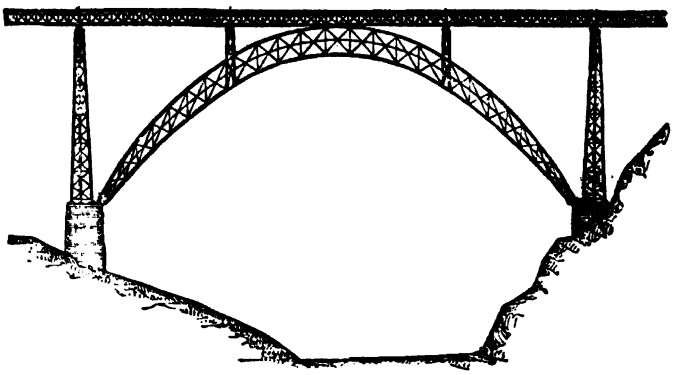
The bridge is designed to bear a running load of a ton per lineal foot, that being one fifth of the calculated ultimate resistance, and for a wind pressure of thirty pounds per square foot on twice the exposed face of the truss, floor, and train.

Forth Railway-Bridge.—The completion of the Niagara cantilever bridge lends interest to a description of the one over the river Forth at Queens Ferry, in Scotland, which was begun in 1883. The engineers of Great Britain, to whom the development of the cantilever principle is due, have never taken kindly to the suspension principle, just as they are in general skeptical of the stability of the lighter structures which American engineers design for equal stresses. Yet, after condemning the principle for a whole generation, while the Niagara suspension-bridge stood as a practical demonstration of its soundness, at last Sir Thomas Bouch adopted the American idea in his design for the projected bridge over the Forth. The river was to be bridged by two suspension spans, with towers nearly 600 feet high, one on each bank and two on the island of Inchgarvie in the middle of the estuary. The foundations were already dug, when the Tay bridge disaster first brought to the knowledge of engineers facts relating to the intensity of wind-strains which meteorologists had already published to the world. The designs for the suspension-bridge, whose author was the designer also of the collapsed Tay structure, were discarded. Fowler and Baker, the new engineers, drew plans for a cantilever truss double-span bridge, all of steel, which will be the most stupendous structure of its kind. The material is tested for an ultimate resistance of thirty tons per square inch in tension, and thirty-four tons in compression, and the structure is planned to sustain four times the combined strain of a wind pressure of fifty-six pounds to the square foot and a maxi-

mum running load of two tons to the foot, or 3,400 tons on a span. The breadth to be spanned in the Forth is not much more than half that of the Tay at Dundee, where the new bridge, which will cost about £750,000, is making rapid progress and is expected to be finished in 1885. But the channels on the two sides of the island of Inchgarvie are about 200 feet deep, and must therefore be crossed by spanning the entire breadth of some 1,600 feet on each side. Three balanced cantilevers are sufficient to accomplish this. Two of them rest on piers erected at the edge of the channel on each side of the river, and one on the island. The cantilever has the shape of an elongated diamond. There are four masonry piers to support the four gigantic legs on which are poised the balancing arms, which extend 675 feet on each side of the base. The uprights converge upward, being 120 feet apart at the base, 33 feet at the top, where the middle point of the girder rests on the ends of the legs. The middle cantilever is longer than the other two, its base being 270 feet long, while theirs are 155 feet. The four legs are steel tubes, 12 inches in diameter and 320 feet long. The height of the bridge above the piers is 330 feet. While a lattice-girder forms the upper side of the cantilever, the under side of the enormous truss is a hollow curve, approaching in form a quadrant of a circle, drawn from the base of the legs, or struts, to the ends of the cantilever. The ends of the beams do not touch each other within 350 feet. The intermediate space is bridged by lattice-girders resting on the ends of the arms. On the shore sides of the outside cantilevers the weight of these girders is counterpoised by an equal weight of metal. The bridge will present the appearance of two distended arches and a half-arch at each end. The shore sections will consist of girders resting on stone piers. There will be eight piers within high-water mark and two on land, on the south side, and six on the north side, all on land.

Garabit Viaduct.—A bridge, begun in 1881 and to be finished in 1884, which is intended to carry a railroad over a river at Garabit, France, is even loftier than the lately completed Kinzua bridge in Pennsylvania. The French viaduct has a great arch in the center. The height from the bed of the river to the rail is 413 feet, while in the Kinzua valley viaduct the level of the rail is 301 feet above the stream-bed. In length the French structure is 1,880 feet, or 171 feet less than the other.

American Transcontinental Railroads.—The completion of the Northern Pacific railroad in October gives the United States three or properly four great transcontinental lines, while two more are far advanced in construction. The Atchison, Topeka, and Santa Fé, the last link of which was finished two months before the Northern Pacific, is the fourth to reach completion. The Northern Pacific has its eastern terminus at Duluth, where it connects with land and water routes to the seaboard. The road has recently been extended eastward to Superior City, with the intention of ultimately crossing the Sault Ste. Marie and finding an outlet on the seaboard by one of the new trunk lines. The western terminus and the difficult section across the Cascade range were changed from the original plan, owing to the combination under the Villard management with the Oregon company. Instead of terminating at Puget Sound, the Pacific section follows Columbia river down to Portland. The first of the transcontinental lines that was built was the Union Pacific from Omaha to Ogden, continued by the Central Pacific, to San Francisco. This road was chartered in 1863 and completed in 1869. The Southern Pacific, in connection with the Texas and Pacific, forms a third transcontinental route. The eastern terminus of the Southern Pacific railroad is at Galveston, and that of the Texas and Pacific at New Orleans. The Southern Pacific railroad has recently supplied the link which gives it a northern terminus at Vicksburg in the direction of its natural ocean outlet at Savannah. It approaches the Pacific ocean near San Diego, which is its natural terminus, but it is now carried up through California to San Francisco. The Atlantic and Pacific, called sometimes the thirty-fifth parallel road (as the last mentioned is called the thirty-second parallel route), terminates through its continuation, the St. Louis and San Francisco road, at St. Louis. It emerges on the Pacific coast at the same place as the Southern Pacific, and uses its prolongation up the coast to meet the ocean commerce at San Francisco. The Atchison, Topeka, and Santa Fé, which line was completed in 1883, forms with the Sonora railroad, lately acquired



GARABIT VIADUCT.

by purchase, running southward through Mexico to Guaymas, on the Gulf of California, a fifth transcontinental line, connecting with the Eastern railroads at Kansas City. The Canadian Pacific is rapidly approaching completion. South of the United States there are, besides the Panama railroad, three Mexican interoceanic lines chartered and partly constructed. The most northerly crosses Tampico to San Blas and is called the Mexican Central. The Mexican National railroad crosses from Vera Cruz, by way of the city of Mexico, to Manzanillo. The third is the line across the Isthmus of Tehuantepec, which was begun with the aid of subsidies by an American company, but became forfeit by lapse of the term stipulated for completion, and was confiscated and carried on by the Mexican Government.

The southern route for a Pacific railway now followed by the Southern Pacific, the Atchison, Topeka, and Santa Fé, and the new Atlantic and Pacific lines, was proposed when the project of a transcontinental railway was first under discussion, but was rejected by Congress. It has the advantage of avoiding the elevations north of Colorado and in the Nevada plateau. The Northern Pacific, where it crosses the Rocky mountains, is a remarkable example of railroad engineering. There is a gradual ascent on the western side through a magnificent forest-region to Clark's Fork. At Missoula, in this valley, it assumes the character of a mountain railway, which is preserved up to the point where it emerges in the valley of the Yellowstone. It crosses the summit range, the Cascades, at Mullen Pass, through a tunnel nearly 4,000 feet in length, at an elevation of 6,560 feet. The descent on the opposite slope is by moderate gradients through the valleys of the head-waters of the Missouri, the Jefferson, the Madison, the East and West Gallatin, and finally the Yellowstone, which it leaves at Glendive.

The construction of a transcontinental railroad across South America is an engineering problem the conditions of which are entirely different from those of the North American routes. Henry Meiggs, when building in Peru his first Andes railroad, till then the most magnificent mountain railway in the world, which ascends to altitudes as great as Mont Blanc, in which the barometric pressure is only 400 millimetres, and fire will scarcely burn, intended it as a link in a railroad across the continent. This work of genius was thrown into the shade by his Lima-Oroya railroad, which ascends on each side through 44 tunnels and over dizzy viaducts, to the summit-level in the Cima-Jalexa tunnel, 1,860 metres long and 4,769 metres above the level of the sea. The project of a transcontinental railway was not only premature, but the location of the route by Meiggs was through countries which, though possessing unlimited natural resources, were socially backward. An interoceanic road between the more progressive states of Chili and the Argentine Republic is much more feasible as a work of engineering, and commercially more promising. The project was under consideration at the time when Meiggs carried out his stupendous works. A convention between the two governments has been in existence many years, but they do not seem to desire such close commercial communication. The distance between the two capitals in a direct line is only 375 miles. The dangers from water and an exuberent vegetation, which are found in the Brazilian route, are here absent. There was no known practicable pass in the Andes, but no technical examination of the mountains had yet been made. Lately a gap in the chain has been discovered farther south, in Northern Patagonia, which would afford an easy passage.

EPIDEMIC DISEASES IN 1883. With the exception of cholera and yellow fever, there has been no wide-spread epidemic of disease during the year; but these have been manifested with their usual virulence and activity. Europe and the United States escaped an epidemic, but Egypt suffered almost as much from the devastations of cholera as from the effects of her civil war, and certain towns in Mexico were almost depopulated by yellow fever and the resulting panic. Concerning the cholera in Egypt, it is officially stated that the deaths from the disease were in excess of 48,000, and probably reached 50,000. This epidemic first appeared at Damietta, on the 24th of June, 1883. The city itself had a population of about 32,000. On the 27th of June cholera was reported from Port Said, and on the 30th of June at Samanoud, but it was not until the 15th of July that the disease reached Cairo. A great panic prevailed throughout Egypt, and on the earliest report of the existence of cholera at Damietta, the people fled in great numbers; a majority of them departing for Turkey. The Porte required all refugees from Egypt to undergo quarantine, either at Beirut or Bourla at the entrance of the Bay of Smyrna. Consul-General Heap reported to the State Department from Constantinople, on the 21st of July, that "the limited accommodations at both places were enlarged by the erection of temporary wooden barracks and tents, but the panic-stricken refugees from Alexandria came in such numbers that these structures soon became insufficient to accommodate such crowds, and as each day brought fresh arrivals, the sufferings of these people from exposure to the burning sun and the chilling night dews became very great, and threatened to create the very evil it was the intention to guard against. Those arriving at Beirut were the greatest sufferers, and the Turkish authorities were finally compelled to telegraph to Alexandria, to give warning that no more refugees could be received, or would be allowed to land."

Sanitary cordons were established in a somewhat desultory manner by the local authorities of each place, from time to time, and such as

were thought necessary were finally made effective by the British Government. Many of the cordons had been established to protect places which were either infected at the time or subsequently became infected, were then abolished, they being no longer of any use, and the British Government directed the enforcement of sanitary measures by the troops then in Egypt.

The following extract from a report to the State Department, by United States Consul-General G. P. Pomeroy, stationed at Cairo, under date of August 16th, will show the energetic measures adopted:

At a recent interview with Surgeon-General Hunter, who was sent to Egypt by the English Foreign Office as medical adviser to the Egyptian Government, I learned a few facts, which I will here recount. This gentleman, with medical assistants, has just returned to Cairo from a tour of inspection of the infected districts in Lower Egypt, of which the most important towns are Damietta, Mansourah, Samanoud, Zagazig, Kafr-Zayat, Mahala-Kybir, Tanta, and Benha. Surgeon-General Hunter remarked that, with the aid of Sir Edward Malet, he communicated to the Minister of the Interior a decided wish to see promptly executed in Cairo, and throughout all the infected districts, the cleaning of the mosques, streets, and cemeteries, of filth and foul matter, to bury the corpses at least one metre under the ground, to cover them with quicklime, and to destroy by fire the small houses tainted with the malady, and the pestilential or noxious air by which it is produced. In this matter, it is necessary to state, the Arab people all through the country here, from a religious impulse, have offered a considerable opposition, which was fortunately silenced by naming, as delegates for executing these measures, notables, Arab doctors, and employés of the different government local administrations. Surgeon-General Hunter also informed me that the English Government, with acquiescence of the Egyptian native authorities, has concluded to form here, as in India, a permanent Sanitary Commission, which will be composed, in the beginning, of eight officers and forty assistants, belonging to the Indian Medical Board (intendancy), who are experienced in the study and practice of this disease, and who will have complete charge and management, in this land, of all public sanitary measures.

Consul-General Pomeroy expressed his opinion that the chief cause of the "present" cessation of cholera in Cairo, and some other towns, is to be attributed "to the very high rise of the Nile, which has very lately filled with fresh water the canals of the infected districts, and thereby cleaned out the poisonous matter and filth which was the direct origin of the development of cholera. Apart from the cholera epidemic, there is at present a great deal of typhoid fever in the country, and we have just got over an epidemic of spotted typhus fever."

While the epidemic lasted, great alarm was felt in Europe, not only among the countries bordering on the Mediterranean, but in Russia, which quarantined her Black sea ports, and later those in the Baltic, and all Europe quarantined against arrivals of persons and goods from Egypt, in view of the danger of importation of cholera. England departed from her usual conservatism against quarantine, by laying the responsibility upon customs officers to make special investigation of the importation of cargoes from Egypt and of passengers; and it is probable that the failure of the cholera to spread to Europe is due, first, to the early quarantine measures instituted against it, and, second, to the energetic policy of the British Government when it was discovered that the Egyptians were either powerless or incompetent to institute proper sanitary measures themselves. Owing to the large quantities of rags annually exported from Egypt to the United States by way of England, it was felt by our Government that great danger existed in the unrestricted importation of infected rags, and sanitary inspectors were appointed in Liverpool and London, to inspect the cargoes of vessels departing for the United States, and to give notification by telegraph of the departure of infected goods. Collectors of customs were forbidden to allow the entry of Egyptian rags until the municipal health officer of the port where the entry was to be made should give a certificate that in his opinion no danger need be apprehended from so doing. This almost stopped the importation of Egyptian rags for some months, and steamships declined to receive suspected rags as freight. It is now proposed that American shippers of rags shall have them properly disinfected before shipment, and to that end a sanitary inspector, acting under the direction of the United States consul, has been appointed, and stationed at Alexandria, whose duty it is to see that the rags have been thoroughly boiled before baling. Machinery on a large scale has been shipped to Alexandria by one of the principal paper-manufacturing firms of the United States, whereby the boiling and subsequent drying may be accomplished with but little loss of time. From a scientific point of view, the cholera epidemic in Egypt does not appear to have afforded any permanent lesson. The early cordons were too inefficiently conducted to be of material service in settling the question as to the prevention of its spread, and the several commissions sent by France and Germany respectively do not appear to have conclusively settled the causation of the disease. The German Commission, headed by Prof. Koch, announced the discovery of a microbe and bacillus, found principally in the walls of the lower intestines. The French Commission was nominally headed by Prof. Pasteur, but was really headed by M. Thuillier, who died at Alexandria, a martyr to his scientific zeal. This commission reported that a micro-organism was found in the blood, located in the spaces between the blood-globules. Further experiments are necessary in order to demonstrate the truth of these propositions. In the mean time nothing has been discovered which in any way modifies the treatment of previous years. The "Fyers' treatment," which consists in the administration of emetics and purgatives, has again been brought forward. This treatment, it will be remembered, originated in Mauritius in 1856.

A commission was appointed by the German

Government in 1873 for the purpose of investigating the causes of cholera, and their report was made early in 1883. Prof. Hirsch, of the commission, announced his adherence to the doctrine that "from the cholera-patient an infectious substance is actually thrown off, which, however, is not yet capable of acting directly as a cholera-poison, but only obtains its specific infecting influence after it has undergone a certain change, outside the system of the patient himself, and under the afore-mentioned external circumstances, either upon or in the soil or a *succedaneum* of the soil."

Prof. Pettenkofer announced as his opinion, that "the reproduction of the cholera-poison takes place quite independently of the cholera-stricken individual (as such), seeing that it may attach itself to persons, sick or well, or to other objects, through the instrumentality of which it may be carried from place to place, and wherever it finds appropriate conditions for its reproduction it may light up an epidemic." The recommendations of this commission for the prevention of the disease are as follow:

Of all the measures which may be applied to the prevention and combating of cholera, those take the first place which have for their aim the improvement of general sanitary conditions; all specific measures against cholera will prove unavailing unless we pay the strictest attention in inhabited places to the purifying of the soil from organic and easily putrefying refuse, to the drainage of the soil, to the constant flushing of the sewers, to the frequent emptying of cess-pits, to the careful inspection of dwellings and closing those that are really hurtful, the provision of pure water both for drinking and other domestic purposes, and the like.

Yellow fever prevailed during the year in its native home on the island of Cuba; on the Mexican shores of the Gulf; in a less degree in Brazil, and to a very serious extent on the western shores of Mexico. There is always danger to the Gulf-ports of the United States from the admission of yellow fever from Havana, Cuba, and from Rio de Janeiro, but this year it was threatened from a city where the shipping has hitherto been measurably exempt—Vera Cruz, Mexico. No other city on the Gulf-coast of Mexico suffered severely from yellow fever, but on the west coast the disease appeared with unusual virulence.

Vera Cruz, like Havana, has cases of yellow fever the year round. The following table of mortality from yellow fever, at the Hospital de Sebastian, was compiled by Assistant Surgeon Guitéras, of the Marine-Hospital Service:

PATIENTS.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	Up to Feb. 15, 1883.	Total.
Admitted..	850	48	810	217	11	2	448	58	802	1,756
Discharged	216	38	157	102	9	2	203	36	77	850
Dead.....	134	10	158	115	2	..	245	22	183	864
Remaining	...	..	...	...	..	..	...	..	42	42
Total....	850	48	810	217	11	2	448	58	802	1,756

Speaking of the endemic character of the yellow fever at Vera Cruz, a local tradition has it (Padre Alegre) that yellow fever was introduced there in 1699, by an English ship, which arrived with a cargo of negro slaves from the west coast of Africa; but there does not appear to be much contemporaneous historical evidence to support the tradition. Yellow fever appeared on the west coast of Mexico, principally in the cities on the coast bordering on the Gulf of California. The disease appeared at Mazatlan early in September, and is now believed to have been introduced by a vessel from Panama. It spread rapidly to Guaymas, Hermosillo, and Manzanillo. The city of Acapulco inaugurated a rigid quarantine against vessels from the other western coast ports, and escaped the infection. La Paz, in Lower California, Mexico, was also infected with the fever, which reached the highest pitch of malignancy in September, and deaths in that town reached 114. The acting United States consul at La Paz, Mr. Viosca, was himself affected with the disease, as was also Mr. Willard, United States consul at Guaymas. Mr. Willard estimates that only about 200 persons died at Guaymas of yellow fever, out of 3,500 attacked. He estimated that in the capital of the State (Hermosillo), over 2,000 persons were sick from the disease at one time. The effect of this scourge on those towns was to paralyze all business and create a general panic in the interior. As usual, on its first appearance, there was much discrepancy of opinion as to whether the disease was really yellow fever, or simply the ordinary coast bilious fever; but as the epidemic progressed, it became impossible either to conceal the fact that yellow fever was present, or to deny it so effectually as to prevent adjacent towns from quarantining against them. The American steamer Newbern, which left Guaymas on the 19th of September, arrived in San Francisco on the 29th, with five of her crew sick with yellow fever. Fortunately, the disease was not communicated to the city. The United States Government took early precautions against the admission of yellow fever by keeping inspectors at Havana and Vera Cruz to report by telegraph the departure of infected ships. Inspectors were stationed in Arizona at Fort Yuma and Benson, to prevent the entrance of persons sick with yellow fever, or of infected baggage from the Mexican cities. An inspector was also stationed at Brownsville, Texas, for the same purpose. The Government maintained a quarantine at Ship Island, in the Gulf of Mexico; a quarantine at Pensacola; Sapelo Sound, on the Atlantic coast, and near Cape Charles in Chesapeake Bay. The local authorities of the United States ports maintained their quarantines as usual. The Revenue Cutter Service was instructed to patrol the Gulf-coast for the purpose of inspecting vessels, and to forbid the entrance into any port of persons infected, or of vessels having infected cargoes, and to order

them directly to quarantine. These energetic measures prevented the entrance of yellow fever into any port of the United States. As in the previous year, all matters of quarantine administration were managed by the Marine-Hospital Service, a Bureau of the Treasury Department, of which the Surgeon-General is the chief officer, who is responsible to the Secretary of the Treasury. On the 16th of August a local outbreak of the disease occurred in the Pensacola navy-yard, and the outlying villages of Warrington and Woolsey on the naval reservation, the origin of which is still in doubt. The Secretary of the Navy ordered a board of inquiry to ascertain the cause of the fever, and they reported as the probable cause that infected ballast was used in building the jetties at Fort McRae, workmen on which lived in the village of Warrington, and went immediately from the jetties to their homes. The board, however, declined to give any positive opinion, but simply regarded it as probable that this was the source of infection. Other causes of infection are enumerated and given as possible, among them the possibility of the hibernation of the germs in infected goods left over from the previous year's epidemic in the city of Pensacola.

A sanitary cordon was early established against the naval reservation, which prevented travel to or from the reservation during the prevalence of the epidemic. The efficacy of an efficient *cordon sanitaire* was once more demonstrated, for no case of the disease appeared outside the limits of the reservation. There were a few separate cases of yellow fever in the city of Pensacola, evidently developed from infected bedding left over from the previous year, when a serious epidemic prevailed.

As to the causation of yellow fever in general, nothing has been developed within the year, except the investigation of Dr. Domingos Freize, of Brazil, who reports having discovered the microbion of the disease; that it is developed in the corpses of the deceased; and that it flourishes to a great extent in the earth of cemeteries. Dr. Freize has recognized in the blood of yellow-fever patients the *cryptococcus*, to which he has attached the name of *xanthogenicus*. The color of the black-vomit he considers due to this cryptococcus. He has produced the disease in Guinea-pigs and rabbits by injecting the *C. xanthogenicus*. He advises, as the best means of extermination, the building of public crematories, and that all persons dying of yellow fever shall be cremated. The Brazilian Government has approved his recommendation, and a crematory has been erected by order of the Imperial Government.

Dr. Carmona Del Valle, of Mexico, also claims to have discovered the germ of the disease, and has named it *Peronospera lutea*. He finds its mycelium in the black-vomit, and claims to have observed its development in the urine.

ERYSIPELAS. See SURGERY.

EVANGELICAL ASSOCIATION. The statistical reports presented to the General Conference of the Evangelical Association, at its meeting in October, 1883, gave the following items: Whole number of members, 120,231; increase during four years, 10,458; number of preachers, 1,671; of churches, 1,622, of which the value was $3,577,888; number of parsonages, 501, having a value of $307,205; number of Sunday-schools, 2,131, with 135,795 pupils.

General Conference.—The General Conference met at Allentown, Pa., October 4th. An account of the present condition of the Church, and a review of its progress during the past four years, were given in the address of the bishop. The net gain in members had been about 8 per cent., or 5 per cent. less than the gain during the preceding four years, and 12 per cent. less than the gain during the four years from 1871 to 1875. The gain in the number of ministers (itinerant and local) had been about 8 per cent., the increase in the number of churches a little more than 3 per cent., and that in the number of Sunday-schools about 9 per cent. Much improvement was remarked in the substitution of new church-buildings for old ones; and debts resting against churches had been paid off to such an extent that all the churches in some of the conferences were free from such debts, and nearly all the others were in an easy condition. The receipts of the Missionary Society during four years had been $384,086, or $103,404 more than those of the previous four years. The work of home missions had been extended to Texas, where missions had been organized in Galveston, San Antonio, and Temple, and to Denver, Col. The receipts of the Publishing House at Cleveland, O., during four years, had been $767,007, or $169,097 more than those of the previous four years; and those of the Publishing House in Stuttgart, Germany, had been $64,359. The Missionary Society employed 420 missionaries and supplied 427 mission charges, with which were connected 35,767 members; it also sustained 775 mission Sunday-schools, with 6,910 officers and teachers and 47,230 pupils. Abroad the society sustained missions in Europe, in aid of the conferences in Germany and Switzerland, and in Japan. The two European conferences employed 67 preachers besides theological students, and included fifty stations with about 700 preaching appointments, and an enrollment of 8,400 members, and 268 Sunday-schools, with 16,950 pupils. Three periodicals were published at Stuttgart. The net increase in members in Europe was small, though the additions to the churches had been many, because a large proportion of the converts had emigrated to the United States. The German churches had suffered much from the opposition of the state churches. The mission in Japan returned 2 American preachers, 4 American woman missionaries, 3 native preachers, 4 student helpers, 3 native Bible-

women, a number of teachers in day-schools, 8 day-schools with 132 pupils, and 4 Sunday-schools, with 191. The Committee on High Schools and Education reported on the condition of Northwestern College, Naperville, Ill.; the Biblical Institute; Union Seminary for young men and young women (with which a theological course is connected); Schuylkill Seminary, Reading, Pa., a new institution; and the Theological Seminary at Reutlingen, Germany, where nineteen young men had received instruction during the quadrennium. The attention of the conference was largely given to matters of detail in discipline and the management of the business affairs and benevolent enterprises of the Church. A report expressing the sentiments of the body on various questions of public morals recommended the legal prohibition of the traffic in intoxicating liquors; advised a strict observance of the sanctity of the Christian Sabbath; and condemned loose divorce legislation and speculations in stock and produce. The speedy publication of a series of normal class text-books, and the formation of classes for the regular study of a course of instruction covered by them, with certificates of graduation to be given to those who complete the same, were recommended. Provision was made for the formation of a woman's missionary society auxiliary to the Missionary Society of the Church, for the organization of local branches to co-operate with it.

EVENTS OF 1883. The year 1883 was comparatively devoid of striking political events, but with peace assured in Europe it was a year of legislative discussion and activity. The popular unrest in Europe, heightened by the growing acuteness of the economical struggle for life, manifested itself in characteristic ways. The same circumstances impelled governments to make commercial restrictions, and, in conjunction with the absence of military dangers at home, to seek acquisitions in the outlying regions of the earth. There were constitutional struggles and revolutionary attempts in many lands, revealing the instability of their political institutions. There was a more abundant harvest in most countries. The year was chiefly remarkable for extraordinary natural calamities. A volcanic outburst devastated one of the most populous and productive regions of the world, the cholera mowed down the population of another, earthquakes demolished whole towns, freshets ravaged the valleys of Central Europe, and tornadoes spread desolation in the United States. The minor catastrophes and accidents by land and sea, when aggregated, present an appalling sum of destruction, suffering, and death. The following chronicle recounts the noteworthy events of 1883 in the order of their occurrence:

January 1. Inauguration of Governor Cleveland at Albany. Floods at Vienna and on the Rhine; 500 houses destroyed at Worms.

2. Meeting of New York Legislature. Inundations extend in the valley of the Rhine and its tributaries, causing great damage and suffering at Düsseldorf, Mayence, Worms, Mannheim, and Ludwigshaven.

3. Railroad communications between Switzerland, France, and Italy, interrupted by high water. Plot against the Austrian Crown Prince discovered at Pesth.

4. Sherman's bonded whisky bill passed in the Senate. House of Representatives pass Pendleton's civil-service reform bill. Presburg, in Hungary, flooded. Spanish Minister of Finance declares the necessity of retrenchment.

5. State Treasurer of Tennessee absconds, leaving defalcations to the amount of over $400,000. Rhine floods recede. Death of Gen. Chanzy.

6. Funeral of Gambetta, at Paris, amid manifestations of public sorrow.

7. Spanish Cabinet resigns. Sinking of the steamer City of Brussels, run into in a fog by the Kirby Hall, near Liverpool.

8. Sagasta forms a new Ministry in Spain.

9. Presidential succession bill passed in Congress. English ship British Empire burned on the high seas. German Emperor subscribes 600,000 marks for the Rhine sufferers. The Opposition attack the Government on the question of prohibiting American pork. Spanish Ministry formed under the presidency of Sagasta.

10. Burning of the Newhall House in Milwaukee; nearly 100 lives lost. Prussian Diet votes 3,000,000 marks for the relief of the inundated. Flood devastates the town of Raab, in Hungary; many persons drowned.

11. Bill to restore Gen. Fitz-John Porter to his rank in the army, without back pay, carried in the Senate. Death of ex-Senator Lott M. Morrill, in Augusta, Me. Histrionic triumph of Edwin Booth at Berlin. German Reichstag rejects a motion to repeal the anti-Socialist laws, the May laws, and all exceptional legislation.

12. Shipping bill, with drawback and free-ship clauses struck out, passed by the House of Representatives. Arrest of Phœnix Park murderers in Dublin. The Czar and imperial family take up their residence in St. Petersburg in the Anitchkoff Palace.

13. Fire in a circus in Berdichev, Russian Poland; 300 persons burned to death.

15. Arrest of Prince Napoleon in Paris for issuing a manifesto. The British ship Pride of the Ocean destroyed by dynamite.

16. Floquet proposal to expel members of royal families voted urgent in the French Chamber. Termination of Portuguese treaty with England relating to the west coast of Africa.

17. Execution of two agrarian murderers in Ireland. Swedish Parliament opened.

18. Prohibition amendment in Iowa adjudged invalid. Vote of thanks in the Reichstag for American subscriptions to relief fund. The village of Marais in Savoy destroyed by an earthquake.

19. Disaster on Southern Pacific railway near Tehichipa, Cal.; 15 lives lost. Sinking of the Hamburg steamer Cimbria; 353 drowned out of 420 on board. The Russian city Kherson destroyed by fire.

20. Gen. Iglesias proclaimed President in Peru by a Congress sitting at Catamarca, and accepts on condition that the people are willing to make peace with Chili. Skuptchina (of Servia) approve German commercial treaty.

21. Explosion of giant powder near Oakland, Cal., killing over 30 Chinamen. Explosion of a gasometer in Glasgow. Death of Prince Frederick Charles Alexander of Prussia.

22. A clause of the Ku-klux law of 1871 decided to be unconstitutional. Arrest in Germany of the officers of the English steamer Sultan, which collided with and sank the Cimbria. The insurgents in Ecuador gain a victory.

23. John E. Kenna elected Senator for West Virginia, and Richard Coke for Texas. A number of

deaths from starvation in Ireland. Belgian Chamber sanctions the introduction of the Flemish language in the intermediate schools of Flanders. Closure of Servian Skuptchina. Death of Gustave Doré.

24. Senatorial elections in New Jersey and Kansas, return of McPherson and Plumb. In New Guinea 16 sailors are slaughtered by cannibals.

25. Audience of the Russian minister De Giers with the Austrian Emperor. Naval appropriation bill passed in the House.

26. Embezzlements in the Municipal Gas-Works of Philadelphia discovered.

27. Bowen and Tabor elected to represent Colorado in the Senate. New York State Senate confirms the Governor's appointments of Railroad Commissioners. The German bark Admiral Prince Adalbert wrecked off the coast of Wales.

28. The French Cabinet resigns. Mutiny of convicts in Cork Harbor. Hungarian Chamber rejects a proposition to repeal the emancipation of the Jews.

29. French Ministry newly organized with Fallières for Premier. Wrecks on the English coast. Duration of International Tribunals in Egypt prolonged till Feb. 1, 1884.

30. Fatal snow-slide in Colorado. Switzerland rejects the naturalization treaty proposed by the United States.

31. Gen. Manderson elected Senator for Nebraska. Strike of 3,500 workmen in Limoges, France. Gen. Thibaudin appointed French Minister of War. Restoration of King Cetewayo in Zululand.

February 1. Election of D. M. Sabin to the United States Senate in Minnesota.

2. Resolution in favor of the preservation of forests adopted by New York Legislature. French Chamber passes the expulsion bill against royal families. Steamer Kenmure Castle foundered in the Bay of Biscay.

3. Inundations in Pennsylvania, Ohio, and Indiana.

4. Severe earthquake at Agram. Spanish Cortes refuse to abolish parliamentary oaths.

5. Colvin nominated Financial Adviser to the Egyptian Government.

7. Arrest of Payne, organizer of the Oklahama raids.

8. The Spanish Government emancipate 40,000 slaves in Cuba. Opening of Danube Conference at London.

9. Death of William E. Dodge. Government proposal of biennial budgets rejected by the German Reichstag.

10. Death of Marshall Jewell.

11. Breaking of a dam in Louisville, and destruction of life and property.

12. Prince Jerome Napoleon released from confinement. Coronation of King Kalakaua in Honolulu.

13. Minister Fallières proffers the resignation of the French interim ministry. Death of Richard Wagner.

14. Death of E. D. Morgan.

15. British Parliament meets. French Chamber adopts the pretenders' bill of Barbey.

16. Bill to return Japanese indemnity passed by the Senate. The New York Legislature passes the tenement-house cigar bill, and the bill to reduce elevated-railroad fares. A mining accident in Illinois causes the loss of 80 lives. Ukase of the Czar on amending laws relating to the Jews.

17. The Legislature of Pennsylvania rejects the prohibition amendment. The Jeannette investigation ends in the adoption of a report approving the conduct of all members of the expedition. Carey appears as a witness for the crown in the Dublin criminal investigation. French Senate rejects the expulsion bill. Norwegian Storthing meets.

18. The tariff bill passed by the United States Senate. Adverse vote on the measure in the House of Representatives. Appointment by the President of the Civil-Service Commission. President Grévy accepts the resignation of the Cabinet, and charges Jules Ferry with the formation of a Ministry.

20. Panic in a German Catholic school in New York; 15 children killed. Count Corti demands of the Porte satisfaction for insults to Italian consul in Tripoli, under threat of naval action.

21. Army appropriation bill passes the Senate. Burning of the steamer Morro Castle in Charleston Harbor. Loss of United States steamer Ashuelot; 11 drowned. The German Federal Council adopt the resolution prohibiting the importation of American pork. New French Cabinet constituted by Ferry.

23. Mutiny of prisoners, and burning of the Penitentiary in Jefferson City, Mo. Prof. Swift, of Rochester, N. Y., discovers a new comet.

24. The Senate adopts revenue bill intended to reduce customs and taxes $25,000,000. John W. Foster, of Indiana, appointed Minister to Spain. Escape of 20 prisoners from the Arkansas State Prison. Decree of Servian King on new organization of the army.

25. The Orleans princes in the French army are retired from active service.

26. Bankruptcy of a Roman Catholic church in Lawrence, Mass., and loss of trust-funds.

27. Senate bill of revenue reform referred by the House of Representatives to a commission. Bill against the adulteration of teas passed in Congress.

28. The Secretary of State informs the Senate that the Government disapproves the attitude taken at Lima by Mr. Partridge, in joining the representatives of England, France, and Italy in a friendly intervention between Chili and Peru. Silver wedding of the German Crown Prince. Edhem Pasha appointed Turkish Minister of the Interior.

March 1. Belgian Chamber refuses to cut down the bishops' salaries. Decree of resumption of specie payments signed by King of Italy. Resignation of Dutch Ministry.

2. Veto of the five-cent elevated railroad fare bill by Governor Cleveland.

3. Retirement of David Davis from the presidency of the Senate; Senator Edmunds chosen his successor. Passage of the tariff act. Senate tables river and harbor appropriation bill.

4. Tariff act signed by the President. Adjournment of Congress. Steamboat Yazoo sunk in the Mississippi, and 16 lives lost. Death of Governor A. H. Stephens at Atlanta.

5. Decision by the United States Supreme Court that a State can not be sued by another State for claims assigned to it by citizens. James S. Boynton, President of the Georgia State Senate, sworn in as Governor in the place of Alexander H. Stephens, deceased. Resignation of the Prussian Minister of War, Von Kameke.

6. Revision of the Constitution negatived by the French Chamber. Gale on British coast, 135 fishermen lost.

7. Coalition of Democrats and Greenbackers in Michigan declare for free trade. Bronsard von Schellendorf appointed Prussian Minister of War.

8. Retirement of the German Naval Minister, Von Stosch.

9. Louise Michel leads a demonstration of unemployed working-men in Paris, and instigates a bread riot. The steamer Navarre, sailing between Copenhagen and Leith, goes down with 65 persons on board. In Andalusia 1,200 persons are arrested on the charge of conspiracy as members of the Black Hand Association.

10. Danube Convention signed in London. Death of Coumoundouros, Greek ex-Minister.

11. Death of Prince Gortchakoff.

12. Turkish Government gives notice of termination of treaties of commerce with the United States, Belgium, Netherlands, Spain, Sweden, and Denmark.

14. The murderer Dukes acquitted by a jury in Uniontown, Pa. Parnell's amendment to the land act rejected by the British Parliament. Discovery in St. Petersburg of defalcations by officials amounting to 11,000,000 rubles.

15. Affray in the Pennsylvania Legislature. Dynamite explosion in the Government Buildings in London. Servian Ministry resign; reconstituted under the presidency of Soboleff. Swiss commercial treaty with Spain signed.

16. Adjournment of the Austrian Reichsrath. Death of Carl Marx.

17. Arrests of citizens of South Carolina by revenue officers.

20. The repudiation act goes into force in Tennessee.

21. Sitting Bull located in the Standing Rock Reservation. Conviction of three Socialists charged with robbery in Vienna.

22. Death of Sir George Jessel, Master of the Rolls.

23. In Armagh, Ireland, 19 persons found guilty of conspiracy to murder.

25. Death at Kenosha, Wis., of Postmaster-General T. O. Howe.

26. Destruction of the village of St. Anton, in Tyrol, by a conflagration.

27. The Washington Grand Jury finds indictments against Brady and ex-Senator Kellogg. Strike of tobacco operatives in Lynchburg, Va. Death of John Brown, the Queen's gillie.

28. Count Majlath von Szechely, Hungarian judge, murdered in Ofen. French take possession of Porta Negra and Loango on the Congo; protest of Portuguese naval officers.

29. Terrific storm on the coast of England. Louise Michel gives herself up to the Paris police.

30. Loss of 53 lives by a railroad accident on the Cincinnati Southern Railroad, near Mason's Station, in Ohio. Arrest of 40 Socialists in Spain.

31. A band of Nihilists broken up in St. Petersburg. Albanians attacked and killed by Montenegrins.

April 2. Democratic success in the St. Louis municipal elections.

3. The President appoints United States Judge Gresham, of Indiana, Postmaster-General. Illinois Democratic State ticket adopted in Chicago. Arrest of the Socialist deputies, Vollmar and Frohme, at Kiel, Germany, on their return from a Socialist Congress in Copenhagen.

4. Death of Peter Cooper in New York. Success of the Republicans in Rhode Island; defeat of Sprague. The Ohio Legislature adopts two temperance amendments. First public announcement of the triple alliance.

5. Discovery of a dynamite factory in Birmingham, England, and arrest of several conspirators. Powder factory near Rome explodes, killing 40 persons.

6. Hotel in Greenville, Texas, falls in, killing 13 people.

7. Death of Louis Veuillot.

9. Beginning of the trial of the Phœnix Park assassins in Dublin. Explosives bill enacted by British Parliament.

10. Prairie-fire in Nebraska. Strike of 7,000 dock laborers in Marseilles, France.

11. Labor-strikes in Reading and Boston. Healy's scheme for local self-government in Ireland rejected by the House of Commons.

12. The Left in the Danish Folkething propose an address to the King, expressing want of confidence in the Ministry.

13. Cigar-makers win a strike in Cincinnati.

14. Queensland Government proclaims the annexation of New Guinea. Swiss Federal Council remove decree expelling Bishop Mermillod. Rescript of the German Emperor on social reform and biennial budgets. Arrest of 2,000 persons in Moscow. Tisza's answer in the Hungarian Parliament on the subject of the triple alliance. Danish Folkething pass the vote of censure.

16. Danish Landsthing pass a vote of confidence in the Ministry.

17. Charges brought against the Government Supervising Architect Hill. The Scott liquor law goes into operation in Ohio. House of Commons postpone local tax reform until the consideration of the whole subject of local government.

18. Illinois adopts the license system. Gov. Butler, of Massachusetts, publishes charges against the administration of the Tewkesbury poor-house. Visit of the Prince of Bulgaria to the Sultan. The King of Denmark accepts the addresses of both Chambers and reproves the Folkething for not passing ministerial measures.

19. Summing up in the Star Route trial. Grants to Lords Wolseley and Alcester voted by British Commons. Conviction of 19 Nihilists at St. Petersburg.

20. Act relating to the reorganization of the Emigration Department goes into force. Conflagration in Delhi, India; 2,000 buildings burned.

21. Final decision against the validity of the Iowa prohibition amendment.

22. Tornado in Mississippi; 50 dead and 300 injured. Executions and arrests in St. Petersburg. Dutch Ministry finally formed by Heems Kerks.

24. Henry D. McDaniel elected Governor of Georgia. Tornadoes in Louisiana and Texas. Strike of Berlin cab-drivers. French Chamber adopt the measure to convert the rentes from 5 per cent. into 4½ per cent. bonds. Proposition to impeach the Ministry thrown out by Norwegian Odelsthing.

25. Ship British Commerce wrecked off Owner's Light-house. Mine-explosion in Besseges, France; over 100 lives lost.

26. Organization of the Irish National League of America.

28. Austrian Chamber of Deputies passes the school act.

29. Victory of Egyptian troops over followers of the False Prophet. Riot between Arabs and Greeks at Port Said.

30. Prohibition of American pork in Greece. Nomination of 12 Polish bishops by the Pope.

May 1. Opening of the Colonial Exhibition in Amsterdam. Duc de Broglie's interpellation on the triple alliance.

2. Burning of a steamer on the coast of British Columbia; 70 lives lost. Conviction of the Phœnix Park murderers Caffry and Delaney.

3. Trial of twenty-six Socialists in Lemberg. Parliamentary oaths bill defeated in the House of Commons. Bradlaugh tries again to take his seat. Steamer Grapples, running between Puget Sound and Alaska, burned and 70 lives lost.

5. Bakers' strike in Vienna. Earthquake in Tabriz, Persia, and loss of many lives.

6. The town of Königinhof, in Bohemia, burned.

7. Navigation on Erie canal opened. The biennial budget rejected in the German Reichstag.

9. Defeat of the Apaches by Mexican troops.

10. Oil-tanks at Communipaw, N. J., fired by lightning.

12. Opening of the Fishery Exhibition in London, and of the Hygienic Exhibition in Berlin.

13. Devastating hurricane in Kansas, Missouri, Ohio, and Indiana; town of Oronogo, Mo., demolished.

14. Mahone accused of violating the civil-service law. Execution of Brady in Dublin. The Pope interdicts political agitation by the Irish clergy.

15. Tonquin credit votes by French Assembly. Lock-out of 4,000 shoemakers in Cincinnati. Prince of Montenegro visits Vienna.

16. Treaty of peace between Chili and Peru. National association of coal-miners formed in a convention at Pittsburg. French naval vessels bombard ports on the northwest coast of Madagascar.

17. Denver and Rio Grande railroad completed. Prussian proposals relative to the announcement of ecclesiastical appointments rejected by the Vatican. Swedish Second Chamber pass a bill to change the organic law of the army.

18. Severe storms in Wisconsin, Illinois, Nebraska, Missouri, and Texas. Execution of Daniel Curly in Dublin.

19. Destructive flood in Dakota. Entry of the Czar and Czarina into Moscow.

20. Tumultuous Labor Congress in Paris.

21. President Arthur appoints Walter Evans, of Louisville, to succeed Gen. Raum as Commissioner of Internal Revenue.

21. Administrative regulations of the new tariff announced by the Government. The Italian Ministers oppose Depretis and resign. Death of Suleiman Pasha in Constantinople.

22. Nomination of the Marquis of Lansdowne as Lord Lorne's successor in the governor-generalship of Canada. Reorganization of Italian Cabinet announced by Depretis. King and Queen of Portugal visit Madrid. Solemn entrance of the Czar into Moscow. The Swedish First Chamber rejects the measure to alter the formation and mode of recruiting the army.

23. Opening of the National Railroad Exhibition in Chicago. John Jay appointed New York State Civil-Service Commissioner.

24. Formal opening of East River Bridge between New York and Brooklyn. Miners' riot in Illinois. French belligerent action in Madagascar.

25. Steamer accident in California. Jewish persecutions in Rossow, Russia. Changes made in the Italian Cabinet. Prorogation of Dominion Parliament. Swedish Ministry resign in consequence of the vote on the reorganization of the army. Repulse of French troops in Tonquin; death of Rivière. Retirement of the Swedish Ministry. Death of Abd-el-Kader.

27. Coronation of the Czar in Moscow, in the Kremlin Cathedral.

28. Tornadoes in Indiana; twenty persons killed. Popular vote in a referendum vetoes the law of compulsory vaccination in the Swiss Canton of Zürich.

29. Close of the Star Route trial. Tornado in Indiana, Ohio, and Arkansas.

30. Panic on the East River Bridge during a blockade of the foot-path; twelve persons trampled to death. Mineral exhibition opened by the King at Madrid in presence of the King of Portugal.

31. Sick-fund bill passed in German Reichstag.

June 1. Tariff reformers issue a declaration of principles. Prussian negotiations with Rome again broken off. The French bombard two seaports in Madagascar.

2. Flood in Council Bluffs, Ia. Hanging of Thomas Caffrey in Dublin. The Italian Chamber resolves to build a national monument to Garibaldi.

3. Change in the Brazilian Cabinet. Members of the Black Hand Society condemned in Spain.

4. Bill prohibiting political assessments passed by Pennsylvania Senate. Assassination conspiracy unearthed in Tipperary, Ireland. Carey expelled from Ireland. Proposal of a second Suez canal.

5. Suspicious cases of poisoning in Ireland.

6. Foraker nominated by Ohio Republicans for Governor. Judge Kinne chosen as Democratic candidate for Governor of Iowa. Thyselius intrusted with the formation of a Ministry in Sweden.

7. Sinking of the steamer Claudius on the British coast.

8. Preparations for war against France in China.

9. Timothy Kelly, the last of the Phœnix Park murderers, hanged. Execution of Suleiman Daoud in Alexandria.

10. Return of the Czar to St. Petersburg after the coronation festivities.

11. Fight of strikers in Troy, N. Y. Bennigsen, the German party leader, retires from political life.

12. The German Reichstag closes its session after passing the budget for 1884–'85. The French capture Tamatave in Madagascar.

13. Acquittal of the Star Route prisoners. Successful termination of Gen. Crook's expedition against the Indians. Nutt shoots his father's murderer in Uniontown, Pa. Earthquake in the Bukovina. Admiral Pierre bombards and occupies Tamatave, in Madagascar, and destroys also Toule Point, Mohambo, and Tenerive.

14. A Federal Judge in Texas declares the Civil-Rights Act of 1875 unconstitutional. Dr. Gallagher, the dynamite conspirator, and his accomplices condemned to imprisonment for life in London. Swedish Parliament closes its sessions.

15. The Prohibitionists of Ohio set up a separate ticket. The high-license bill goes into operation in Illinois.

16. Failure of the lard firm of McGeoch & Co. in Chicago. Kraszevski, Polish poet, arrested for high treason in Germany. Channel Tunnel reported dangerous by Parliamentary Commission.

18. Theatre panic in Cumberland, England; 197 children trampled to death.

19. Inundation in Silesia.

20. Deaths of Archbishop Wood and Gen. Ewing, and of Bishop Colenso of Natal.

21. Judge Hoadley nominated by the Democrats in Ohio for Governor. The Pope complains to President Grévy of the treatment of the clergy in France.

22. S. L. Phelps appointed by President Arthur Minister to Peru, and Richard Gibbs Minister to Bolivia. Floods in Missouri, Illinois, Kansas, Nebraska, and Arkansas. Anti-Jewish demonstration in Saint Gallen, Switzerland. Marine collision off Portland, England; 25 lives lost.

23. Irish citizens protest to the President against pauper immigration; measures against the abuse taken by New York. Stormy debate in the Spanish Cortes over a court scandal.

24. Louise Michel condemned in Paris to six years' imprisonment. The cholera breaks out in Egypt at Damietta.

25. Reduction of the number of internal revenue districts from 126 to 82. Passage of the new ecclesiastical law in Prussia. Fatal fire in a puppet show at Dervio, in Italy.

26. Supreme court of Ohio declares the Scott law constitutional. Accident on Northern Pacific Railroad in Montana, killing 18 Chinamen. Understanding arrived at between Russia and the Vatican.

27. The Republicans of Iowa renominate Governor Sherman, and declare in favor of prohibition and protection. Republicans of Minnesota renominate Governor Hubbard. Success of the Slavs in elections to the Bohemian and Galician Diets.

28. Rejection by the British House of Lords of the bill to legalize marriage with a deceased wife's sister.

29. The Küstrin fortress converted into an arsenal.

30. Count de Chambord taken ill. Spread of the cholera epidemic in Egypt; quarantine measures adopted in Europe.

July 1. The new tariff comes into operation.

2. Santa Fé celebrates the 333d year of its existence.

3. Validity of the Downing license law affirmed by the Supreme Court of Missouri. A steamer at Glasgow careens upon launching, and sinks, with 100 persons in her hold.

4. Anti-Monopolist Convention in Chicago. The Dutch Arctic steamer Varna lost in the Kara sea.

5. Fatal boiler-explosion at Huntsville, Texas. England promises to use precautions against the sending of paupers to the United States.

6. Resolution in favor of woman suffrage rejected in British Parliament by 130 to 114 majority.

7. The captive Apaches taken by Gen. Crook ordered to be placed on the San Carlos Reservation.

9. Bradlaugh again refused admission to the House of Commons. Capture of Guayaquil by the revolutionists in Ecuador, and flight of Veintemilla.

10. New pension frauds detected and arrest of clerks. Chinamen, smuggled into British Columbia, are expelled.

11. Resolution adopted by the Pennsylvania Republicans in convention, which proposes to distribute the surplus revenues of the Government among the

States. Destructive flood in Ontario, Canada. The British Government accepts Lesseps's project for a new Suez canal.

12. Condemnation of Socialists in Posen.

13. Death of Queen Ranavalo II of Madagascar. News arrives of the death of M'tesa, Emperor of Uganda.

14. Anniversary of the storming of the Bastile celebrated in Paris.

15. Arrest of 15 students in St. Petersburg.

16. The civil-service law goes into effect.

17. Mining Exhibition in Denver, Col. Waddington appointed French Embassador to London.

19. French victory over the Anamese in Tonquin in a sortie from Namdinh.

20. The Federal Government charges the American consuls in England with the duty of inspecting vessels departing for the United States. Death of King Tuduc of Anam. International rifle-match at Wimbledon, in England.

21. Gladstone abandons the Lesseps arrangement. The American rifle-team beaten by the British at Wimbledon.

23. The Arctic steamer Proteus crushed in the ice; the crew rescued. Wharf at North Point, Tivoli, near Baltimore, breaks in and kills 65 people.

24. Captain Webb drowned in the whirlpool at Niagara. Defeat of Cetewayo.

25. The Federal Government adopt sanitary precautions against yellow fever and cholera.

26. Call of the last 3½ per cent. bonds.

27. Railroad collision at Albion, N. Y. Death of Montgomery Blair.

28. The defaulting State Treasurer of Tennessee condemned to twenty years' imprisonment.

29. The island of Ischia convulsed by an earthquake, destroying the village of Casamicciola and killing thousands. The judiciary reforms approved by the French Senate. Suicide at New York of Señor Barca, Spanish Minister to the United States.

30. Carey, the approver, murdered by O'Donnell before he disembarked at Cape Colony. End of the revolution in Ecuador.

31. Mexico issues $15,000,000 of new bonds in payment to her creditors.

August 1. Opening of the Southern Exhibition in Louisville. Discovery of a widely ramified Nihilistic conspiracy in Russia.

2. A. F. Pike elected United States Senator from New Hampshire. Session of the French Chambers ended. Jewish persecutions in Ekaterinoslav, Russia. French Chamber adjourns.

3. The accused in the Jewish trial at Tisza-Eslar acquitted.

4. Earthquake in Mexico.

5. Military insurrection in Badajoz, Spain; demands for Zorilla as President and the restoration of the Constitution of 1869; outbreaks also at Barcelona and other places.

6. Proctor Knott elected Governor of Kentucky.

7. National convention of iron and steel workers in Philadelphia.

8. American Forestry Convention in St. Paul. Meeting of the German and Austrian Emperors at Ischl. Anti-Semitic demonstrations in Hungary.

9. The dynamite conspirator Featherstone and associates condemned at Liverpool to the penitentiary for life.

10. Labor riot in Vienna.

11. Canon Bernard acquitted of the charge of embezzlement at Tournay, Belgium.

12. Fire in Atlanta; the Kimball House destroyed.

13. Municipal office-holders in Baltimore indicted. The Pope summons American bishops to Rome.

14 Railroad laborers' strike at Bethlehem, Pa., ended.

15. Storm in Switzerland.

16. Fire in Chicago. Opening of the Electrical Exhibition in Vienna.

17. Petroleum discovered in Colorado. Deportation to Siberia of 22 Russian students. Strike of 8,000 weavers in Ashton-under-Lyne, England.

18. Fight between Protestants and Catholics in Scotland.

19. Death of Judge Jeremiah S. Black.

21. Cyclone in Minnesota, which destroyed a portion of the city of Rochester, and lifted a train from the track, killing 30 persons and wounding 50.

22. Northern Pacific railroad completed.

24. Death at Frohsdorf of the Comte de Chambord.

25. Prorogation of British Parliament. Treaty of Hué, in Anam, signed after the capture of the capital by the French. Scaffold falls in the King of Bavaria's new palace on the Chiemsee, killing 23 workmen.

26. Fresh anti-Jewish outbreak in Russia. Steamer Woodburn lost, with 18 of the crew, off Eddystone Lighthouse.

27. Spanish commercial treaty approved by German Federal Council. The King of Roumania returns from a visit to Vienna and Berlin. Anti-Magyar demonstration in Croatia. Eruption of the volcano of Krakatoa, between Java and Sumatra.

28. Explosion of the boilers of the steamer Riverdale, on the North River, New York. Resignation of the Spanish Ministry. Volcanic eruptions in Java cause a terrific tidal wave and sweeping destruction of human lives in the Straits of Sunda.

29. Zorilla expelled from France.

30. Visit of the Czar and Czarina in Copenhagen.

31. Departure of King Alfonso for Paris.

September 1. Defeat of the Black Flags between Hanoi and Sontay after a desperate engagement.

2. Railroad accident at Steglitz, near Berlin. Arrest of dynamite conspirators at Glasgow.

3. Opening of the Boston Exhibition. Miners' strike in Ohio and Pennsylvania. Death at Bougival, in France, of Ivan Turgenieff.

4. Railroad accident near Grayville, Ill., killing nine militiamen.

5. Chinese troops arrive in Tonquin. Sanguinary riots in Croatia.

6. Sinking of the steamer Canima off Newfoundland. Acquittal of Frank James, the Missouri bandit. Labor disturbance in Vienna.

7. Alfonso, King of Spain, leaves Paris for Vienna.

8. Corn-crop injured by frost. Opening of the Northern Pacific railroad. Desperate battle before Miragoane in Hayti; Government troops defeated.

9. Demonstration of the Irish National League.

11. Architect Hill's official conduct reproved by the investigating committee. Chinese excesses against Europeans in Canton. Celebration in Vienna of the 200th anniversary of deliverance from the Ottoman yoke. Death in Paris of Henri Conscience.

13. Luther anniversary in Wittemberg.

14. The Black Flags beaten by the French in Tonquin.

15. Arrival of the Corean embassy in Washington.

17. Restoration of the Bulgarian Constitution.

18. Gladstone's meeting with the Czar at Copenhagen.

19. Resignation of Treasury Architect Hill. Republican Convention of New York State. Massachusetts Republicans nominate George D. Robinson for Governor. Ministerial crisis in Servia.

20. Railroad war in the West. Autumn manœuvres of the German army near Merseburg.

21. Direct telegraphic communications between the United States and Brazil *via* Central America, opened.

24. Colored Men's National Convention in Louisville.

25. Butler nominated by the Greenback party of Massachusetts.

26. The Massachusetts Democrats make General Butler their candidate for Governor.

27. The Colored Men's Convention issues an address to the American people. Democratic State ticket adopted at Buffalo.

28. Unveiling of the German national monument

in the Niederwald, commemorating the victory of 1870–'71.

29. Powder-explosion in San Francisco; 40 Chinamen killed. King Alfonso insulted in Paris on his return from Germany.

October 1. Reduction of letter-postage from three to two cents goes into operation.

3. The question of the escutcheons in Croatia settled. Pittsburg Exposition Building burned.

4. The Norwegian Ministry indicted. Dissolution of the Servian Skuptchina.

6. Bicentenary of the Germans in America. Resignation of the French Minister of War, Tibaudin.

7. Mormon conference upholds polygamy.

9. Republican success in Iowa. Victory of the Democrats in Ohio; Hoadley elected Governor; prohibition amendment defeated. Yellow fever in Alabama.

10. Attempt on the life of the Bulgarian Minister of the Interior.

11. Project of uniform time proposed by a convention at Chicago. Amnesty declared by the Khedive. Spanish Ministry resigns; Posada-Herrera forms a Cabinet.

13. Northern Pacific railroad opened to traffic.

14. $13,000,000 three per cent. bonds called in by the Secretary of the Treasury. The new Spanish Ministry enter on their duties.

15. The Supreme Court decision that important provisions of the Civil Rights Act are unconstitutional. Return of the Czar to St. Petersburg. Earthquake in Asia Minor. In Ermersleben, Germany, 110 persons are attacked with trichinosis.

16. Collision between Slavs and Magyars in Hungary.

17. Southern colored people protest against recent decisions of the Federal courts.

18. Centennial Celebration in Newburg. Acquittal of ex-Senator Sessions of bribery in the New York Legislature.

20. Signing of treaty of peace between Chili and Peru at Ancon.

21. Cabinet changes in Portugal.

23. Reassembly of the French Chambers. Adjournment of the Austro-Hungarian Delegations. Fresh outbreak of cholera in Egypt. Iglesias enters Lima. New Portuguese Cabinet, with Pereira de Mello as Premier and Minister of War.

24. Marquis of Lansdowne assumes office as Governor-General of Canada. Prolongation of the miner state of siege in German cities.

27. The Apaches deliver themselves up in Mexico.

29. E. M. Bell, of Iowa, appointed Supervising Architect of the Treasury. Failures in Liverpool.

30. The Utah Commission recommends stringent measures against polygamy. Dynamite explosions in the Underground railway in London.

31. Luther celebration in Worms and Wittemberg. Close of the Fishery Exhibition in London. Labor Congress in Paris. Tonquin debate in the French Assembly results in a vote of confidence. Collision of the steamer Holyhead with the ship Alhambra in St. George's Channel.

November 1. Gen. Sherman retired from the chief command of the army, and Gen. Sheridan assumes command. Orange riot in Londonderry.

2. Collision between whites and negroes in Virginia. Grand jury of St. Louis indicted.

3. Close of Vienna Electrical Exhibition. Rebellion in Afghanistan.

5. Hurricane in Springfield, Mo. Insurrection in Servia. Egyptian army in the Soudan annihilated by the followers of the False Prophet.

6. State elections: Democratic success in New York (except the Secretary of State), New Jersey, Maryland, Virginia, and Mississippi; Republican victories in Massachusetts, Connecticut, Pennsylvania, Minnesota, and Nebraska.

7. Mine-explosion in the Moorfield colliery at Actrington, England; 63 victims.

8. Wreck of the Iris off the Spanish coast; 35 lives lost. Beginning of the investigation of the Greely relief expedition. Roof of the Wisconsin State Capitol falls in.

9. Fire in Shenandoah, Pa.; 200 families homeless.

10. Luther centennial celebrated in Germany, America, Austria, and England.

11. Republican demonstration in Madrid.

12. Gale in Chesapeake Bay, and more than 20 lives lost. Court Chaplain Stöcker, German anti-Semitic leader, hissed in London.

14. Meeting of De Giers and Bismarck. Completion of the Arlberg tunnel.

15. Closing of iron-works in Pittsburg.

17. Call of the Secretary of the Treasury for $10,000,000 more of three per cents. The German Crown Prince departs on his journey to Spain.

18. Normal time introduced in the United States and Canada. Excesses of the striking miners in Michigan. British steamer Condor with 18 men lost off the coast of Holland. Death of Safvet Pasha at Constantinople.

19. Challemel-Lacour resigns; Ferry takes the portfolio of Foreign Affairs and Fallières becomes the Minister of Public Instruction.

20. Poole the Fenian condemned to death. Sinking of a steamer and loss of 50 lives in Lake Superior. Anti-German demonstration in Prague.

22. Cordial reception of the German Crown Prince in Spain.

23. Arrest of the German Socialist Wolf for dynamite conspiracy in London.

24. Sergeant Mason pardoned.

27. The German Emperor declares the European peace secured. Removal of the prohibition of American pork in France.

29. The American bishops close their labors in Rome.

30. Address to the people issued by the Democratic State Committee of Virginia. The Pennsylvania Legislature passes the apportionment bill. The Hungarian Lower House adopt the Government project for legalizing mixed marriages. Agreement between Lesseps and the English ship-owners arrived at.

December 1. O'Donnell condemned to death.

2. Meeting of Congress. Carlisle elected Speaker of the House of Representatives. Understanding between the European Governments with respect to the protection of Europeans in China. Protestants mobbed in Ireland.

4. The President's annual message. The Austrian Reichsrath meets. The French bombard several towns in Madagascar.

6. The Pennsylvania Legislature adjourns at last. Secret ballot rejected by the Prussian House of Deputies.

7. Annual report of the Secretary of the Navy. Restoration of the Bishop of Limburg. Dr. Welti elected Swiss Federal President. Duel between the Italian politicians Nicotera and Lovito.

8. The Australian colonies resolve in favor of union.

10. Committees of the United States Senate reorganized. The House of Representatives resolves in favor of intervention in the case of O'Donnell. The French Chamber passes the Tonquin vote of credit.

11. The Hungarian House of Magnates defeats the mixed marriage bill. The Irish national testimonial (£38,000) presented to Parnell. Peace declared between Chili and Bolivia.

12. Session of the Republican National Committee and choice of Chicago for the next national convention.

13. The Dwight insurance case decided against the companies. Murder of the King of Anam.

14. Bloodshed at New Orleans primary elections.

15. Wages reduced in the iron and steel industry. Opening of the session of the Spanish Cortes. A police official murdered by Socialists in Vienna.

17. Vote of censure against Puttkammer in the

Prussian House of Deputies. Execution of O'Donnell in London. Capture of Sontay by the French.

18. Visit of the German Crown Prince to the Pope. Execution of Poole in Dublin.

20. Opening of the new railroad-bridge over the Niagara.

21. Important communications from the Secretary of the Treasury touching certain Pacific railroads. Pension swindlers in Washington indicted.

24. Congress adjourns for the holidays. Announcement of the House committees.

25. Explosion in Birkenhead, England.

26. Expulsion of Frenchmen from Elsass-Lothringen. Avalanche in Colorado. Orange riot in Newfoundland.

27. The French prohibition of American pork again put in force.

28. The Mahdi advances on Khartoum.

29. Project for the colonization of Algiers voted down in the French Chamber. Lieut.-Col. Sudeikin, of the Russian police administration, murdered by Nihilists in St. Petersburg.

F

FAILURES IN BUSINESS. The report prepared by Bradstreet's Commercial Agency, and published in its "Journal," shows that the business failures in the United States during 1883 greatly exceeded, in number and extent of liabilities, those of any preceding year since 1878, when the commercial depression following the panic of 1873 culminated. A comparison for the five years following 1878 is afforded by this exhibit:

YEAR.	Number of failures.	Assets.	Liabilities.	Percent. of assets to liabilities.
1879.....	6,659	$48,906,000	$99,636,000	49
1880.....	4,350	27,436,000	57,120,000	48
1881.....	5,929	35,964,000	76,094,000	47
1882.....	7,635	47,469,000	93,238,000	51
1883.....	10,299	90,804,000	175,968,000	52

The figures for Canada and Provinces for the same period are as follow:

YEAR.	Number of failures.	Assets.	Liabilities.	Percent. of assets to liabilities.
1879.....	2,075	$16,198,000	$32,356,000	50
1880.....	889	4,760,000	9,340,000	47
1881.....	607	3,278,000	6,122,000	54
1882.....	755	3,948,000	8,139,000	49
1883.....	1,464	12,367,000	22,155,000	56

Classified by quarters of the year, the number of failures in the United States in 1883 was as follows: First quarter, 3,189; second quarter, 2,107; third quarter, 2,062; fourth quarter, 2,941.

The following is a summary of failures in the United States, by States, geographical divisions, and chief cities, and also in Canada, for the year ending Dec. 31, 1883:

	No. failures	Nominal assets.	Actual assets.	General liabilities.
N. E. STATES.				
Maine.....	249	$1,972,727	$1,421,723	$3,047,660
New Hampshire.	98	401,398	257,075	616,606
Vermont.....	63	2,286,600	1,512,500	2,708,300
Massachusetts..	809	16,487,397	8,537,794	26,200,552
Rhode Island...	115	2,468,800	1,638,270	2,488,800
Connecticut.....	168	992,000	661,203	1,307,844
Totals.....	1,507	$24,608,922	$14,028,565	$36,369,762
MIDDLE STATES.				
New York.....	1,105	31,561,880	19,164,201	39,795,183
New Jersey.....	145	2,267,158	1,314,059	2,730,208
Pennsylvania....	1,056	14,529,648	9,107,499	16,863,224
Delaware	22	173,230	106,704	284,000
Totals	2,328	$48,531,911	$29,722,463	$59,672,565
SOUTHERN STATES				
Maryland.....	125	1,174,127	702,481	1,753,404
Virginia.....	113	939,534	666,650	1,214,340
West Virginia...	51	209,540	145,900	258,198
North Carolina..	168	920,633	628,027	1,484,066
South Carolina..	118	814,216	543,907	1,064,877
Georgia and Fla.	275	2,545,672	1,661,045	2,986,645
Alabama.....	95	773,800	483,656	1,091,059
Mississippi.....	112	1,508,940	719,095	2,167,637
Louisiana.....	121	2,203,281	1,116,000	2,483,850
Texas.....	373	2,069,685	1,540,855	3,050,233
Kentucky.....	169	1,135,431	886,748	1,579,141
Tennessee	139	607,018	416,660	891,411
Arkansas	82	481,800	318,665	629,710
District Columbia	41	236,977	162,000	359,926
Totals.....	1,982	$15,620,654	$9,991,689	$21,014,497
PACIFIC STATES				
California.....	771	4,050,667	3,171,408	6,311,761
Nevada.....	39	301,400	258,400	406,660
Oregon..... ..	91	697,675	564,000	947,300
Totals.....	901	$5,049,742	$3,993,808	$7,665,721
Territories.....	299	$3,100,400	$2,136,496	$3,519,626
WESTERN STATES.				
Ohio.....	591	6,982,841	4,746,434	9,913,332
Indiana.....	296	4,223,484	2,284,013	3,716,940
Illinois	591	14,580,523	11,603,257	14,224,136
Missouri.....	274	3,425,729	2,246,456	4,106,861
Michigan.....	341	4,899,736	3,360,215	5,051,944
Wisconsin	140	2,942,407	2,072,791	2,972,762
Minnesota.....	193	1,491,711	1,037,900	1,599,006
Iowa	339	2,146,622	1,728,001	2,534,288
Nebraska.....	174	500,748	212,779	576,800
Kansas	111	643,650	419,511	856,847
Colorado.....	282	1,749,634	1,225,850	2,172,998
Totals.....	3,282	$43,587,085	$30,931,707	$47,725,914
SUMMARY.				
New England...	1,507	24,608,922	14,028,565	36,369,762
Middle States...	2,328	48,531,911	29,722,463	59,672,565
Southern States.	1,982	15,620,654	9,991,689	21,014,497
Western States..	3,282	43,587,085	30,931,707	47,725,914
Pacific States...	901	5,049,742	3,993,808	7,665,721
Territories.....	299	3,100,400	2,136,496	3,519,626
Totals.....	10,299	$140,498,714	$90,804,728	$175,968,085
PRINCIPAL CITIES				
New York.....	478	22,166,059	13,943,151	27,073,196
Philadelphia	284	3,157,187	1,855,184	4,181,964
Boston	286	11,903,286	6,235,450	14,320,827
DOM. OF CANADA.				
Quebec.....	460	10,247,670	7,126,088	11,307,510
Ontario.....	656	4,501,745	2,698,132	5,550,637
Provinces.....	348	4,720,963	2,543,750	5,297,183
Totals.....	1,464	$19,470,378	$12,367,970	$22,155,330

An analysis by trades of the failures in the United States, in 1883, shows the following results:

TRADES.	Eastern States.	Middle States.	Southern States.	Western States.	Pacific States.	Territories.	Total, U. S.	Canada and Provinces.
Agricultural implements	2	19	7	55	6	6	95	7
Bakers	18	16	7	16	5	..	62	9
Banks	1	7	2	6	..	2	18	2
Bankers	2	10	1	13	..	1	27	4
Blacksmiths	5	9	..	15	2	..	31	11
Books and stationery	15	29	18	28	9	6	105	13
Boots and shoes, M	47	9	1	12	2	..	71	7
Boots and shoes, R	45	118	54	132	33	9	391	64
Boots and shoes, W	8	..	1	7	..	..	16	7
Bottlers	..	3	..	..	..	..	3	..
Brewers	1	6	2	14	2	..	25	1
Brick, M	..	5	..	7	..	..	12	4
Brokers	..	15	5	9	6	..	35	2
Builders	18	9	..	6	11	..	44	5
Butchers	3	14	3	1	21	1	43	4
Carpenters	9	10	6	6	3	1	35	2
Carpets, M	2	7	..	..	1	..	10	..
Carpets, W	..	1	..	2	..	..	3	1
Carriages and wagons, M	10	38	11	32	6	..	97	7
Cattle-dealers	1	1	..	..	..	3	5	..
Clothing, M	..	7	2	1	..	..	10	1
Clothing, R	37	74	52	173	25	10	371	10
Clothing, W	..	20	2	8	4	..	34	1
Coal	6	24	2	24	5	..	61	4
Confectionery, M	..	2	..	1	..	..	3	..
Confectionery, R	17	24	25	40	5	..	111	13
Coopers	..	..	..	1	..	..	1	..
Contractors	7	5	4	8	12	1	37	6
Cotton	3	4	18	..	..	..	25	2
Cotton goods, M	9	12	2	..	..	..	23	..
Creameries	..	6	..	8	..	..	14	..
Crockery and glassware, M	..	3	..	3	..	..	6	1
Crockery and glassware, R	8	19	11	17	7	2	64	4
Crockery and glassware, W	..	4	2	3	..	..	9	1
Drugs, W	1	3	1	2	..	2	9	..
Drugs, oils, and paints, R	38	54	43	103	7	9	254	17
Dry goods, R	48	70	117	133	29	12	414	113
Dry goods, W	6	6	1	11	3	2	29	13
Fancy goods, R	23	28	7	13	7	..	78	11
Fancy goods, W	3	4	..	1	1	..	8	1
Fire-arms, M	2	2	..	3	1	..	8	1
Fish, R	16	3	2	4	..	..	25	1
Flour, W	1	1	..	..	..	..	2	..
Flour and feed	11	22	3	8	4	..	48	5
Flouring-mills	..	12	5	34	2	..	53	11
Frames, M	2	6	2	7	..	..	17	1
Fruits	13	10	7	5	20	..	55	5
Furniture, M	9	8	..	8	2	..	27	6
Furniture, R	22	33	19	46	13	9	142	23
Furniture, W	1	2	..	1	..	..	4	..
Furs, M	..	10	..	1	..	..	11	..
General stores	96	175	707	449	151	79	1,657	319
Gents' furnishing	23	33	17	29	10	..	112	10
Glass, M	1	..	..	..	..	..	1	..
Grain	8	5	4	51	2	1	71	4
Grist-mills	1	4	1	..	..	..	6	1
Grocers, R	231	278	297	428	68	30	1,332	186
Grocers, W	2	1	6	15	4	1	29	15
Hats and caps, M	3	18	2	1	..	..	24	2
Hats and caps, W	..	5	2	6	..	..	13	3
Hats, caps, and furs, R	11	16	9	32	2	1	71	12
Hardware, M	1	1	..	..	..	..	2	..
Hardware, R	17	18	21	108	7	8	179	31
Hardware, W	1	5	2	5	..	..	13	5
Harness or saddlery, M	2	3	1	3	1	..	10	2
Harness or saddlery, R	9	13	11	53	14	6	106	12
Harness or saddlery, W	..	1	1	1	..	..	3	1
Hosiery, M	1	14	..	..	..	..	15	2
Hotels	34	37	27	55	39	10	202	46
House-furnishing	..	4	1	2	1	..	8	..
Iron and steel, M	6	16	4	19	1	1	47	5
Jewelry, R	21	50	24	88	14	7	204	21
Jewelry, W	..	10	..	4	..	..	14	4
Jewelry or watches, M	18	4	..	2	..	2	26	..
Leather, M	7	13	2	4	2	..	28	8
Leather, hides, etc., W	11	14	..	6	4	..	35	8
Leather goods, M	2	..	..	..	..	..	2	..
Liquors, W	7	14	7	12	5	6	51	6
Liquors or beer-saloons, R	46	63	89	131	94	27	450	28
Livery-stables	15	2	2	4	1	..	24	4
Lumber, M	14	27	15	19	5	4	84	19
Lumber, R	9	14	1	15	..	1	40	3
Lumber, W	5	13	2	15	3	..	38	1
Machinery, M	11	9	5	9	3	..	37	5
Marble	5	6	..	7	..	..	18	1
Meats, R	6	10	..	17	13	..	46	2
Meats, W	3	1	..	1	..	..	5	..
Merchant tailors	29	39	18	77	20	3	186	33

TRADES.	Eastern States.	Middle States.	Southern States.	Western States.	Pacific States.	Territories.	Total, U. S.	Canada and Provinces.
Metals	1	1	..	2	..	..	4	..
Millinery and straw goods, M	2	3	..	..	..	..	5	..
Millinery and straw goods, R	28	29	34	78	4	2	175	31
Millinery and straw goods, W	..	11	2	6	1	..	20	1
Miscellaneous *	132	298	104	182	67	6	789	96
Music and musical instruments, R	2	4	3	11	..	1	21	1
Notions, R	3	5	6	31	4	4	53	..
Notions, W	1	10	2	12	..	..	25	..
Oils, M	1	1	..	3	..	..	5	..
Oils, W	1	5	2	5	..	..	13	4
Painters	7	3	2	1	3	..	16	12
Paints, W	..	2	2	3	..	..	7	..
Paper, M	4	3	3	3	1	..	14	8
Paper, W	6	5	1	4	..	..	19	..
Photographers	..	..	..	1	1	..	2	..
Pianos and organs	6	..	..	2	..	..	8	..
Pictures	2	2	1	3	3	..	11	1
Plumbers and gas-fitters	4	9	3	7	2	2	27	1
Printers	13	10	8	16	5	..	52	8
Produce, R	12	13	1	3	8	..	37	1
Produce, W	6	5	7	5	4	..	27	7
Provisions, R	58	5	2	2	..	1	68	4
Provisions, W	1	6	..	4	1	..	12	2
Publishers	8	10	4	15	8	2	42	8
Restaurants	6	17	28	52	21	7	131	4
Stoves, M	1	1	1	1	..	..	4	..
Stoves, R	16	11	5	14	2	..	48	6
Sewing-machines	..	2	1	..	1	..	4	..
Silks, M	..	5	..	..	..	..	5	..
Tailors' trimmings, W	..	..	..	2	..	..	2	..
Teas and coffees, R	10	7	1	3	..	..	21	3
Teas and coffees, W	1	5	1	1	..	..	8	3
Tinware	5	10	3	12	4	3	37	16
Tobacco or cigars, M	5	23	7	16	8	1	60	9
Tobacco or cigars, R	17	34	16	52	15	5	139	13
Tobacco or cigars, W	1	2	3	3	1	..	10	7
Toys	2	4	1	2	..	..	9	..
Undertakers	5	6	1	7	..	..	19	2
Upholsterers	..	1	..	1	..	..	2	..
Varieties	4	3	3	5	14	2	31	2
Wood	..	1	1	1	4	..	7	1
Wood or willow ware, M	..	2	..	3	1	..	6	1
Woolen goods, M	14	10	..	3	..	..	27	7
Woolens, W	2	4	..	1	..	..	7	3
Total	1,507	2,328	1,982	3,282	901	299	10,299	1,464

* A large proportion of the failures classified as miscellaneous may be characterized as miscellaneous manufactures, including, as they do, makers of patented articles, novelties, and specialties not strictly under any class given above.

Commenting on the fact that the number of business failures in the United States in 1883 shows a large increase when compared not only with 1882, but also any preceding year, with the exception of 1878, Bradstreet's "Journal" explains that this exhibit is less startling when more closely examined. The number of legitimate trading concerns recorded in the Bradstreet Agency at the close of 1883 was 838,823, as compared with 548,180 in 1873, a gain of 290,646 in ten years. In 1878, at the end of a five years' depression in general trade, there was but a moderate gain in the number of business enterprises, while now the total number of traders having a distinctive place in the commercial and industrial community is 50 per cent. greater than ten years ago. Fully 60 per cent. of this development in trade has taken place since 1878. The expansion in business, extending over 1880 and 1881, was very great, and competition was keen, resulting in a continuous increase in the number of failures from year to year. The "Journal" says:

The enforced contraction in production during the past two years, shrinkage in prices, abuses of the credit system, and competition for the survival of those firms which could work at the least expense and otherwise to the best advantage, have all tended to crowd the weaker trader or manufacturer to the wall. Thus, with from 180,000 to 200,000 new competitors within five years, the arrival of a period of enforced contraction of production, distribution, and prices, with a commercial obituary list of some 300 less than in 1878, can not be regarded as indicative of a radical unsoundness in the present business situation. As heretofore, the list of failures given includes none which have been the outcome of purely speculative dealing as a distinctive occupation. From this analysis some so-called business failures have been intentionally omitted as in no way forming a part of the mortality list in the legitimate commercial world. It should be borne in mind that it is a general rule with failing traders to swell the aggregate of liabilities in the event of disaster. We have previously defined a failure as that which has to be considered as a matter of record in the regular conduct of business of a mercantile agency. In preparing a list of mercantile traders it will be recalled that planters, other agriculturists, and those engaged in professional occupations, are necessarily excluded under the above definition.

The statistics for 1883 show two other noteworthy results: First, that the average proportion of indebtedness offset by available assets is larger than ever before, amounting to 52 per cent. Second, that there has been a striking increase in the percentage of liabili-

ties. This increase, with the increased per cent. in the number of failures during the past three years, has been as follows:

IN THE AGGREGATE.	1883	1882	1881	1880
Increase per cent. of number of failures	29	38	35	34*
Increase per cent. of liabilities	88	22	33	22*

The average amount of liabilities per failing trader in 1883 was about $17,000; in 1882 it was $12,212; in 1881, $12,800; in 1880, $13,131; in 1879, $14,970.

"The general improvement," says Bradstreet's "Journal," "in the record of 1880 as compared with 1879, as shown above, was fully offset by the increased mortality and losses in liabilities taking place in 1881. The number of failures from the latter date has increased in a like ratio in both years (1882-'83), but the increase per cent. of liabilities is strikingly large in 1883, the gross indebtedness of 1883 being nearly double that of 1882. There have been 33 failures during the year with liabilities aggregating $37,000,000. With these omitted from the list, as being due to special causes, the increase per cent. in liabilities (total) in 1883, as compared with 1882, drops from 88 per cent. to 33 per cent."

Grouping the returns, as to average individual indebtedness and ability to liquidate, by geographical divisions, the exhibit is as follows:

TO EACH FAILING TRADER.	Average liabilities.			Per cent. of assets to liabilities.		
	1883	1881	1879	1883	1881	1879
In New England	24,133	11,765	16,433	39	41	41
In Middle States	25,632	19,238	17,507	50	43	51
In Western States	14,541	9,764	13,740	65	53	51
In Southern States	10,602	12,425	13,270	48	55	54
In Pacific States	8,507	8,157	11,302	52	38	47
In Territories	11,799	13,590	13,666	61	64	45

In New England, the record of commercial disaster during the year was 1 in every 61 engaged in business; in the Middle States, 1 in 104; in the Southern States, 1 in 69; in the Western States, 1 in 99; in the Pacific States, 1 in 30; and in the Territories, 1 in 15. For the country in 1878 the average was 1 failure for every 56 in business. The average throughout the United States in 1883 was 1 failure for every 82 traders.

At least 76 per cent. of the whole number of failures in 1883 were those in which the liabilities amounted to less than $10,000. But 13 per cent. of the whole number had liabilities ranging from $10,000 to $25,000, and about 5 per cent. were individually indebted from $25,000 to $50,000 each. The proportion of failures in which the liabilities amounted to from $50,000 to $100,000 was but about 2¾ per cent. of the whole, and of those whose liabilities were from $100,000 to $500,000 each the proportion was about 1½ per cent. only. This calculation indicates that more than 7,800 of the 10,299 failures reported in 1883 were those in which the debt in each instance did not exceed $10,000; that more than 1,300 failing traders' liabilities were between $10,000 and $25,000; that in the case of more than 500 the debts were from $25,000 to $50,000; that 300 of the failures had debts from $50,000 to $100,000 each, and that the liabilities of less than 160 were from $100,000 to $500,000 each. The record of more than 10,000 business failures in 1883 is robbed of considerable of its apparent force by the fact that nearly 90 per cent. were of business houses which owed each less than $25,000, and that the liabilities of six sevenths of the total so specified owed each less than $10,000.

Not included in the above review are the thirty-three heaviest failures, the liabilities of each exceeding $500,000. Of these, ten showed liabilities from $500,000 to $600,000 each; five, from $600,000 to $700,000; four, from $700,000 to $800,000; two, from $800,000 to $900,000; three, from $900,000 to $1,000,000; five, from $1,000,000 to $2,000,000; two, from $2,000,000 to $3,000,000; one, $3,421,000; and one, $7,509,000. The failures in which the liabilities reached $1,000,000 were these:

	Assets.	Liabilities.
Union Iron and Steel Co., Chicago	$1,719,000	$3,421,000
A. D. Smith & Co., cotton manufacturers, Providence, R. I.	1,200,000	1,700,000
Frederick Mayer & Co., wholesale cloths, New York	1,250,000	2,000,000
Levy Brothers & Co., wholesale clothing, New York	1,500,000	1,600,000
James Marshall & Co., iron manufacturers, Pittsburg, Pa.	1,200,000	1,900,000
George William Ballou & Co., bankers	800,000	1,000,000
C. W. Copeland & Co., wholesale boots and shoes, Boston	964,000	2,101,000
F. Shaw & Brother, leather, Boston	5,262,000	7,509,000
Benjamin Burgess's Sons, wholesale sugar, Boston	300,000	1,400,000

The thirty-three firms above referred to, owed about $37,300,000 in the aggregate, or an average of about $1,130,000 each. Of the total of over $37,000,000 of debts, Boston firms are to be charged with $11,662,000 directly due to the F. Shaw & Brother failure. New York's total is $10,225,000, about one third of which was due to the Mayer and Levy embarrassments. Chicago ranks third, with $4,512,000 liabilities, or about equal to the total liabilities of all kinds reported from Philadelphia. Thirty-one of the firms whose actual assets were reported, gave the total of the same at approximately $20,000,000, as against $36,000,000 aggregate liabilities, thus indicating a possible settlement at 55 cents on the dollar.

A valuable study bearing on the subject of commercial failures is afforded by an examination of the total number of traders and of failures in business in the United States, in 1880, in connection with the aggregate capital directly and indirectly invested in business in that year. The statistical returns of such capital, and also of the number of traders engaged in business, are reported for the first time by the Federal census of 1880. These

* Decline in number from 1879 of failures and amount of liabilities.

SECTIONS.	Total amount of capital invested in business. [000's omitted.]	Total number of traders in business in 1880.	Number of failures in business in 1880.	Ratio of failures to number of traders.	Average amount capital per trader in States.
EASTERN.	Dollars.				Dollars.
Connecticut	296,377	15,418	86	1 in 179	19,200
Maine	92,616	11,672	96	1 in 122	7,900
Massachusetts	1,041,396	37,308	334	1 in 112	27,000
New Hampshire	62,210	7,282	32	1 in 227	8,500
Rhode Island	131,557	6,078	65	1 in 94	21,000
Vermont	37,563	6,558	22	1 in 298	5,700
Totals	1,661,718	84,306	635	1 in 135	19,700
MIDDLE.					
Delaware	31,607	3,500	15	1 in 223	9,000
New Jersey	143,490	19,276	52	1 in 370	7,400
New York	1,822,524	105,819	554	1 in 191	17,200
Pennsylvania	867,584	80,614	289	1 in 278	10,700
Totals	2,865,205	209,209	910	1 in 232	18,700
SOUTHERN.					
Alabama	37,017	6,417	66	1 in 97	5,700
Arkansas	22,042	4,840	60	1 in 80	4,500
Florida	12,149	1,843	90	1 in 112	6,500
Georgia	85,337	8,804			10,300
Louisiana	76,252	7,292	86	1 in 85	10,400
Maryland	220,916	13,974	68	1 in 205	15,900
Mississippi	33,192	5,257	151	1 in 35	6,300
North Carolina	51,519	6,939	85	1 in 81	7,400
South Carolina	39,024	4,568	43	1 in 106	8,500
Tennessee	74,526	8,092	145	1 in 56	9,200
Texas	70,047	11,403	144	1 in 80	6,100
Virginia	94,343	10,715	65	1 in 164	8,800
West Virginia	38,711	5,348	35	1 in 152	7,200
Totals	855,581	95,022	1,038	1 in 92	9,000
WESTERN.					
Colorado	21,785	3,801	21	1 in 181	5,700
Illinois	486,014	51,216	150	1 in 341	9,400
Indiana	180,090	29,565	107	1 in 276	6,000
Iowa	135,736	25,290	105	1 in 244	5,300
Kansas	46,214	10,334	66	1 in 156	4,400
Kentucky	134,861	15,238	71	1 in 214	8,800
Michigan	300,148	26,890	125	1 in 215	11,100
Minnesota	85,084	11,014	75	1 in 146	7,700
Missouri	253,727	26,257	136	1 in 193	9,600
Nebraska	26,516	6,094	87	1 in 70	4,300
Ohio	595,576	54,683	165	1 in 300	10,900
Wisconsin	173,652	22,015	65	1 in 354	7,800
Totals	2,439,408	282,397	1,173	1 in 241	8,600
PACIFIC.					
California	255,412	18,000	405	1 in 44	14,100
Oregon	18,559	2,683	51	1 in 52	6,900
Nevada	6,075	1,562	57	1 in 27	3,900
Totals	280,047	22,245	513	1 in 43	12,500
TERRITORIES.					
Alaska	157	....	...	.....	....
Arizona	2,601	353	14	1 in 25	7,000
Dakota	7,785	2,219	*26	*1 in 107	3,500
Idaho	2,266	361	5	1 in 72	6,200
Indian Territory	1,798	168	...	.....	10,000
Montana	9,154	802	6	1 in 133	11,400
New Mexico	7,757	580	...	.....	13,300
Utah	10,726	1,418	8	1 in 177	7,500
Washington	5,012	916	7	1 in 137	5,400
Wyoming	5,303	389	...	.....	13,600
Totals	52,561	7,226	66	1 in 110	7,200
District of Columbia	22,981	2,923	15	1 in 294	7,800
Grand total	8,177,505	703,828	4,350	1 in 162	11,600
SUMMARY ARRANGED BY GEOGRAPHICAL DIVISIONS.					
Eastern	1,661,718	84,306	635	1 in 135	19,700
Middle	2,865,205	209,209	910	1 in 232	18,700
Southern	855,581	95,022	1,038	1 in 92	9,000
Western	2,439,408	282,397	1,173	1 in 241	8,600
Pacific	280,047	22,245	513	1 in 43	12,500
Territories	52,561	7,226	66	1 in 110	7,200
District of Columbia	22,981	2,923	15	1 in 194	7,800
Totals	8,177,505	703,828	4,350	1 in 162	11,600

* Includes Dakota, Indian Territory, and Wyoming.

returns show that the total recorded number of traders in the United States, June 1, 1880—that is, those having a distinctive position in the commercial or industrial community—was 703,328. This means the number of business enterprises including incorporated companies and unincorporated business houses and firms. It does not, therefore, represent the number of individual traders, since many companies and firms are composed of two or more members each. The aggregate capital, including real estate and personal property, invested in business, was $8,177,505,862. A comparison by States of the failures in 1880, with the number of traders and the amount of capital, will be found in the table in the preceding column.

From the table above, it is found that the total capital credited to the State of New York alone was in excess of the aggregate for all New England by nearly $200,000,000, was more than twice as large as the total capital in the Southern States, was two thirds as great as the total for the Western States, and more than six times as large as the total for the Pacific coast. New York's share comprised 22 per cent. of the grand total of all the capital invested in business in this country in 1880. Massachusetts ranked second, with $1,041,000,000, against $1,822,000,000 invested in business in New York; Pennsylvania third, with $867,000,000; Ohio fourth, with $595,000,000; Illinois fifth, with $486,000,000; and Michigan sixth, with $300,000,000. The following is a comparison by geographical divisions of the percentage of aggregate capital invested in 1880, and of the total number of traders and of failures in 1880 and 1883:

STATES.	Per cent. of ag. cap. invested.	Per cent. of total number traders.		Per cent. of total number failures.	
	1880	1880	1883	1880	1883
Eastern	20·5	12	11	14·6	14·6
Middle	34·5	29·7	28·9	20·9	22·6
Southern	10·5	13·7	15·9	23·7	18·8
Western	30·1	40·1	38·5	26·9	31·8
Pacific	3·4	3·1	3·2	11·7	8·7

The ratio of growth in business, as indicated by the increase in the number of traders, is shown by the following:

STATES.	1873.	1880.	1883.
Eastern	70,966	84,306	92,740
Middle	165,938	209,209	242,303
Southern	87,040	95,022	133,933
Western	200,871	282,397	323,044
Pacific	16,396	22,245	27,067
Territories	4,565	7,226	16,737
District of Columbia	2,894	2,923	2,979
Totals	548,180	703,328	888,523

Bradstreet's "Journal" says:

The total number of failures in business in 1880 was undoubtedly the smallest in any year since the similarly prosperous period in 1872. When trade is thus at the flood, many of the elements of disaster are for the time wholly absent. At such a time ventures are at the initial point, and actual disasters are of neces-

sity exceedingly limited. At a later period, when activity has become general and ill-judged ventures have reached the point of fruition or failure, numerous trade disasters come about as a matter of course, and this while the general condition of trade is exceptionally sound. The record of the past three years has verified the analysis. In 1880 failures were relatively few, while in 1883 they were about 2·4 times as many, activity and competition in production and distribution having become severe. The general average of failures for the United States in 1880 was one in every 162 traders. This, if compared with the estimated ratio for 1878, a year of heavy commercial disasters, and again with the past calendar year, is as follows:

	1878.	1880.	1883.
Ratio of failures to traders.....	1 in 56	1 in 162	1 in 82

The final column of the table given above shows the average amount of capital per trader by States, in round numbers, with averages by geographical divisions. It is interesting to note that Massachusetts leads among States with about $27,000 capital per trader, and that Rhode Island is second with $21,000. Connecticut with $19,200 outranks New York by about $2,000 per trader. Maryland ranks ahead of Pennsylvania, the former having $15,900 average capital per trader to $10,700 of the latter. California averages $14,100, and Michigan $11,100. For the United States as a whole the average capital to each trader or business concern is in round numbers $11,600.

FINANCES OF THE UNITED STATES. See UNITED STATES, FINANCES OF.

FINANCIAL REVIEW OF 1883. The record of 1883 is that of a growing commercial depression. The causes may be traced, not so much to excessive expansion during the brief tide of prosperity which reached its highest mark in 1881, as to the failure of crops from drought in that year, the losses of stock from frost and snow the following winter, the paralysis of the iron industry resulting from the cessation of railroad-building, and largely to the simultaneous depression in Europe and its effect on the exports and prices of American products. In the South, and in parts of the Southwest and West, where industrial expansion has proceeded at a rapid rate, the stringency was less felt, and in some trades and localities profits were still sufficient to encourage a continued extension of facilities. This transfer of productive activity to new centers was proportionally operative in producing the pressure under which Eastern trade and manufactures suffered.

Business failures increased in steady progression, from the minimum amount of liabilities, in 1880, of $66,000,000, to $81,000,000 in 1881, $102,000,000 in 1882, and $173,000,000 in 1883. (See FAILURES IN BUSINESS.) But there was nothing approaching the character of a financial crisis. A continuous decline in the values of stocks, in the face of the heaviest returns of railroad traffic and earnings ever made, was the most remarkable feature of the year. The safety of the financial institutions of the country is in a large measure involved in the fluctuations of stock-values; but it was a reassuring symptom that their operations were conservative enough to sustain so vast a shrinkage of values. There was no bank failure of magnitude or wide-spread influence, and none which was not due to the failure of isolated enterprises or speculative corners.

The following tabular survey of the economical conditions and results of 1883, contrasted with those of the preceding year, is taken from the "Commercial and Financial Chronicle":

DATA.	1882.	1883.
Coin and currency in United States November 1st.....	$1,465,509,449	$1,523,366,989
Total clearings in twenty-seven cities.....	60,808,000,000	51,502,000,000
Mercantile failures.....	101,547,064	173,000,000
Imports of gold and silver (eleven months).....	19,182,900	33,767,115
Exports of gold and silver (eleven months).....	54,000,489	28,629,847
Imports of merchandise (eleven months).....	693,810,224	682,995,212
Exports of merchandise (eleven months).....	675,021,019	719,529,625
Railroads constructed (miles).....	11,591	6,600
Gross earnings of sixty-four railroads (eleven months).....	$245,891,143	$269,816,699
Wheat raised (bushels).....	503,000,000	400,000,000
Corn raised (bushels).....	1,624,000,000	1,551,000,000
Cotton raised (bales).....	6,992,234	6,000,000
Pig-iron (tons).....	4,623,323	4,623,000
Anthracite coal (tons).....	29,239,919	31,200,000
Immigration (eleven months).....	686,676	586,490

The prices of the leading staples on or about the 1st of January, 1884, compared with prices at the same date in 1883 and 1882, were as follow:

MERCHANDISE.	1882.	1883.	1884.
Cotton, middling uplands, per pound.....	11¼	10⅛	10¼
Wool, American XX, per pound.....	37 @ 45	35 @ 43	33 @ 41
Iron, American pig, No. 1, per ton	25 00 @ 27 00	25 00 @ 26 00	20 50 @ 21 50
Steel rails.....	59 00 @ 60 00	40 00	33 00 @ 35 00
Wheat, No. 2 red winter, per bushel.....	1 41½ @ 1 43½	1 09½ @ 1 10½	1 10¾ @ 1 12¾
Corn, Western mixture, No. 2, per bushel.....	71 @ 71½	66½ @ 66½	63½ @ 64
Pork, mess, per barrel	17 50 @ 19 50	18 37½ @ 18 50	14 75 @ 15 25

The Banks and the Money Market.—In no year since 1878 was money more uniformly easy throughout the year, or the market less subject to violent fluctuations, than during 1883. There was a temporary stringency in March and April, when call loans, which had been

quoted at 2 per cent. on Government bonds and 5 per cent. on other collaterals during the previous part of the year, were taken in Wall street at rates ranging on some days as high as 20 and 25 per cent. per annum. After nearly three months of fluctuation the price settled down for the summer to from 1 to 3 per cent. When the autumn depletion for the crop movement occurred, which is usually the opportunity of the bears, the supply was too abundant for any manipulation, and money could usually be obtained on collaterals at the same rates, on no occasion rising above 4½ and 5 per cent. The closing quotations of the year were 1 to 3 per cent., the lower rate applying, as usual, to loans on Government bonds. The dealings in commercial paper became more and more restricted and cautious as the year advanced. This shutting off of accommodation precipitated the embarrassments of weak traders, and swelled the total of mercantile failures. A considerable proportion of the insolvent merchants owed their bankruptcy to speculations outside of the sphere of their legitimate business. This "weeding-out" process produced no perturbations, and, instead of betraying weakness in the financial machinery of the country, was an encouraging proof of its sound and conservative workings. The failures resulting from the miscarriage of wheat and lard corners were self-limited. The bonded whisky question and the fate of the gigantic speculations in that product involved the banks more seriously. The decline in stocks was considered by many to have reached a point which endangered the stability of the credit institutions. Yet there were evidences that the bankers amply discounted the decline, and placed themselves in a position of safety more assured at the close of 1883 than at any previous time. By dropping questionable securities and requiring wider margins, they contributed in no slight measure to the decline and weakness of the stock-market.

Prime commercial paper was discounted in New York at 5 to 6 per cent. in January, 5 to 5½ in February, 6 to 7 in March, 5 to 6 in April, 5 to 6 in May, 4 to 5½ in June and July, 4½ to 6½ in August, 5½ to 6½ from September to November, and 5 to 6 at the close of the year.

The condition of the New York Clearing-House banks, and the rates of money and exchange, with the prices of United States bonds, on or about the 1st of January, 1884, as compared with the two years preceding, are given in the following summary:

	1882.	1883.	1884.
New York City Banks:			
Loans and discounts	$315,443,400	$311,071,200	$327,585,700
Specie	57,782,500	57,627,100	60,468,100
Circulation	20,162,400	17,625,500	15,456,800
Net deposits	289,890,400	291,668,600	320,798,000
Legal tenders	15,942,000	18,664,200	26,479,100
Legal reserve	72,472,600	72,915,900	80,198,250
Reserve held	73,724,500	76,291,300	86,947,200
Surplus reserve	$1,251,900	$3,375,400	$6,748,950
Money Exchange, Silver:			
Call loans	3 @ 6 + ½ p. d.	3 @ 12	1 @ 2½
Prime paper, sixty days	6 @ 6½	6 @ 6½	5 @ 5½
Silver in London, per ounce	51 11/16 *d.*	51½ *d.*	51 *d.*
Prime sterling bills, sixty days	4 81	4 81	4 82½
United States Bonds:			
3s, registered, option United States	....	102½	100½
6s, currency, 1898	129	132	134
4½s, 1891, coupon	114½	113	114½
4s of 1907, coupon	117½	119½	123½

Appended is the Clearing-House statement of totals at the beginning of each quarter of 1883 and at the end of the year:

DATE.	Loans and discounts.	Specie.	Circulation.	Net deposits.	Legal tenders.
December 30, 1882	$311,071,200	$57,627,100	$17,625,500	$291,668,600	$18,664,200
March 31, 1883	310,130,100	49,086,800	16,574,800	279,944,200	16,801,800
June 30, 1883	328,083,200	64,189,600	15,612,600	324,289,900	26,122,800
September 29, 1883	329,764,000	55,324,400	15,198,500	314,107,500	24,077,300
December 29, 1883	327,585,700	60,468,100	15,456,800	320,798,000	26,479,100

Foreign Exchange.—The imports in 1883 were considerably less than in the previous year, while the exports were greater. In the later months of the year the export movement of merchandise diminished. The returns for eleven months of the calendar year show an excess of exports amounting to $86,534,413, against an excess of imports in the corresponding period of 1882 amounting to $18,327,238. The bullion movement shows a net importation of $5,137,268 for the same months of 1883, against an excess of exports during eleven months of 1882 amounting to $34,817,589. The foreign commerce of the country does not alone govern the exchange market. It is materially affected by the movement of Ameri-

can stocks and bonds to and fro between New York and European financial centers. This movement has attained large dimensions of late years; but there is no record of such shipments, or means of estimating their amounts. Bankers' bills on London sold at stiff rates in May, June, and July. It was therefore believed that large amounts of securities were sent home from abroad. After July, rates weakened. An import movement in gold, of moderate dimensions, continued for a brief period and then fell off. The rate of sterling exchange for sixty-day drafts was $4.81 at the beginning of January, rising to $4.83 in the middle of the month, and $4.83½ in the beginning of February. Lower and variable rates obtained in the next two months, falling to $4·81 in the latter part of March, after which the rate quickly rose to $4.84 in April, and, after falling ½ cent, advanced to $4.85½ in the middle of May and $4.86½ in the first part of June; $4.85½ ruled for the next month, and after the middle of July $4.84; $4.83 in the latter part of August; $4.82½ in the beginning, and a cent higher at the close of September; $4.82½ and down to $4.81½ in October; and from $4.82 to $4.83 through November and December.

Manufacturing Industries.—Industrial enterprise flagged, and manufactures, confronted with a failing demand, experienced the most unprofitable and discouraging year since the crisis of 1873 and the following period of despondency. Distributing merchants, under the influence of descending prices, took no more goods than were necessary to supply immediate demands. Manufacturers were therefore obliged to carry heavy and constantly accumulating stocks, or reduce production. The more expanded and venturesome concerns broke down under the strain, and made up the bulk of the mercantile failures. A downward movement in prices began in 1881. In 1883 competition became so sharp that profits nearly vanished in many branches of trade. Yet so great was the faith in the inherent strength of the situation, and the expectation of a speedy recovery so general, that manufacturers continued to produce to their full capacity. While goods were being turned out in undiminished and often on an increased scale, and pressed upon the falling market, or stocks accumulated for the expected upward turn, there were evidences everywhere of dwindling consumption. The failure of the harvests in 1881, the lessened demand for American staples in Europe, in consequence of better crops there and of a depression which was in a large measure the reaction of American agricultural competition, the prostration of the iron trade, the crises in the speculative markets and their train of mercantile disasters, were some of the depressing influences which caused a diminution in the consumptive capacity of the country. A far-reaching and persistent cause was contributed by the manufacturers and traders themselves, who, in order to keep up their productive activity and carry their accumulated stocks, cut down their wages accounts and practiced the sharpest economies. The reports of railroad receipts and traffic furnish conclusive evidence that the volume of business was as great as in the most prosperous years.

The decline of railroad construction was one of the chief elements of disturbance. The undue expansion of the iron industry to supply this temporary demand was followed by a reaction in this trade which led off, and to a considerable extent helped produce, the general industrial depression. The reduction of railroad construction from 11,591 miles in 1882 to 6,600 miles in 1883 decreased the distribution of money for this purpose among manufacturers, transportation companies, contractors, storekeepers, laborers, etc., from $347,-730,000 to $198,000,000. If construction falls off to 3,000 miles in 1884 it makes a further difference of $108,000,000 in the disbursements. Steel rails were worth $71 a ton in January, 1880; in December, 1883, large contracts were taken at $33 and $35 a ton. American pig-iron fell from $35 to $20 a ton. On the 1st of January, 1883, there were 417 furnaces in blast, and 270 out of blast, in the United States. By the 1st of July 83 more were blown out; but between that date and November 1st the number in operation was reduced by only three. The stock on hand on January 1st was 383,655 gross tons, increasing to 528,590 tons on July 1st, after which it was reduced until only 232,-354 tons remained unsold on November 1st. The reduction in production was so great that consumption required more than the new supply, and prices showed an upward tendency in the latter part of the year.

New mining districts, opened up in various parts of the country with the extension of railroads, begin to affect the supremacy of the old center of iron production. The furnaces of Western Pennsylvania work mostly Lake Superior and imported ores. In the Clearfield district in Pennsylvania iron, coal, and limestone are found together. Another new field is in Southwestern Virginia, where the rich mineral deposits have attracted a large amount of capital, American and English. The pig-iron industry of the Southern States has developed even more remarkably than other branches of trade. The production increased in one year 25 per cent. The cost of negro labor is lower than that of labor at the North, while the quality of the product can bear comparison with the best grades of English Cleveland iron.

The anthracite-coal trade showed a development in 1883 which made it an exception to other industries. The mining and transportation companies, led by Philadelphia and Reading, pushed their productions to the utmost, sending to market about 31,200,000 tons in 1883, against 29,239,919 tons in 1882. A much larger tonnage than usual was shipped westward, necessarily competing with the soft coal

which was selling at low prices in the Western markets. Other mineral industries suffered under a general stagnation.

The cotton and woolen trades were later in discovering overproduction, and slower in curtailing it. But before the end of 1883 the necessary process was under way. Prices fell to a point where exportation can relieve the country of the oversupply. The manufacturers reduced their accumulations by auction-sales, and offered blocks of unprecedented magnitude, which sold below current rates, but not with the demoralizing effect that many feared.

The Crops.—The agricultural products of 1883 were but slightly above the average. The yield of corn, wheat, and cotton was about the medium, and fell far below the crops of 1882. The corn-crop was 373,000,000 bushels less, but the deterioration caused by rain and frost makes the deficiency much greater. The receipts of grain and cotton during the last five months of 1883 were very heavy, leaving a smaller proportion than usual in the hands of the farmers, indicating that the movement will be light and the deficiency of the crops strongly felt in the remaining months of the crop year. Of the minor cereal crops and of potatoes the yield was abundant.

The Stock Market.—The year 1883 was characterized by a more general, persistent, and severe decline in the prices of stocks than in any year since the depression of 1873–'78. A mass of stocks and income bonds had been floated on the market which could not possibly pay dividends in four or five years. Recent consolidations and extensions had given railroad managers an opportunity to supply the public with these watered stocks during a period of prosperity and speculation at double the prices to which they fell in 1883. The total amount of new shares and securities placed upon the market in two years was probably not less than $2,000,000,000. The holders of this speculative material were anxious to sell whenever prices recovered, and by such an attitude checked any tendency to a rise. Mercantile profits had fallen away, and there were comparatively few who still disposed of the means to carry on Wall street speculations. Heavy losses in speculations during the last four months of 1882 emptied the street of petty operators. The market opened in January with a weak and vacillating tone. In the absence of transient buyers for speculative purposes, the great operators were unable to strengthen prices or took no pains to do so. There were signs of renewed activity in March, but the movement was checked by a tight money-market. When the stringency relaxed there was a brief activity, followed by complete lassitude. Large operators were supposed to have utilized the opportunity to unload a part of their holdings. A tendency to an upward movement manifested itself in June, but a reaction set in immediately. Toward the end of July, when "bear" speculators attempted to force prices to a lower level, they were effectually resisted by large operators who wished to sustain the stocks in which they were particularly interested. The slight effect of the telegraph employés' strike on the price of Western Union stock revealed the extent of the control of the chief holders over this stock. The prolonged dullness of the market was reflected in a decline in the value of seats in the Stock Exchange, which were sold in July as low as $23,000. The exceedingly favorable semi-annual reports of railroad earnings failed to invigorate the market. In August there was a sudden decline in Denver and Rio Grande, and a heavy block of this stock was believed to have been purchased in the interest of the Union Pacific, to prevent the road from falling under the control of any rival corporation. The "bears" attacked also the Northern Pacific and Oregon Transcontinental. The following month, while the ostentatious opening of the Northern Pacific was taking place, the attack was vigorously renewed. The speculators for a fall selected these stocks on account of the difficulties in which Mr. Villard had involved them in order to complete the Northern Pacific railroad. The object was, by causing a break in them, to effect a sympathetic decline in the rest of the list. The announcement in October of the issue of $20,000,000 of new bonds on the Northern Pacific property removed the last prop, and with the heavy decline in these stocks nearly the whole list went down. The margins on stocks were to a large extent wiped out when the decline took place. The bears conducted their operations on a vast scale. Such activity had not been witnessed in many months. The result was that the market was largely oversold and the bear influence paralyzed for the remainder of the year. The opposite party seized the opportunity to give them a "twist" in some of the oversold stocks. Prices rose in consequence to an abnormal level, Northern Pacific advancing from 56 to 78½ and Oregon Transcontinental from 34½ to 51. Mr. Vanderbilt entered the market as a buyer and called in his loans, with the effect of advancing Michigan Central from 77 to 96½. The high prices were not long maintained. A bull movement started in the beginning of November soon gave out. At the close of the year dissensions among the railroads caused a renewed depression. The Northern Pacific stocks and Union Pacific fell off among other stocks, and in some cases the lowest level was reached.

The total sales of stocks at the New York Stock Exchange during the year 1883 were 96,037,905 shares, against a total of 113,720,665 shares in 1882, 118,392,685 in 1881, 97,200,000 in 1880, and 74,166,652 in 1879. The most active stock during 1883 was Delaware, Lackawanna, and Western, of which nearly 16,000,000 shares were dealt in, exceeding in amount thirty times the capital stock.

The following is a list of quotations of the leading stocks on or about Jan. 1, 1882, 1883, and 1884:

RAILROAD STOCKS.	1882	1883	1884
New York Central and Hudson River..	130½	126	112
Erie (New York, Lake Erie, and Western)	40¾	38¾	26⅝
Lake Shore and Michigan Southern....	112¾	112⅝	94⅝
Michigan Central	85¾	98	85
Chicago, Rock Island, and Pacific.....	131½	125½	116½
Illinois Central	129¾	142¾	132¾
Chicago and Northwestern, common...	125¾	134½	116¾
Chicago, Milwaukee, and St. Paul, common	106	105½	92
Delaware, Lackawanna, and Western..	127	128½	116½
Central of New Jersey	90½	69½	84½

The following is a list of some of the speculative stocks, with the prices which they brought at some time during 1882, and those to which they fell in December, 1883:

RAILROAD STOCKS.	1882, highest.	Dec., 1883, lowest.
Canada Southern	78	50*
Central of New Jersey	97	83½
Chesapeake and Ohio	27	14
Chesapeake and Ohio, 2d preferred...	29	16
Denver and Rio Grande	74	22½
Hannibal and St. Joseph	110	85½
Indiana, Bloomington, and Western..	49	17½
Lake Erie and Western	45	18½
Louisville and Nashville	100	43¾
Louisville, New Albany, and Chicago.	78	30
Memphis and Charleston	82	32
Missouri, Kansas, and Texas	42	20¾
Nashville, Chattanooga, and St. Louis.	87	54
New York, Lake Erie, and Western..	48	26½
Northern Pacific	54	28¾
Northern Pacific, preferred	100	42¾
Oregon Transcontinental	98	29½
Oregon Railway and Navigation Company	168	90
Ohio Central	25	2⅝
Ohio and Mississippi	42	21
Richmond and Danville	250	54
Richmond and West Point Terminal..	268	28
Texas and Pacific	55	17½
Wabash	39	17
Wabash, preferred	71	29½

* Ex-dividend.

Railroads.—Railroad traffic and earnings in 1883 exceeded those of any previous year. Tonnage was heavy, from the large crops of 1882, an active movement of merchandise of all kinds, an exceptionally large coal-traffic, and the early movement of the crops of 1883. Immigration and the settlement of new lands contributed considerably to the traffic. Passenger business was also heavy. The many new lines recently opened made the competition severe, and toward the end of 1883 signs of new ruptures in the pools and combinations disclosed the extent to which roads had been constructed beyond immediate requirements, and consequently depressed the values of stocks. The stocks of railroads which were subjected most to new competition suffered most in the general decline. The New York Central was threatened by the new West Shore road. The Union Pacific was affected by the opening of the Denver and Rio Grande to Salt Lake City, the Central Pacific by the completion of the Southern Pacific, and by the approaching completion of the Northern Pacific. The rivalry between the Pennsylvania and the Philadelphia and Reading led to sales of stock; and lines like the Erie and St. Paul, which were subjected to the brunt of competition or undermined by tariff wars, were the easy prey of the bears.

The completion of the "Nickel-Plate" railroad and the opening of the Chicago and Atlantic route by the Erie, made six through routes to contend for the Chicago traffic instead of four. The Pool Commissioner adjusted the proportions of the roads accordingly, but rumors and accusations of rate-cutting and evasions were rife during the latter half of the year. The Delaware, Lackawanna, and Western was subjected to the severest penalty in the power of the commissioner, viz.: the refusal of connecting lines to forward its freight except at local rates, and some of the trunk-line managers appealed from the award of percentages on east-bound business.

In November a conflict broke out in the principal Western pooling association. The Chicago, Milwaukee, and St. Paul announced its intention of withdrawing from the Iowa pool. The Northwestern, the Rock Island, and the Burlington and Quincy roads showed dissatisfaction with the arrangements. An agreement was formed between the St. Paul, Rock Island, and Union Pacific, excluding the Northwestern and Chicago, Burlington, and Quincy.

The gross earnings of the four great trunk lines leading into New York in the four years ending with 1883, a period marked by one deficient harvest, increased competition of the water-route from the abolition of tolls on the Erie canal, a protracted and bitter war of rates, and a progressive depression of industry, nevertheless show an increase from $91,750,000 dollars to $127,375,000, or 40 per cent. Net earnings during the same period increased from $37,000,000 to $48,000,000 dollars, but since the first augmentation of traffic in 1879–'80, when wages and materials were still low, the increase in operating expenses has kept pace with the growth of the business. The following statement gives the reported receipts and profits of these arterial lines:

TRUNK LINES.	1878–'79.	1879–'80.	1880–'81.	1881–'82.	1882–'83.
Pennsylvania:					
Gross earnings	$33,333,026	$40,358,679	$43,884,696	$47,123,715	$51,084,955
Net earnings	13,574,848	16,970,737	17,604,528	17,628,068	18,904,473
New York Central:					
Gross earnings	28,396,583	33,175,918	32,348,896	30,628,781	33,770,722
Net earnings	12,273,511	15,326,019	12,883,610	11,232,807	13,020,128
New York and Erie:					
Gross earnings	15,942,023	18,698,108	20,715,605	19,975,774	22,802,947
Net earnings	4,767,324	7,049,183	7,459,375	6,887,681	7,357,664
Baltimore and Ohio:					
Gross earnings	14,193,980	18,317,740	18,463,877	18,388,875	19,789,888
Net earnings	6,502,885	7,986,970	7,073,398	7,454,662	8,705,823

The returns of fifty-six other railroads show an increase in gross earnings of from $263,750,000 in 1882 to nearly $291,000,000 in 1883. The railroads of the Northwest make the most favorable exhibit, as this is the part of the country which has been most rapidly developed by immigration and settlement. The agricultural and industrial development of the Southwest, and the progress in many of the older settled portions of the South, are reflected in the railroad reports. The elaborate net-work in the States of Ohio, Indiana, and Illinois proved to surpass their needs when in 1883 there was another short crop.

The railroad properties stood the strain of the present depression, instead of defaulting and going into liquidation as in 1873–'78, for the reason that the powerful combinations of capital which have consolidated vast railroad systems, covering whole sections of the country, have taken into their systems the smaller and less remunerative lines, and since 1879 have conducted the greater part of the railroad extension. This is the reason why over 25,000 miles of new railroad could be built between Jan. 1, 1881, and Jan. 1, 1884, in a time exceedingly unfavorable for floating new enterprises, while there was a constant decline in the market values of securities, without producing the disturbance and collapse which followed the crisis of 1873. In the preceding period local capital, individuals who traded on their ideas rather than on their capital, and speculative investors who were quick to take alarm, stood behind the new mileage, constructed in fragmentary lines which were able to co-operate only in a cumbersome way, and were easily betrayed into antagonism. The solidarity, organization, and economy of the present system are in every way advantageous. In regard to the construction of new roads the money borrowed for the purpose is obtained on the credit of the old paying concerns with a saving, taking the rates at which the bonds are issued into consideration, of probably 2 per cent. in the interest, while the bonus given with the bonds, in the shape of stock or income bonds, does not require compulsory payments which add to the fixed charges. The mileage is laid out more intelligently, with less sinking of capital in duplicate or unnecessary lines, while nearly all of the new roads serve as feeders to the stem lines under whose auspices they are constructed, and often produce profits when their own business is conducted at a loss.

The manner in which auxiliary lines are acquired and controlled affords railroad managers an opportunity to carry out designs for their private emolument, and involves in uncertainty the values of all the properties. The subsidiary lines are not as a usual thing incorporated in the parent or purchasing company, but are controlled by acquiring a majority of their stock. The enormous blocks of the stocks and bonds of minor corporations held by many of the leading companies are in a number of instances unrepresented in the capital or debts of the latter, but are carried on the books as a surplus, which may be increased or diminished at the option of the managers. In all cases the stockholders are ignorant of intended new operations of this kind. The remaining owners of the securities of branch lines are at the mercy of the managers of the controlling company, who by withholding traffic can depreciate stocks which they wish to acquire privately. The affairs of companies are sometimes further complicated by the creation of intermediary corporations, such as the Pennsylvania Company, which operates the branch lines of the Pennsylvania railroad west of Pittsburg, the Oregon Transcontinental, formed to work the combined Oregon Navigation and Northern Pacific properties, and the similar concern which manages the connecting lines of the Richmond and Danville. The securities held by sixteen large corporations aggregated $383,000,000 in January, and if the holdings of four others, of which the public could obtain no satisfactory knowledge, were added, the amount would be at least $450,000,000. The income from these investments is often an important item in the accounts of a company, supremely so in the case of the Pennsylvania, which received in this way $3,500,000 in 1882, equal to 4 per cent. on all its outstanding stock, and in that of the Union Pacific, which received nearly $2,250,000. One use to which these assets are sometimes put is to pledge them for new loans, called collateral trust mortgages, as has been done by the Oregon Transcontinental, the Union Pacific, the Wabash, and other companies.

Among the chief roads which defaulted in their interest in 1883, was the Toledo, Cincinnati, and St. Louis. This was a narrow-gauge railroad built up by consolidation and extension since 1880, until it comprised 800 miles. It runs through a country well supplied with railroads. It attracted a large amount of Boston capital, but confidence failed before the floating liabilities incurred in its construction were cleared away, and it went into the hands of receivers in July, involving the house of Ballou & Co. in its failure. The Connotton Valley and the Danville, Olney, and Ohio, other defaulting roads, were built through the same region of railroads and lacked terminal advantages. The Richmond and Allegheny extended through a district not sufficiently developed. The Louisville, Evansville, and St. Louis connects with the Louisville and Nashville, forming a fairly direct route between Louisville and St. Louis, yet was unable to pay its interest and asked for an extension. The Denver and New Orleans succumbed to the competition of parallel roads and the declension of the mining industry, causes which were operative also in the failure of the Denver, Utah, and Pacific. The Little Rock and Fort Smith was wound up in consequence of

a decision of the courts making the State bonds, issued in aid of its construction, a first lien. The Massachusetts Central, which has no termini or connections, could not pay working expenses. The New York City and Northern failed to obtain the expected share in the Boston through traffic, and did not get enough business to meet the interest of the debt incurred to complete the road. The bonds of these delinquent companies aggregate $45,095,500.

Notable among the changes and operations of the year were the lease of the Central railroad of New Jersey, which had passed through liquidation, to the Philadelphia and Reading Company. The operations of great capitalists have in recent years been directed largely to the railroad system of the South. In the summer it was announced that the Richmond and Danville, with its connecting line, had been acquired by a syndicate, supposed to be working with the East Tennessee Company. The two combinations control the main portion of the Southern railway system.

The completion of the Northern Pacific railroad was the most important accession to the railroad system of the United States made in 1883, and the failure of Henry Villard, who had financiered this great work, was the chief financial collapse. By means of a "blind pool" he succeeded in acquiring control of the partly constructed Northern Pacific road, with the intention of completing the line to the Pacific before the expiration of the term for completion prescribed in the Government concession. The Oregon Railrway and Navigation, managed by him, the prosperity of which was endangered if the Northern Pacific fell into other hands, partly pledged its credit for the object. The Oregon Transcontinental Company was established to manage the two concerns for their mutual interest, and to construct feeders to the line. By means of the Oregon Railway and Navigation and the Northern Pacific securities, which were acquired through the workings of the "blind pool," and constituted the assets of the Oregon Transcontinental Company, large sums were borrowed. These were loaned in turn to the Northern Pacific Railroad, which was thereby enabled to go on with the work of construction without appearing as a borrower in the open market. The railroad was completed, but only by incurring a mass of floating debt, and still lacked much of being in a proper working condition. The management were obliged to seek an additional loan of $20,000,000 to fund these liabilities and complete the enterprise. The bears attacked the stocks on account of their vulnerable character; and Mr. Villard was obliged to retire from the control of the property.

Atlantic Cables. — The American Company, which laid a cable in connection with the Western Union Telegraph Company, to receive its European business, joined in the combination of the cable companies, which divide their receipts, according to the present pooling arrangement, in the following proportions: Anglo-American, 48·825 per cent.; American Company, 22·500 per cent.; Direct United States, 16·275 per cent.; French Company, 12·400 per cent. A competing company was organized in 1883, by Messrs. Mackay and J. G. Bennett, who contracted with Messrs. Siemens to have an Atlantic cable put down from Ireland to Nova Scotia, and thence to the United States, by June, 1884, and another cable of the same length, with connecting wires between Ireland and France, a few months later. By carrying their line directly to Nova Scotia the Mackay-Bennett company avoid the occasional accidents from fishing-smacks, which happen to some of the Anglo-American Company's cables in the shallow waters between Newfoundland and Nova Scotia. The monopoly possessed by the original cable company was expected to be broken by the Direct Cable Company, and by the second French Company which recently laid a cable. These cables, which are said to be the only well-laid and durable ones, were brought under the control of the original Atlantic Company. The financial operations connected with the launching of the various companies, and with the acquisition of a control over them by the Atlantic Company, have resulted in extraordinary over-capitalization.

Financial Events of the Year.—The factors entering into the critical financial situation in 1883 began to manifest themselves two years before. In consequence of the deficient harvest of 1881, from which the troubles date, there was a crisis in the grain and cotton markets in the beginning of 1882. There was a bank failure in Boston in March of that year, and a critical stringency in the money market, which was removed by the succor brought by the Secretary of the Treasury through the redemption of large amounts of bonds. The great strike in the iron trade, lasting from June till September, and the railroad war in the Northwest, toward the close of 1882, were significant episodes of the situation. In December occurred a breakdown in the petroleum market, and heavy failures in the trade.

In February, 1883, occurred heavy failures in the iron trade. In March the employers were victorious in a strike of iron-workers, and reduced wages. In June, again, there were suspensions in the iron industry.

An attempt to "corner" the lard market by Chicago speculators ended disastrously for the manipulators in June. Speculations for a rise in grain and provisions were more active than usual in the early part of the season, owing to the unfavorable weather of the preceding winter and the poor outlook for the winter wheat crop, the not encouraging opening of the spring, and the still gloomier prospects in Europe, where autumn rains prevented as much wheat being sown as usual and injured what was sown, while the spring opened cold and dry. As summer advanced and the crop prospects greatly improved, the vast transactions for future

deliveries looked less favorable for the bulls, some of whom sold out. McGeoch, Evering-ham & Co., the largest provision-dealers in Chicago, bought up immense quantities of lard, at increasing prices, which stimulated the supply, until they were unable to carry the operation further. They refused to accept a large lot on the pretext that it was adulterated; but it soon transpired that their credit was exhausted, and the artificially sustained market suddenly turned. The losses were several millions, and their suspension followed. In June and the following month occurred the serious disturbance to all mercantile and financial affairs, produced by the strike of telegraph operators. In the beginning of August occurred the failure of Shaw & Co., the largest leather manufacturers in the country, who operated numerous tanneries in New England, and were for some time able to control the entire trade. The week after two banks failed in St. Albans, Vermont, being involved with a railroad constructor who was unable to complete and carry his enterprise, that of an outlet for the Canadian railroads through Vermont. Bank failures occurred later in Chicago, where two institutions with $4,250,000 deposits suspended.

In the beginning of November occurred the failure of Morris Ranger in Liverpool, the largest dealer in the English cotton trade, who had sold futures all through the summer in the expectation of another large cotton-crop. When the drought disappointed this calculation it was still believed that the state of the industry in England, and the extent to which the Continent was already supplied, would lead to lower rates. The shipments to the Continent were, however, heavier than the year before. The price advanced from $5\frac{7}{16}d.$ for middling uplands to $6\frac{1}{4}d.$, but Ranger continued to sell until forced to suspend, with a loss of $5,000,000.

The speculations which interrupt the normal current of grain exportation, and disorder the transportation and mercantile business connected with it, aggravated the situation toward the close of the calendar year, when every dollar that could be obtained from the sale of the crop surplus at this time, while concurrent supplies were streaming into European markets from other sources, was needed to revive the flagging economic activities. From the commencement of the crop year to the 1st of December, five months, the exports of wheat and flour amounted to less than 51,000,000 bushels, against 83,250,000 bushels the season before, and 62,500,000 bushels in the short-crop season of 1881. At the same date the quantity in sight was 35,000,000 bushels, against 20,000,000 bushels in 1882, and less than 19,000,000 in 1881.

FISH COMMISSION. See UNITED STATES FISH COMMISSION.

FLOODS IN THE OHIO VALLEY. The valley of the Ohio river was visited in February, 1883, by higher and more destructive floods than had been known since the country was settled. The ground had been frozen and covered with snow. The heavy rains of the 2d and 3d of the month had caused high freshets in Western Pennsylvania and Northern Ohio, Indiana, and Illinois, by which much property had been destroyed and considerable damage done, particularly along the Allegheny river from Oil City to Pittsburg, near Akron, and at Cleveland, where loss by fire was one of the indirect consequences of the flood. With continued rains, the Ohio river rose during the next two weeks to an extraordinary height, from Cincinnati to its mouth. The culmination of the flood at Cincinnati occurred on the 15th, when the water reached the height of sixty-six feet four inches, covering all the houses fronting on the shore, and extending up into the densely built part of the city for a distance of more than three squares. The approaches to the bridges across the river were inundated. The trains on most of the railroads entering the city were prevented from reaching the principal stations. Two days before the waters attained their extreme height, the damage inflicted had been estimated at $1,500,000, and 220 wholesale grocery and commission houses in the lower-lying districts had been covered by the flood. Thirty thousand persons were for some time deprived of employment. The furnaces at the gas-houses were extinguished, and the city was consequently deprived of all light from that source, while the engines of the water-works were so far disabled that an exhaustion of the supply of water for domestic purposes became imminent. The United States military barracks at Newport, Ky., were flooded; nearly two square miles of that city were overflowed; and the sister city of Covington, Ky., suffered in a corresponding degree. The freight depot of the Cincinnati Southern railroad in Cincinnati was undermined and fell into between thirty and fifty feet of water, carrying with it a number of persons of the crowd that had collected in it, a few of whom were drowned. At Lawrenceburg, Ind., every house in the "Old town" was filled with water for two stories; many buildings were wholly destroyed; 800 families were deprived of their means of support, and 5,000 persons were fed by relief committees. At Louisville, Ky., the "cut-off" dam—a structure 2,000 feet long, 200 feet thick at the base, and 40 feet thick at the top, which had been built expressly for protection against high water—was broken during the night of the 12th. More than 250 houses were immediately covered with water, and many of them were washed from their foundations. Those of the inmates of these houses who had not already removed in anticipation of the danger, were rescued, with but little loss of life. Four fifths of the city of Jeffersonville, Ind., opposite to Louisville, was laid under from three to twenty feet of water; about 6,000 people suffered in person and property, and more than half the business men of the town were financially ruined or seriously embarrassed. At New Albany, Ind., the water

reached a height of seventy-three feet, or four feet greater than that of the flood of 1832. Very many dwellings and business houses were wrecked by the flood and the strong wind; several extensive manufacturing establishments were stopped and suffered damage to their permanent property, and about 5,000 persons were turned out from their homes and reduced to dependence on outside relief. The entire amount of the direct loss by the flood suffered by the towns in Indiana, from New Albany to the State line of Ohio, was estimated as follows:

New Albany	$730,000
Jeffersonville	925,000
Madison	200,000
Aurora	150,000
Lawrenceburg	435,000
Losses in the intervening country	300,000
Total	$2,740,000

About 24,000 people were made temporarily homeless and dependent. The damage was less serious below New Albany. The worst was suffered at Shawneetown, Ill., where, out of 600 houses, all but twenty-eight were flooded in their second stories, and the water ran in a swift current fifteen feet deep through the main street. At Alton and Tell City, Ind., and Uniontown and Enterprise, Ky., the water entered every house.

The legislatures of Ohio and Indiana each appropriated $100,000 for the relief of the sufferers. Papers for voluntary subscriptions were opened at several points. A steamboat was chartered by the relief committee of Indianapolis, and distributed supplies which had been furnished by voluntary contribution, wherever they were needed. The wants of the sufferers in Cincinnati were attended to by their more fortunate fellow-citizens, and the supplies destined for that city were sent to other places.

All the tributaries of the lower Ohio were affected by the floods, but without causing as serious damage as was suffered immediately on that river.

The highest flood ever known before on the Ohio river since the settlement of the country, was on the 18th of February, 1832, when the water reached the height of 64 feet 3 inches. Other great floods were recorded December 17, 1847, 63 feet 7 inches; in 1882, 58 feet 7 inches, and in 1862, 57 feet 4 inches. The Indians are said to have told the first settlers of the city of a flood that occurred, as nearly as can be surmised, about 1774, which reached the height of 100 feet.

FLORIDA. State Government.—The following were the State officers during the year: Governor, William D. Bloxham, Democrat; Lieutenant-Governor, L. W. Bethel; Secretary of State, John L. Crawford; Treasurer, Henry A. L'Engle; Comptroller, W. D. Barnes; Attorney-General, George P. Raney; Superintendent of Public Instruction, E. K. Foster; Commissioner of Lands and Immigration, P. W. White; Judiciary, Supreme Court: Chief-Justice, Edwin M. Randall; Associates, James D. Westcott, Jr., and R. B. Van Valkenburgh.

Legislative Session.—The Legislature convened on the 2d of January, and adjourned on the 2d of March. Among the acts passed were the following:

An act to protect the food-fishes of Florida.

An act in relation to injunctions.

An act for the relief of Jacksonville, and the counties of Baker, Bradford, Columbia, Suwannee, Madison, Jefferson, Duval, and Leon.

An act to provide for the relinquishment of the dower of insane married women.

An act to repeal an act to dissolve municipal corporations under circumstances therein stated, and to provide governments for the same.

An act to prescribe the duties of treasurers of municipal governments as to warrants or orders which may be presented to them and not paid upon presentation.

An act to prescribe the duties of county treasurers as to warrants or orders which may be presented to them and not paid upon presentation.

An act to prohibit officers of municipal corporations from buying at a discount or speculating in city or town scrip, and to provide a penalty therefor.

An act to punish the breaking, and entering without breaking, of a building in the day-time, or entering in the night-time without breaking, with intent to commit a misdemeanor.

An act authorizing the Board of Education to compromise and settle with counties indebted to the school and seminary funds.

An act to prohibit county officers from buying at a discount, or speculating in State, county, or school scrip, and to provide a penalty therefor.

An act to punish slander and defamation of character in certain cases.

An act making appropriations for the expense of collecting revenue for the year 1883.

An act to prescribe the manner in which lands assessed prior to Jan. 1, 1883, shall be advertised for sale for uncollected taxes.

An act fixing the liability of persons and corporations for damages resulting from the death of any one caused by the wrongful act, negligence, carelessness, or default of such persons or corporations, or the agents thereof.

An act to prohibit the sale or distribution of intoxicating liquors on election-days, and to provide a punishment for the same.

An act relating to the crime of larceny.

An act to provide for the maintenance of organized fire companies in cities in this State.

An act to prohibit school officers from dealing in school text-books.

An act to amend an act entitled "An act to provide a uniform system of quarantine in this State," approved March 11, 1879, being Chapter 3162, Laws of Florida.

An act requiring uniformity of text-books in the public schools of this State.

An act to prohibit persons shipping oranges grown outside of the State as Florida oranges.

An act to provide for investments by the Board of Education of the State of Florida, of moneys of the common-school fund.

An act to provide for teachers' institutes.

An act to provide for normal instruction.

An act levying a tax for the years 1883 and 1884.

An act for the assessment and collection of revenue.

An act to fix the pay of the members, officers, and attaches of the Legislature of 1883.

An act to provide an institution for the blind, deaf and dumb in this State.

An act to protect the growing sponge in this State.

An act in relation to small estates, and to save them from wasteful costs and expenditures.

An act to enable actual settlers to procure homes.

An act to keep in good repair the public roads and highways of this State, and to amend an act entitled

"An act to keep in good repair the public roads and highways in this State," approved March 7, 1881.

An act to declare what notice shall be given to non-resident parties and parties whose residence is unknown upon application to sell real estate in which they are interested.

An act making appropriations for the years 1883 and 1884.

An act in relation to the apportionment of the one-mill State tax for school purposes.

An act to regulate the sale of liquors, wines, and beer in the State of Florida by the Boards of County Commissioners of the several counties.

An act granting aid for the construction of the Thomasville, Tallahassee, and Gulf Railroad.

An act to incorporate an institution of learning at Starke, Bradford county, Florida, under the name of Orange College.

An act to incorporate the International Railroad and Steamship Company of Florida.

An act to incorporate the Fort Meade, Keystone, and Walk-in-the-Water Railroad Company.

An act to incorporate the Alachua Steam Navigation and Canal Company.

An act to incorporate the Florida Ship-Canal Company, to locate, construct, own, and operate a ship-canal and telegraph line across the Peninsula of Florida, to connect the Atlantic ocean with the Gulf of Mexico.

An act to incorporate the Ocklawaha Steamboat, Canal, Drainage, and River Improvement Company.

An act to incorporate the Florida Land and Colonization Company.

An act to incorporate the South Florida Railroad Company.

An act to grant certain lands to the Jacksonville, St. Augustine, and Halifax River Railway Company.

An act to incorporate the Fernandina and Amelia Beach Railroad Company.

An act to incorporate the Atlantic and Mexican Gulf Canal Company, and to grant certain privileges therein named.

An act to incorporate the Bank of the State of Florida.

An act to incorporate the Florida and European Steamship Company.

An act to incorporate the Soville and Halifax River Railroad Company.

An act to grant certain lands to the Green Cove Spring and Melrose Railroad Company.

Joint resolution in reference to a Constitutional Convention.

Joint resolution empowering the electors at the next general election to vote for or against a convention.

In the bill providing for normal instruction four institutions are named in which normal departments shall be established—the East and the West Florida Seminaries, and the Union and Lincoln Academies. The East Florida Seminary and Union Academy are located at Gainesville; the West Florida Seminary and Lincoln Academy at Tallahassee.

Under the provisions of the revenue law, mortgages are not to be taxed; non-bearing orange-groves are not to be taxed at a fictitious value, but merely as improved lands; the license-tax on physicians and lawyers has been omitted, and the bill provides for an ad valorem tax of five mills instead of seven, and leaves it discretionary with the Governor to reduce it to four mills for 1884.

The counties for whose relief provision was made are those that became involved in building the railroads through Middle and East Florida. The bill gives the remnant of the internal improvement lands proper to them, being upward of 175,000 acres. A bill to create a railroad commission failed to pass.

Agricultural College and University.—The trustees of the Agricultural College determined to remove the institution from Eau Gallie, where its site had previously been fixed, though no organization was ever effected. The fund amounts to about $140,000, invested in State bonds, and yields an annual interest of nearly $9,000. The act of Congress prescribes that no part of the fund shall be used for the erection of buildings. These, together with 100 acres of land for experimental gardens, were to be provided by the locality desiring the institution. Bids were submitted by Gainesville, Live Oak, Lake City, Starke, Tallahassee, Ocala, and Madison, varying in amounts from $10,000 to $50,000. Lake City was chosen.

The Florida University was incorporated under a liberal charter in February. It is authorized to have five colleges, to wit: Tallahassee College of Medicine and Surgery, College of Literature and Science, Law College, Theological Institute, and Polytechnic and Normal Institute. At present only two departments are organized — the West Florida Seminary and Military Institute, constituting the Literary Department, and the Tallahassee College of Medicine and Surgery, the Medical.

Railroad Taxation.—Among the decisions of the Supreme Court of the United States was one in the case of the Louisville and Nashville Railroad Company, plaintiff in error, against Manuel Palmes, collector, etc., in error, to the Supreme Court of the State of Florida:

The question presented by this case is whether a line of railroad which was commenced, partly completed, and operated by the Alabama and Florida Railroad Company, and which through successive transfers has finally come into the hands of the Louisville and Nashville Railroad Company, is or is not exempt from taxation by virtue of an act passed by the Legislature of Florida in 1855, and known as the Internal Improvement Act. This court holds that the exemption from taxation created by the 18th section of the Internal Improvement Act of 1855 is in every respect similar to that which was declared by this court in the case of Morgan against Louisiana, 93 United States, 217, to be non-assignable. Such exemption, therefore, did not pass from the Alabama and Florida Railroad Company to the Pensacola and Louisville Railroad Company when the former conveyed to the latter its roads and franchises connected with and necessary in its construction and operation. Even, however, if such exemption had passed to the Pensacola and Louisville Railroad Company, that corporation would have had no power to further convey it, so that the line of the railroad in its present hands is properly liable to State taxation, and its present owners can not claim immunity on the ground that the act of 1875, taxing the property of all corporations, was an impairment of the obligation of the contract of 1855. The decree of the Supreme Court of Florida was affirmed with costs.

There are two other railroad corporations with like interests involved in the determination of the suit mentioned above. These are the Florida Central and Western, assessed for 1883 at $2,022,799.20, and the Florida Transit and Peninsular at $2,249,100; the Louisville

and Nashville is assessed at $463,800. The action of the courts thus adds nearly $5,000,000 of property to the revenue resources of the State, such valuation being made taxable under the decision. At average rate of State and county taxation for 1883 the property thus made liable will yield about $80,000 revenue.

Agriculture.—The agriculturists of Florida are rapidly turning their attention to the cultivation of fruits and early vegetables. This naturally leads to small farms and an improved system of cultivation. Truck-farming is becoming more general each year, and adds greatly to the resources of the State. Truck-farmers, in most cases, own the land they cultivate. As early as February 1st they send forward to the Northern markets tomatoes, green peas, cucumbers, and other vegetables, which bring, at this early season of the year, remunerative prices, and find a ready sale. The culture of strawberries and other small fruits is rapidly increasing and proves profitable. The cultivation of oranges, lemons, and other tropical fruits continues to increase annually, and this industry will soon become one of the most important in the State. The value of the orange business alone in 1880 amounted to $1,000,000, with an employed capital of more than $10,000,000, and the industry has steadily increased since. About 75 trees are planted to the acre, the average yield exceeding 500 oranges to the tree. The trees begin to bear when about seven years old, and reach their prime in twenty years, but will continue to be productive, it is estimated, seventy-five or eighty years longer.

The Everglades.—A report has been made by the expedition sent into the Everglades by the New Orleans "Times-Democrat." It establishes the fact that the Everglades from Lake Okechobee to Cape Sable are worthless for any purposes of cultivation; that they contain no large tracts of land above water; that they can not be successfully drained; and that the establishment and maintenance of a telegraph line along the route traversed would be impossible. The Everglades, and especially the northern glades, are a vast swamp, irreclaimable and useless. The only portions of the southern peninsula capable of cultivation lie on the Atlantic and Gulf coasts, with this vast morass between them.

FOODS, COMPOSITION AND NUTRITIVE VALUES OF. It is a striking fact that while the chief item of the living expenses of the majority of civilized men is the cost of their food, even the most intelligent know less of the actual value of their food than of any other of the important articles they buy. It makes but little difference to the man with $5,000 per annum whether he pays fifteen cents or five dollars per pound for the protein of his food, provided it pleases his palate. But to the humble housewife, whose husband earns but $500 a year, it is a matter of great importance; and she is very apt, after hesitating at the dry-goods store between two pieces of calico for her daughter's dress, and taking one at ten cents a yard for economy's sake, though the one at eleven was prettier, to go to the grocers, the butchers, or the fish-dealers, and pay a dollar per pound for the nutrients of her children's food, when she might have obtained the same ingredients, in forms equally wholesome and nutritious, for fifty or even twenty cents. She will continue this bad economy until she obtains a general idea of the actual cheapness and dearness of foods as distinguished from their price.

The "Annual Cyclopædia" for 1881 contained an article upon the "Nutritive Values of Foods," in which were given the proportions of nutritive ingredients in a considerable number of the more common animal and vegetable foods as shown by chemical analysis. The figures for fish, oysters, etc., were selected from the results of an investigation undertaken under the auspices of the Smithsonian Institution and the United States Fish Commission in the chemicall aboratory of Wesleyan University, Middletown, Conn., by Prof. W. O. Atwater.* The data for other foods were compiled from European sources, no considerable investigations of the composition of American foods other than fish having at that time been made. Since then the researches upon fish have been continued, and a large number of specimens of our animal and vegetable foods have also been studied; those of animal and some vegetable foods by Prof. Atwater, and others of vegetable foods, by Prof. W. H. Brewer† of the Sheffield Scientific School, New Haven, Conn., and still others by other investigators. During the same period new researches upon the digestibility of foods, and upon the functions of their nutritive ingredients, have likewise been published, so that we are able to-day to present new and important facts regarding the nutritive values of food in general, and especially the composition of our own food-materials.

The article referred to in the "Annual Cyclopædia" for 1881 contained some explanations of the chemistry of foods and the functions of their ingredients in nutrition. To those who have made no special study of the matter, however, the following brief statements may be interesting, the more so because late investigations are tending to decide some disputed questions regarding the ways in which food is used in the body, and because many of the statements found in current works on chemistry and physiology have become of little value in the light of the latest knowledge. A considerable number of the analyses of American foods given below appear in print for the first time in this article.

Viewed from the stand-point of their uses in the nutrition of man, the constituents of ordi-

* See partial account of results in "Report of United States Fish Commission, 1880" (published in 1883).

† Published in the "Report on Cereal Products of the United States." By Prof. Brewer. "United States Census, 1880," vol. iii.

nary food-materials may be succinctly classified as follows:

1. *Edible Substance:* e. g., the flesh of meats and fish, the shell-contents of oysters.

2. *Refuse:* e. g., bones of meat and fish, shells of oysters.

The edible substance consists of—

1. *Water.* 2. *Nutritive Substances or Nutrients.* The refuse may, for our present purpose, be left out of account, and our attention confined to the edible substance. And, as the water which forms a part of the edible substance, though indispensable, is nevertheless inexpensive and distinct from the nutritive ingredients, we may consider simply the nutrients.

Speaking as chemists and physiologists, we may say that our food supplies, besides mineral substances and water, albuminoids, carbohydrates, and fats; and that these are transformed into the tissues and fluids of the body, muscle and fat, blood and bone, and are consumed to produce heat and force. Viewed from a chemico-physiological stand-point, then, the nutritive ingredients of food can be classified as follows. Of the actually nutritive substances or nutrients of foods the most important groups (exclusive of water) are—

1. *Protein* (proteids, albuminoids, etc.): e. g., albumen ("white") of egg, fibrin of blood, "lean" of meat, gluten of wheat.

2. *Fats:* e. g., fat of meat, butter, olive-oil.

3. *Carbohydrates:* e. g., starch, sugar, glycogen.

4. *Mineral Matter or Ash:* e. g., calcium and potassium phosphates and chlorides.

The terms protein, proteids, and albuminoids, are applied somewhat indiscriminately, in ordinary usage, to several or all of certain classes of compounds characterized by containing nitrogen. The most important are the proteids or albuminoids, of which albumen, the white of egg, and myosin, the basis of muscle, are types. Allied to these, but occurring in smaller proportions in animal tissues and foods, are the nitrogenous compounds that make the basis of connective and other tissues. Gelatin is derived from some of these tissues, and may be taken as a type of the compounds of this class. As these constituents are of similar constitution and have similar or nearly similar uses in nutrition, it is customary to group them together as protein. The muscular tissues of animals, and hence the lean portions of meat, fish, etc., contain small quantities of so-called nitrogenous extractives—creatin, carnin, etc. (contained in extract of meat, etc.)—which contribute materially to the flavor and somewhat to the nutritive effect of the foods containing them. They are not usually deemed of sufficient importance, however, to be grouped as a distinct class in tabular statements of the composition of foods. Details regarding the nature and functions of the several classes of nutrients may be found in the article in the "Annual Cyclopædia" for 1881, referred to above. Concerning their composition, it will suffice, then, to state that the compounds classed together as protein contain carbon, oxygen, hydrogen, and nitrogen, while the carbohydrates and fats contain no nitrogen, but consist chiefly of carbon, oxygen, and hydrogen. The fats are much richer in carbon than the carbohydrates. Animal foods, as meats, fish, etc., contain but little of carbohydrates, their chief nutrients being protein and fats. Milk, however, and some shell-fish, as oysters, scallops, etc., contain more or less of carbohydrates. Vegetable foods, as wheat, potatoes, etc., contain less protein and consist largely of starch, sugar, cellulose, and other carbohydrates.

Functions of Nutrients.—The different nutrients have different offices in nourishing the body, in building up its tissues, repairing its wastes, and serving as fuel to produce animal heat and muscular and intellectual energy. The chief part borne by each in nutrition is shown below:

The protein of food	forms the (nitrogenous) basis of blood, muscle, connective tissue, etc. is transformed into fats and carbohydrates, and stored as such in the body. is consumed for fuel.
The fats of food	are stored as fat. are consumed for fuel.
The carbohydrates of food	are transformed into fat. are consumed for fuel.

In classifications formerly maintained and frequently met with still, the protein compounds were regarded as the "flesh-formers" and the sources of muscular energy, while the carbohydrates and fat were looked upon a "fat-formers" and "heat-producers." A vast deal of painstaking research, however, has shown that these distinctions were not correctly drawn. The albuminoids are flesh-formers, it is true; indeed, flesh, i. e., muscular and other nitrogenous tissue, according to the nearly unanimous testimony of the most trustworthy experiments, is made from the nitrogenous constituents of the food exclusively. But the balance of testimony is decidedly against the production of muscular energy by nitrogenous compounds exclusively or mainly. Each of the three groups of nutrients probably shares, directly or indirectly, in this function. So, too, it appears that the combustion which produces animal heat is not confined to the carbohydrates and fats, but the protein compounds, or the products of their decomposition, are also used for this purpose. Again, the production of fat in the body was formerly ascribed to the fats and carbohydrates alone. The view was held at the same time, and is still maintained by some physiologists, that the carbohydrates can not be transformed into fats, and that a very large part of the fat of the body is formed from the disintegration of the albuminoids. The weight of evidence to-day is decidedly in favor of the assumption that all three of the great classes of nutrients in our foods—the

albuminoids, the carbohydrates, and the fats —are transformed into fat, and that the fat thus formed is consumed, either before or after being stored as body-fat.

It appears, then, that protein is the most important constituent of our food, because, while it performs the functions of each of the other two chief nutrients in being transformed into fat and in being consumed for fuel, it has a most weighty office of its own in forming the basis of the blood and in building up the muscular and other nitrogenous tissues, an office which no other nutrient can perform at all. And, as we shall see further, in examining the pecuniary cost, protein is the dearest as well as most important of the ingredients of foods.

The same experimental research which has revealed to us the ways in which our food supplies our bodily wants, has shown us how to estimate the relative nutritive values of different foods from their chemical composition. The estimates are only approximate, because the nutritive effects are influenced by various conditions, some of which research has not yet definitely explained, while others vary with the nature of the food or of the user, so that the value of a given food in a given case may vary from the standard set by the analysis. These sources of uncertainty are nevertheless so narrowed down by late investigation, and the errors confined within such limits, that by intelligent use of the facts at our disposal we may judge very closely from the chemical composition of a food what is its value as compared with others of the same class, at any rate, for our nourishment.

Chemical Analysis of Foods. — The following tables give the composition of a number of the more important kinds of animal and vegetable foods. The details will perhaps be best explained by an example. A sample of beef, sirloin, of medium fatness, was found to consist of about one fourth bone and three fourths flesh, edible substance. The flesh was analyzed and found to contain, nearly: water, 60 per cent.; protein, 19 per cent.; fats, 20 per cent.; mineral matters, 1 per cent. Calculated upon the whole sample of meat, of which one fourth, or 25 per cent., was bone and other refuse, and 75 per cent. flesh, the analysis would stand as in the schedule below, in which the composition of the flesh by itself and that of the meat, bone, and all, are both given:

	In flesh, edible portion.	In meat as bought, including refuse.
	Per cent.	Per cent.
Refuse, bone, etc.	None.	25
Water	60	45
Protein	19	14¼
Fat	20	15
Mineral matters	1	0¾
Total	100	100

This very imperfect analysis may be stated in the following form, as is done in the tables beyond: *

CONSTITUENTS OF SAMPLE OF BEEF, SIRLOIN.

FOOD-MATERIAL.	In Edible Portion— i. e., flesh freed from bone and other refuse.					In Meat as purchased— including both edible portion and refuse.					
							Edible portion.				
			Nutrients.			Refuse: Bones, etc.			Nutrients.		
	Water.	Nutrients.	Protein.	Fats.	Mineral matters.		Water.	Nutrients.	Protein.	Fats.	Mineral matters.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Beef, sirloin, medium fatness	60	40	19	20	1	25	45	30	14·3	15	0·7

Table I, on page 345, gives the composition of a number of animal foods, mostly from late American analyses. It is only a short time since analyses of American meats, fish, etc., have been undertaken in any considerable number, and those as yet accomplished are far from sufficient for a complete survey of the subject. Indeed, the work already done can be regarded only as a beginning. Still, the figures will give a tolerably fair idea of the composition of the articles named.

The analyses of this table, with the exception of a few from European sources and indicated by italics, are selected from the results of the investigation referred to above, as conducted under the auspices of the Smithsonian Institution and the United States Fish Commission. The specimens of meats were purchased from a dealer in Middletown, Conn., and said by him to be "fair average samples of the better kinds of meats." A side of beef, freshly brought in winter from Chicago, and said to be a good specimen of first-class "Chicago beef," was cut into about twenty-five pieces in the ordinary way. From each a sample fairly representing the whole cut was taken and analyzed. Thus the composition of each piece and of the whole side was learned. The composition of one of the leanest portions, the round, a moderately fat piece, sirloin, a very fat portion, flank, and of the whole side, together with a tongue, liver, and heart from another animal, are given in the table. The samples of a side of mutton and of parts of the same side were obtained and analyzed in like manner, as were those of the other meats and fowl. The speci-

* The tables contain also columns for carbohydrates, etc., which occur in milk and in some shell-fish, but are not found in ordinary meats in sufficient amount to warrant their insertion in such tables as these.

TABLE I.—CONSTITUENTS OF ANIMAL FOODS.

KINDS OF FOOD-MATERIALS.*	IN EDIBLE PORTION, I. E., FLESH, ETC., FREED FROM BONE, SHELLS, AND OTHER REFUSE.						IN SPECIMENS AS PURCHASED IN THE MARKETS, INCLUDING BOTH EDIBLE PORTION AND REFUSE.						
			NUTRIENTS.					EDIBLE PORTION.					
	Water.	Nutrients.	Protein (albuminoids).	Fats.	Carbohydrates, etc.	Mineral matters.	Refuse: Bones, skins, shells, etc.	Water.	Nutrients.	NUTRIENTS. Protein (albuminoids).	Fats.	Carbohydrates, etc.	Mineral matters.
	%	%	%	%	%	%	%	%	%	%	%	%	%
MEATS, FRESH.													
Beef, side, well fattened	54·6	45·4	17·9	26·5	..	1·0	19·7	43·8	36·5	14·4	21·3	..	0·8
Beef, round, rather lean	66·7	33·3	23·0	9·0	..	1·3	10·0	60·0	30 0	20·7	8·1	..	1·2
Beef, sirloin, rather fat	60·0	40·0	19·0	20·0	..	1·0	25·0	45·0	30·0	14·3	15·0	..	0·7
Beef, flank, very fat	27·3	72·7	12·4	59·6	..	0·7	12·5	23·9	63·6	10 8	52·2	..	0·6
Beef-liver	69·5	30·5	20·1	5·4	3·5	1·5	0·0	69·5	30·5	20·1	5·4	3·5	1·5
Beef-tongue	63·8	36·2	17·1	18·1	..	1·0	15·3	54·0	30 7	14·5	15·3	..	0·9
Beef-heart	56·8	43·2	15·8	26·3	..	1·1	6·0	53·4	40·6	14·9	24·8	..	0·9
Veal, lean	79·8	21·2	19·9	0·8	..	(0·5)	?	..	..	..	..	..	..
Veal, rather fat	72·3	27·7	18·9	7·5	..	(1·3)	?	..	..	..	..	..	..
Mutton, side, well fattened	53·6	46·4	16·5	29·0	..	0·9	20·0	42·9	37·1	13·2	23·2	..	0·7
Mutton, leg	61·9	38·1	18·2	19·0	..	0·9	18·4	40·2	41·4	12·2	28·6	..	0·6
Mutton, shoulder	58·6	41·4	18·0	22·4	..	1·0	16·9	43·7	34·4	15·0	18·6	..	0·8
Mutton, loin (chops)	49·3	50·7	14·9	35·1	..	0·7	16·3	41·3	42·4	12·5	29·3	..	0·6
MEATS, PREPARED.													
Dried beef	59·5	40·5	29·2	4·5	..	6·8	6·5	55·5	38·0	27·4	4·2	..	6·4
Corned beef, rather lean	58·1	41·9	21·4	17·4	..	3·1	6·2	54·5	39·3	20·1	16·3	..	2·9
Smoked ham	41·5	58 5	24·0	30·6	..	3·9	12·4	36·4	51·2	21·0	26·8	..	3·4
Pork, bacon, salted	10·0	90·0	3·0	80·5	..	6·5	5·0	9·5	85·5	2·8	76·5	..	6·2
FOWL.													
Chicken, rather lean	71·5	28·5	25·1	2·0	..	1·4	41·6	41·8	16·6	14·6	1·2	..	0·8
Turkey, medium fatness	65·6	34·4	24·7	8·5	..	1·2	35·4	42·4	22·2	16·0	5·5	..	0·7
DAIRY PRODUCTS, EGGS, ETC.													
Cow's milk	87·4	12·6	3·4	3·7	4·3	0·7	0·0	87·4	12·6	3·4	3·7	4·8	0·7
Cow's milk, skimmed	90·7	9·3	3·1	0·7	4·8	0·7	0·0	90·7	9·3	3·1	0·7	4·8	0·7
Cheese, whole milk	31·2	68·8	27·1	35·4	2·4	3·9	0·0	31·2	68·8	27·1	35·4	2·4	3·9
Cheese, skimmed milk	41·3	58·7	38·3	6·8	9·0	4·6	0·0	41·3	58·7	38·3	6·8	9·0	4·6
Butter	7·0	93·0	1·0	89·0	..	3·0	0·0	7·0	93·0	1·0	89·0	..	3·0
Hen's eggs	73·7	26·3	12·5	12·1	0·6	1·1	11·0	65·6	23·4	11·1	10·8	0·5	1·0
FISH, FRESH.													
Flounder, whole	84·0	16·0	14·0	0·7	..	1·3	66·8	27·9	5·3	4·7	0·2	..	0·4
Yellow perch, whole	79·2	20·8	18·8	0·8	..	1·2	62·7	29·6	7·7	7·0	0·3	..	0·4
Haddock, dressed	81·4	18·6	17·1	0·3	..	1·2	52·5	39·4	8·1	7·8	0·3	..	0·5
Black bass, whole	76·6	23·4	20·5	1·7	..	1·2	54·9	34·5	10·6	9·3	0·8	..	0·5
Bluefish, dressed	78·2	21·8	19·3	1·2	..	1·3	48·6	40·2	11·2	9·9	0·6	..	0·7
Pickerel (pike), whole	79·7	20·3	18·7	0·6	..	1·0	42·7	45·7	11·6	10·7	0·3	..	0·6
Brook-trout, whole	77·5	22·5	19·2	2·1	..	1·2	48 1	40·2	11·7	10·0	1·1	..	0·6
Smelt, whole	79·0	21·0	17·5	1·8	..	1·7	41·9	45·9	12·2	10·2	1·0	..	1·0
Mackerel, lean, whole	75·1	24·9	19·4	4 2	..	1·3	50·4	37·8	12·3	9·6	2·1	..	0·6
Mackerel, fat, whole	68·4	36·6	18·9	16·2	..	1 5	33·8	42·0	24·2	12·5	10·7	..	1·0
Mackerel, average, whole	73·1	26·9	18·6	7·0	..	1·3	44·6	40·3	15·1	10·2	4·2	..	0·7
Cod, dressed	82·0	18·0	16·4	0·4	..	1·2	30·0	57·4	12·6	11·5	0·3	..	0·8
Alewife, whole	72·8	27·2	19·7	6·0	..	1·5	49·4	36·8	13·8	10·0	3·0	..	0·8
Whitefish, whole	69·2	30·8	22·7	6·5	..	1·6	53·5	32·2	14·3	10·6	3·0	..	0·7
Shad, whole	70·4	29·6	18·8	9·5	..	1·3	50·1	35·1	14·8	9·4	4·8	..	0·6
Herring, whole	63·6	31·4	19·0	10·9	..	1·5	46·0	37·0	17·0	10·3	5·9	..	0·8
Halibut, dressed	75·2	24·8	18·5	5·2	..	1·1	18·7	62·4	18·9	16·0	2·2	..	0·7
Salmon-trout, dressed	68·9	31·1	18·5	11·4	..	1·2	35·2	44·9	19·9	12·5	6·6	..	0·8
Salmon, in season, whole	62 9	37·1	22·9	12·9	..	1·3	38·5	38·7	22·8	14·1	7·9	..	0·8
						Salt.	Salt.						
FISH, PREPARED.													
Smoked haddock	72·9	25·1	23·4	0·2	..	1·5 2·0	33·2 1·5	48·6	16·7	15·6	0·1	..	1·0
Salt cod	51·6	27·8	24·4	0·3	..	3·1 20·6	24·9 15·8	38·8	21·0	18·4	0·3	..	2·3
Smoked herring	34·4	54·0	36·8	15·7	..	1·5 11·6	44·4 6·5	19·1	30·0	20·4	8·8	..	0·8
Canned salmon	61·3	37·2	20·2	15·7	..	1·5 1·0	3·9 1·0	59·2	35·9	19·3	15·3	..	1·3
Salt mackerel	42·6	46·8	21·3	22·8	..	2·7 10·6	22·9 8·2	32·8	36·1	16·4	17·6	..	2·1
INVERTEBRATES, SHELL-FISH, ETC.													
Oysters, very poor in nutrients	91·4	8·6	4·5	0·6	1·9	1·6	68·8	10·2	1·0	0·5	0·1	0·2	0 2
Oysters, very rich in nutrients	80·8	19·2	8·2	1·7	7·3	2·0	81·4	15·2	3·4	1·5	0·2	1·3	0·4
Oysters, average	87·3	12·7	5·7	0·9	3·2	2·9	82·3	15·4	2·3	1·0	0·2	0·6	0·5
Round clams	86·2	13·8	6·5	0·4	4·2	2·7	68·3	27·3	4·4	2·1	0·1	1·3	0·9
Long clams	85·9	14·1	7·6	0·9	2·3	3·3	43·8	43·8	7·9	4·3	0·5	1·3	1·8
Mussels	84·2	15·8	7·7	0·9	4·2	3·0	49·3	42·7	8·0	3·9	0·5	2·1	1·5
Scallops	80·3	19·7	14·7	0·2	3·4	1·4	0·0	80·3	19·7	14·7	0·2	3·4	1·4
Lobsters	81·8	18·2	14·5	1·4	0·6	1·7	60·2	33·0	6·3	5·4	0·5	0·2	0·7
Crabs	77·1	22·9	16·6	2·0	1·2	3·1	55·8	34·1	10·1	7·3	0·9	0·5	1·4
Canned oysters	85·4	14·6	6·4	1·6	5·1	1·5	0·0	85·4	14·6	6·4	1·6	5·1	1·5
Canned lobsters	77·7	22·3	18·1	1·1	0·6	2·5	0·0	77·7	22·3	18·1	1·1	0·6	2·5

* Italics indicate European analyses, the rest are American.

mens of cheese were from Washington market, New York, the analyses in the table representing averages of several samples. The butter was from a Vermont dairy. Some of the specimens of fish were purchased in Middletown, the most, however, were furnished gratuitously from Fulton market, New York, by Mr. E. G. Blackford, Fish Commissioner of the State of New York, who also contributed to the pecuniary expense of the investigation, as did likewise Mr. A. R. Crittenden, of Middletown; A considerable number of the specimens whose analyses are given in this table, and in Table II beyond, were furnished by Mr. F. B. Thurber, of New York, who also contributed a considerable sum toward defraying the cost of the research. It may be added that the figures in Table I (aside from those from European sources) are selected from the results of nearly three hundred analyses of American food materials, of which some two hundred are of fish and invertebrates. The analyses of fish, being more numerous, give more satisfactory figures and averages than those of meats, etc.

TABLE II.

CONSTITUENTS OF VEGETABLE FOODS AND BEVERAGES.

KINDS OF FOODS AND BEVERAGES.	Water.	NUTRIENTS. Protein (albuminoids).	Fats.	Carbohydrates, etc.	Woody fiber.	Mineral matters.
FOODS.						
Wheat-flour, average*	11·6	11·1	1·1	75·4	0·2	0·6
Wheat-flour, maximum*	13·5	13·6	2·0	78·5	1·2	1·5
Wheat-flour, minimum*	8·3	8·6	0·6	68·3	0·1	0·3
Graham-flour (wheat)	13·0	11·7	1·7	69·9	1·9	1·8
Cracked wheat	10·4	11·9	1·7	74·6		1·4
Rye-flour	13·1	6·7	0·8	78·3	0·4	0·7
Pearled barley	11·8	8·4	0·7	77·8	0·3	1·0
Buckwheat-flour	13·5	6·5	1·3	77·3	0·3	1·1
Buckwheat "farina"	11·2	3·3	0·3	84·7	0·1	0·4
Buckwheat "groats"	10·6	4·8	0·6	83·1	0·3	0·6
Oatmeal	7·7	15·1	7·1	67·2	0·9	2·0
Corn-meal	14·3	8·4	3·5	70·9	1·6	1·3
Hominy	13·5	8·3	0·4	77·1	0·3	0·4
Rice	12·4	7·4	0·4	79·2	0·2	0·4
Beans	13·7	23·2	2·1	53·7	3·7	3·6
Peas	15·0	22·9	1·8	52·4	5·4	2·5
Potatoes	75·5	2·0	0·2	20·7	0·8	1·0
Sweet-potatoes	75·8	1·5	0·4	20·0	1·1	1·2
Turnips	91·2	1·0	0·2	6·0	0·9	0·7
Carrots	87·9	1·0	0·2	8·9	1·2	0·8
Cabbage	90·0	1·9	0·2	4·9	1·8	1·2
Cauliflower	90·4	2·5	0·4	5·0	0·9	0·8
Melons	95·2	1·1	0·6	1·4	1·1	0·6
Pumpkins	90·0	0·7	0·1	7·3	1·3	0·6
Apples	84·8	0·4	0·0	12·8	1·5	0·5
Pears	83·0	0·4	0·0	12·0	4·3	0·3
Starch	15·1	1·2	0·0	83·3	0·0	0·4
Cane-sugar	2·2	0·3	0·0	96·7	0·0	0·8
Wheat-bread†	32·7	8·9	1·9	55·5		1·0
Graham-bread	34·2	9·5	1·4	53·3		1·6
Rye-bread	30·0	8·4	0·5	59·7		1·4
Soda-crackers	8·0	10·3	9·4	70·5		1·8
"Boston" crackers	8·3	10·7	9·9	68·7		2·4
"Oyster" crackers	3·9	12·3	4·8	76·5		2·5
Oatmeal-crackers	4·9	10·4	13·7	69·6		1·4
Pilot (bread) crackers	7·9	12·4	4·4	74·2		1·1
Macaroni	13·1	9·0	0·8	76·8		0·8
BEVERAGES.			Alcohol.		Free acid.	
Lager-beer	90·3	0·5	4·0	6·6	...	0·2
Porter and ale	88·5	0·7	5·2	7·2	...	0·3
Rhenish wine, white	86·3	...	10·5	2·6	0·4	0·2
Rhenish wine, red	86·9	...	8·9	3·4	0·5	0·3
French wine, claret	88·4	...	8·1	2·7	0·6	0·2

* Of forty-nine analyses.

† From flour of about average composition.

The analyses of foods in Roman letters are American, those of foods and beverages in italics are European.

Table II gives analyses of vegetable food materials and beverages. The figures for wheat-flour represent the results of forty-nine analyses of American flours, of which the majority were analyzed under the direction of Prof. Brewer, and the rest collated by him from other sources for the "Report of the United Census, 1880." The largest and the smallest percentages of each ingredient found in the analyses are given opposite "maximum" and "minimum." The specimens of bread, crackers, etc., were purchased and analyzed at Middletown, Conn., and have probably about the usual composition of such materials.

An attempt is made in Tables III and IV to illustrate graphically the composition of some of the foods whose composition is given in Tables I and II.

Comparative Costs of Nutritive Ingredients in Different Foods.—A subject that has received but little attention in this country, though it has become a vital one in Europe, and is becoming so with us, is the cost of the nutritive material of our foods. The relative cheapness or dearness of different foods must be judged by comparing, not the prices per pound, but the costs of the actual nutrients. In making such comparisons, the cost may be assumed to fall, not upon the inedible portions and the water, but solely upon the three classes of nutrients: protein, fats, and carbohydrates. The relative physiological values of the nutrients in different foods depend upon (1) their digestibility and (2) their functions and the proportions in which they can replace each other in nutrition. An accurate physiological valuation is, in the present state of our knowledge, at least, impracticable. The pecuniary costs of the nutrients are, however, more nearly capable of approximation.

Various methods have been proposed for computing the relative pecuniary costs of the nutrients of foods, none of which, however, are entirely beyond criticism. The following, based upon German estimates of the relative costs of protein fats and carbohydrates, is perhaps as satisfactory as any.

From extended comparisons of the composition and market prices of the more important animal and vegetable food-materials, such as meats, fish, flour, etc., those which serve for nourishment and not as luxuries, and form the bulk of the food of the people, it has been estimated that a pound of protein costs, on the average, five times as much, and a pound of fats three times as much, as a pound of carbohydrates; that, in other words, these three classes of nutrients stand related to each other, in respect to cost, in the following proportions:

Assumed ratios of costs in staple foods
- Protein 5
- Fats 3
- Carbohydrates 1

TABLE III.—COMPOSITION OF EDIBLE PORTION OF ANIMAL FOODS FREED FROM BONE, SKIN, AND OTHER REFUSE.

Percentages indicated by shaded spaces.

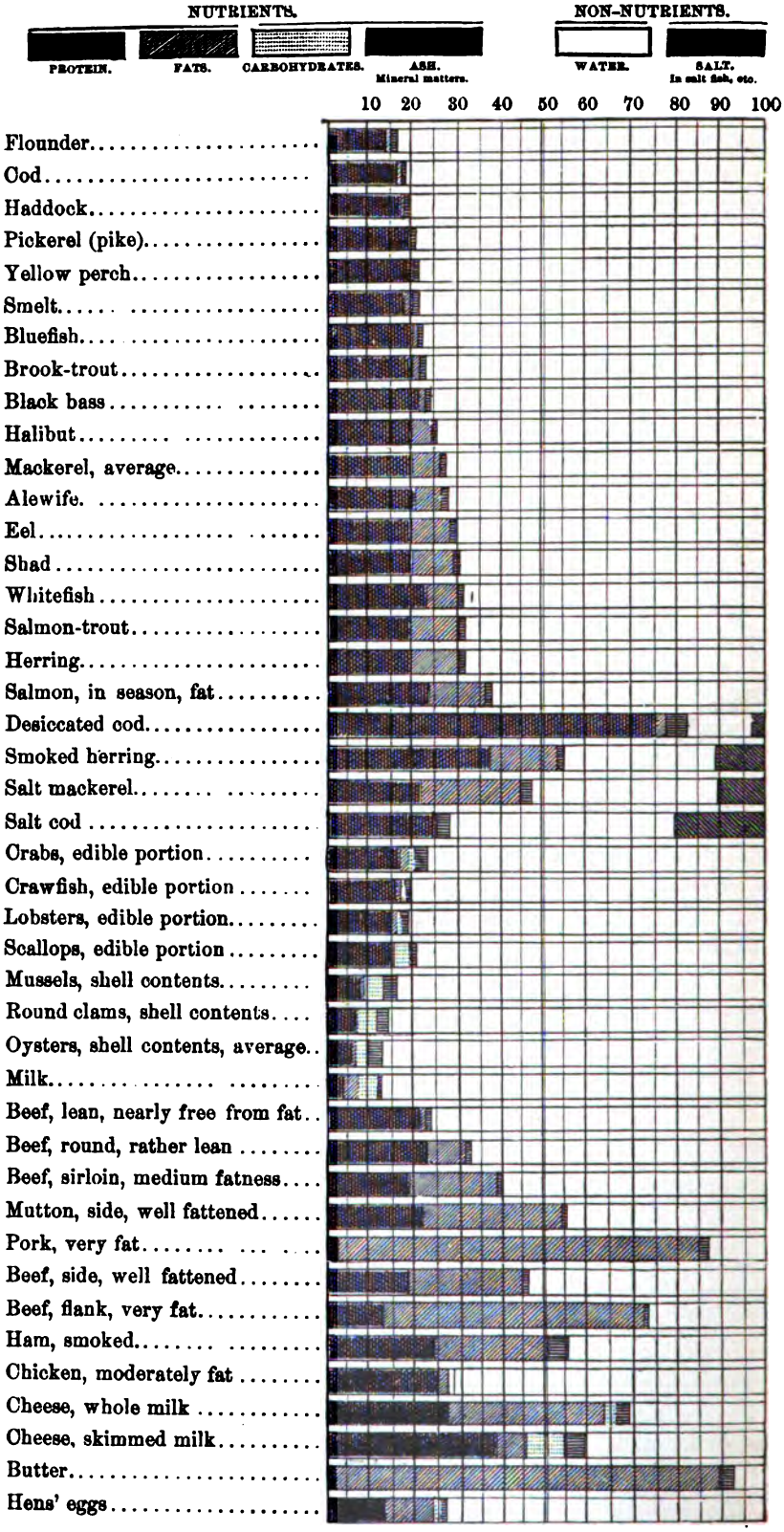
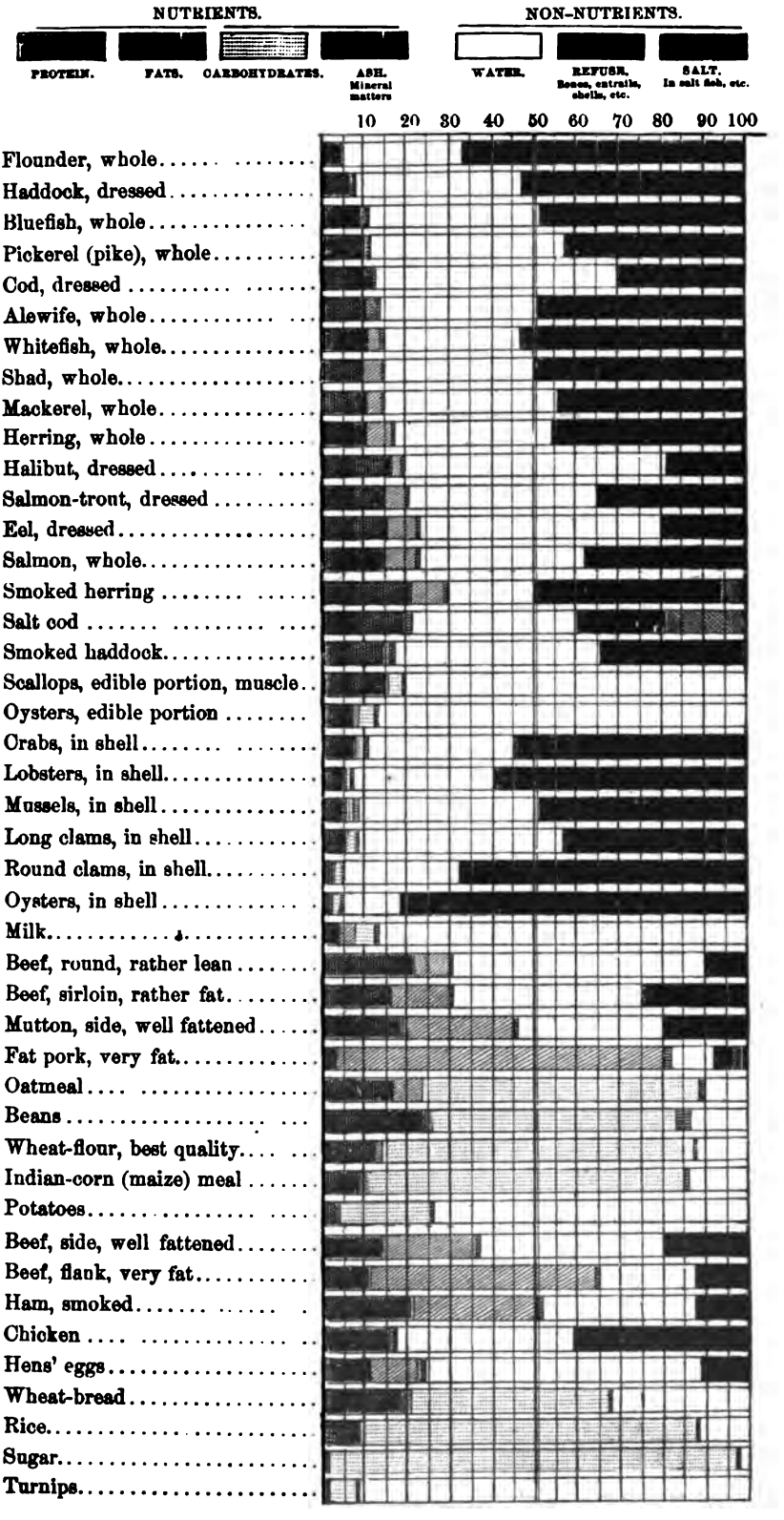


TABLE IV.—COMPOSITION OF FOODS AS FOUND IN THE MARKETS.

Percentages indicated by shaded spaces.



Suppose a pound of beef of average fatness to cost 25 cents and to contain 25 per cent. of inedible matters, bone, etc., 45 per cent. of water, and 30 per cent. of nutritive substance, upon which latter—the bone and water being assumed to be without nutritive value—the whole cost comes. The 30 per cent. or $\frac{30}{100}$ pounds of nutritive substance thus costs 25 cents, or at the rate of 83⅓ cents per pound. If, now, we leave out of account the minute quantities of carbohydrates and the mineral matters, the whole cost will fall upon the protein and fats. Assuming these to cost in the ratio of 5 : 3 and the amounts in the meat to be, protein 14¼ per cent. and fats 15 per cent., an easy computation will show the protein to cost 107·7 cents, and the fats 64·6 cents per pound. Proof: $14\frac{1}{4}$-$_{100}$ pound of protein at 107·7 cents = 15·3 cents; $\frac{15}{100}$ pounds of fats at 64·6 cents = 9·7 cents; 15·3 cents + 9·7 cents = 25 cents, the cost of the pound of meat which contained the given amounts of protein and fats. The above ratios, protein : fats : carbohydrates = 5 : 3 : 1, represent at best only general averages, and may in given cases be more or less incorrect. A method free from these objections consists in simply computing the amounts of nutrients that may be bought for the same price in different food-materials. At the same time the method above detailed is doubtless accurate enough for a general comparison of the relative cheapness and dearness of ordinary foods, and is used in calculating the costs of protein below.

Of the different nutrients, protein is physiologically the most important as it is pecuniarily the most expensive. In fish, furthermore, as in the leaner kinds of meat, it is the predominant nutritive ingredient. For these reasons the cost of protein in fish and other foods may be used as a means of comparing their relative cheapness or dearness, as is done in the following table. The figures represent the ordinary prices per pound and the corresponding costs of protein, in specimens of food-materials obtained in New York and Middletown (Conn.) markets. Though the number of specimens is too small for reliable averages, the figures, taken together, doubtless give a tolerably fair idea of the relative costliness of the nutrients in the different classes of foods.

Thus the nutrients of vegetable foods are, in general, much less costly than in animal foods. The animal foods have, however, the advantage of containing a larger proportion of protein and fats, and the protein, at least, in more digestible forms. And further, the so-called "nitrogenous extractives" of kreatin, carnin, etc., of meats, which contribute so much to their agreeable flavor, exert a nutritive effect which, though not yet explained, is nevertheless important. It is these which give to "extract of meat" its peculiar flavor and stimulating effect.

Among the animal foods, those which rank as delicacies are the costliest. By the above calculations, the protein in the oysters costs from two to three dollars, and in salmon rises to nearly six dollars, per pound. In beef, mutton, and pork, it varies from 108 to 48 cents; in shad, bluefish, haddock, and halibut, the range is about the same; while in cod and mackerel, fresh and salted, it ranges from 67 to as low as 33 cents per pound. Salt cod and salt mackerel are nearly always, fresh cod and mackerel often, and even the choicer fish, as bluefish and shad, when abundant, cheaper sources of protein than any but the inferior kinds of meat.

COMPARATIVE COSTS OF PROTEIN IN ANIMAL AND VEGETABLE FOODS.

FOODS.	Ordinary prices per pound.	Cost of protein per pound.
	Cents.	Cents.
Beef: Sirloin, medium fatness	25	108
" Same, at lower price	20	86
" Round, rather lean	18	70
" Round, rather lean, lower price	16	62
" Corned, lean	13	56
" Flank,* very fat	15	26
Mutton: Leg	22	107
" Side, medium fatness	20	59
Pork,* very fat	16	30
Smoked ham	18	48
Milk, 8 cents per quart	4	61
Cheese: Whole milk	18	33
" Skimmed milk	8	19
Salmon: Early in season	100	572
" When plenty	30	172
Shad	12	98
" When abundant	8	65
Bluefish	10	98
Haddock	7	94
Halibut	15	87
Mackerel	10	60
" When abundant	5	40
Cod	8	67
" When plenty	6	50
Alewife	3	19
Canned salmon	20	70
Salt mackerel	12·5	46
Salt cod	7	38
" Lower	6	33
Oysters,† 25 cents per quart	12½	156
" 35 cents per quart	17·5	220
" 50 cents per quart, choice	25	312
Lobsters	12	209
Wheat-flour, best	5	19
Indian-corn (maize) meal	3	12
Oatmeal	5	15
Beans	5	14
Potatoes,* 50 cents per bushel	0·8	14
" 100 cents per bushel	1·7	28

* Contain very little protein. † Shell contents.

In short, we pay for many of our foods according to their agreeableness to our palates, rather than their value for nourishing our bodies. At the same time it is interesting to note that the prices of the materials that make up the bulk of the food of the people seem to run more or less parallel with their actual nutritive values. Here, as elsewhere, the resultant of the general experience of mankind has led slowly and blindly, but none the less surely, to the same general result to which accurate research more understandingly and quickly guides us.

Fish as Food.—As the investigation to which

a large number of the analyses of Tables I–IV belong was undertaken with an especial view to the study of fish as food for man, some more specific reference to fish may not be out of place here. The flesh of fish contains, in general, about the same proportions of protein, less fat, more water, and hence, on the whole, less nutritive material, than that of domestic animals used for food. Thus we have in the flesh of flounder only 16 per cent., and in that of cod 18 per cent. of nutrients, while ordinary lean beef has from 25 to 33 per cent., and the fatter meats considerably more. The fatter kinds of fish, however, as herring, mackerel, salmon, shad, and white-fish, approach nearer to medium beef. Dried and salted fish also contain good proportions of nutrients, the specimens of ordinary salt codfish having 28 per cent., salt mackerel 47 per cent. The edible portion of shell-fish is poor in nutrients, oysters varying from 9 to 19 per cent., and lobsters averaging 18 per cent.

Proportions of Nutrients in Fish and other Food-Materials as commonly sold.—Fish as found in the markets generally contain more refuse, bone, skin, etc., than meats, as is illustrated in Tables II and IV. With the larger proportions of both refuse and water the proportions of nutrients, though variable, are usually much less than in meats. Thus, a sample of flounder contained 67 per cent. of refuse, 28 per cent. of water, and only 5 per cent. of nutritive substance, while the salmon averaged 23 per cent., the salt cod 22 per cent., and the salt mackerel 36 per cent. of nutrients. The nutrients in meats ranged from 30 per cent. in beef to 46 per cent. in mutton, and 87½ per cent. in very fat pork (bacon). The canned fish compare very favorably with the meats. It is worth noting that the nutrients in fresh codfish, dressed, in oysters, edible portion, and in milk, were nearly the same in amount, about 12½ per cent., though differing in kind and proportions.

Vegetable foods generally have less water and more nutrients than animal foods. Ordinary flour, meal, etc., contain from 85 to 90 per cent. or more of nutritive material. But the nutritive value is not proportional to the quantity of nutrients, because the vegetable foods consist mostly of carbohydrates, starch, sugar, cellulose, etc., of inferior nutritive effect, and because their protein is less digestible than that of animal foods. Potatoes contain a large amount of water and extremely little protein or fats.

Uses of Fish as Food.—The chief uses of fish as food are (1) as an economical source of nutriment, and (2) to supply the demand for variety in diet, which increases with the advance of civilization and culture.

As nutriment, the place of fish is that of a supplement to vegetable foods, the most of which, as wheat, rye, maize, rice, potatoes, etc., are deficient in protein, the chief nutrient of fish.

The so-called nitrogenous extractives, contained in small quantities in fish, as in other animal foods, are doubtless useful in nutrition. The theory that fish is especially valuable for brain-food, on account of an assumed richness in phosphorus, is not sustained by the facts of either chemistry or physiology.

It is an interesting fact that the poorer classes of people and communities almost universally select those foods which chemical analysis shows to supply the actual nutrients at the lowest cost. But, unfortunately, the proportions of the nutrients in their dietaries are often very defective. Thus, in portions of India and China, rice; in Northern Italy, maize-meal; in certain districts of Germany and in some regions and seasons in Ireland, potatoes; and among the poor whites of the Southern United States, maize-meal and bacon, make a large part, and in some cases almost the sole, food of the people. These foods supply the nutrients in the cheapest forms, but are all deficient in protein. The people who live upon them are ill-nourished and suffer physically, intellectually, and morally thereby.

On the other hand, the Scotchman finds a most economical supply of protein in oatmeal, haddock, and herring; and the rural inhabitants of New England supplement the fat of their pork with protein of beans, and the carbohydrates of potatoes, maize, and wheat-flour with the protein of codfish and mackerel, and, while subsisting largely upon such frugal but rational diets, are well nourished, physically strong, and noted for their intellectual and moral force.

As population becomes denser, the capacity of the soil to supply food for man gradually nears its limit. Fish gather materials that would otherwise be inaccessible and lost, and store them in the very forms that are most deficient in the produce of the soil. Thus, by proper culture and use of fish, the rivers and the sea are made to fulfill their office with the land in supplying nutriment for man.

FOOT-AND-MOUTH DISEASE. The foot-and-mouth disease is the most contagious of all the maladies which affect domestic animals. Nearly all four-footed beasts are liable to it, but the cloven-footed are especially predisposed to infection. Sheep, goats, swine, and cattle contract it with equal readiness and certainty. All the individuals of a herd or flock in which it makes its appearance are affected almost simultaneously. The period of incubation is about 36 hours, though in cold weather the symptoms seem to be delayed, and sometimes do not manifest themselves until six days after exposure to the infection. The symptoms are the swelling of the digits, blisters or ulcers between the hoofs, lameness, inflammation and tenderness of the udder and teats, with sores and blisters on those parts, frothing and slobbering at the mouth, a smacking noise made with the tongue and palate, and large, rounded blisters or angry sores on the mucous membrane of the mouth.

The British House of Commons in the session of 1883 passed a resolution prohibiting the importation into Great Britain of cattle from countries in which the foot-and-mouth disease exists. This was expected to stop altogether the trade in live cattle from the United States; but the British Government were unwilling to alter the regulations to gratify the protectionist desires, which were the motive of the resolution. The United States Treasury Cattle Commissioners were directed to inquire into the facts relating to the supposed existence of the complaint in the United States. In their report, made in the beginning of August, they declared the country to be entirely free of the disease. They found no trace of it in the cattle-depots at Kansas City, Council Bluffs, and Omaha, nor in the stock-yards along the line of transportation and on the Atlantic seaboard, nor in the dairy districts of the East. An epidemic of the foot-and-mouth disease, which spread from Canada into Northern New York and New England in the autumn of 1871, was brought from England by two cows imported into Montreal. The seclusion of the herds during the winter confined its action, and it soon disappeared. A cargo of Channel Island cattle suffering from the malady were landed at New York in 1881. These were quarantined by the State authorities. The steamship France, which brought them, after an imperfect disinfection, returned with a cargo of American beeves, which were condemned on their arrival in England as suffering from the foot-and-mouth disease. A similar case occurred in March, 1883, when a herd of Channel Island cattle, landed at Baltimore from the steamer Nessmore, were found to be affected with the disease, and were secluded so that the infection did not spread to the home herds; but the fat cattle which were shipped to England by the same vessel were found to be suffering from the disease on their arrival. The use of the head-ropes of diseased animals on others is believed to be a means of communicating the infection.

The foot-and-mouth disease has existed in various parts of Great Britain since 1880, in which year it is supposed to have been brought into England by a French cow. Ireland was free from it for many years; but recently it has committed great ravages in that country. A Westmoreland bull is believed to have contracted it from contact with a cargo of infected cattle at Liverpool, and contaminated the Irish herds. In 1883 occurred an outbreak in Scotland, into which country it was introduced by cattle brought from Ireland; but by vigorous measures on the part of the local authorities the disease was speedily stamped out. In 1839 the disease was imported into England by some other agency than by living animals, because importations of animals had been prohibited for several years. The measures taken to combat the malady in Great Britain, though not sufficient to exterminate it, greatly mitigated its ravages. In 1881 there were 4,833 outbreaks and 183,000 animals affected; in 1882, 1,970 outbreaks and 87,950 animals affected. In July, 1883, the disease began to spread in the English counties, and it became a serious epidemic.

FORESTRY, the science and art of managing and developing trees in masses. It does not relate to single trees by themselves, but only as they are combined and constitute what we call a forest. It studies not only the general laws of tree-growth, which are the same everywhere, but also the peculiar nature or habit of each species, and the adaptations of different species to various soils, climates, and exposures. It considers the conditions which will best promote the growth of trees, whether for fuel, for timber, or for other purposes. It ascertains what trees grow best by themselves, and what thrive best in company with others. It falls within the province of forestry, therefore, to investigate whatever promotes or hinders the growth of trees, the causes of disease among them, the insects that prey upon them, and everything that may be an impediment to the development of the forest.

But forestry, as now understood, has a wider range than this even. It recognizes the connection of trees in masses with rain-fall and moisture, and with the distribution of the same and their consequent influence upon the atmosphere and upon the flow of streams. It therefore regards the forests as having an intimate connection with the interests of agriculture and commerce, as well as with climate, and consequently with health.

The subject of forestry has only recently begun to receive attention in this country, although it has long been known and recognized abroad. The first settlers of the country found it well wooded. From the St. John to Florida the whole sea-coast was fringed with trees, and as fast and as far as the settlers penetrated inland they found the trees abundant. Indeed, after the very earliest settlement, as the tide of immigration from the old country set in with increasing strength, the difficulty was to find open space enough for agricultural purposes, and a principal occupation of the settler, for a considerable time, was necessarily that of removing the trees. As there was then little use for the trees except for house-building and for fuel, they were felled and burned in huge piles upon the field, the stumps being left until a partial decay admitted of their removal. This process of settlement prevailed, for the most part, until within the memory of those now living, when the westward-moving column of migration emerged from the woods, through which it had almost literally hewn its way, and came out upon the prairies, which were almost destitute of trees, but most inviting to the tiller of the ground, partly on that very account.

That early and protracted struggle with the forests was not calculated to engender in the

people of this country a love of trees or a strong sense of their value. On the contrary, it cheapened them in their esteem, and made them ready to sacrifice them for slight reasons. We have parted with them freely, and for small considerations. Trespass upon woodland has not been regarded like trespass upon other lands, nor visited with similar punishment. We have suffered the fires, originating in carelessness, or set, as they have been sometimes, in wantonness, to waste the forests to the extent of millions of acres annually, and have made hardly any effort to prevent such destruction.

And when, by the growth of population and the development of the country, the forests became increasingly valuable for their lumber, we have produced this in a most careless and wasteful manner. The lumber-men have culled the largest and best trees, those that could be most easily and cheaply converted into lumber, and have used only the best portions of these even, leaving the larger limbs and often parts of the trunks themselves, with all the remaining trees of inferior size or less accessible, to decay or to be burned. As the result, we have hardly anywhere, unless it be in the Pacific region of the extreme Northwest, and in some portions of the Southern States, a remnant of the grand forests which once almost covered the land, while we have practically destroyed that magnificent belt of pines which stretched from Maine to the Mississippi.

Noah Webster, writing at the close of last century, on the supposed change in the temperature of winter, after examining many authorities, ancient and modern, advances the opinion that "the weather in modern winters is more inconstant than when the earth was covered with wood, at the first settlement of Europeans in the country; that the warm weather of autumn extends further into the winter months, and the cold weather of winter and spring encroaches upon the summer; that the wind being more variable, snow is less permanent, and perhaps the same remark may be applicable to the ice of the rivers." He attributes these changes to the exposure of the ground in consequence of clearings, and the greater depth to which the earth freezes in winters.

Dr. Rush, at about the same period, expresses the opinion that the springs were colder and the autumns milder than formerly, the rivers breaking up earlier in spring and freezing later.

Thomas Jefferson, distinguished for his habit of observation, says that the snows were neither so late nor so frequent as formerly, and intimates that the summers were longer, the autumns later, and the winters shorter and lighter than in former years. These changes, which were observed to follow the clearing of lands, were not gradual and slow, but quick and sudden, in proportion to the extent of cultivation.

Volney, the French traveler, who visited our country toward the close of last century, notes the fact that changes had been observed in the climate in proportion as the lands had been cleared. Kalm, also, who traveled in America in 1849, notices a supposed similar change of climate.

But the opinions of a few individuals, however worthy of consideration, were not calculated to make any marked impression upon the country, or to lead to any practical result.

In Europe the importance of the forests has long been recognized. As they were held for the most part as the property of kings and nobles, or of great ecclesiastical and municipal corporations, the mass of the people had only certain rights in them, or servitudes as they were called, such as that of gathering firewood, or leaves for bedding, or of pasturing cattle and swine in them at certain seasons. These rights were liable to constant abuse. The peasantry would cut trees for fuel without permission, or they would cut them for the purpose of enlarging the pasturage. In these and other ways the forests were preyed upon and destroyed. But they were often destroyed as the result of the frequent wars. They would be cut down or burned as the means of driving out an enemy concealed in them, or as a means of annoyance or reprisal. Sometimes kings and nobles, and even states, when in need of money, would sell their forests or portions of them.

It should be borne in mind, however, that in old English law and in the usage of olden times the word "forest" had a different signification from what it has with us. A forest was a hunting-ground. It might have trees, or it might not. If it had, it was only incidentally, as affording shelter and rest for the game. Manwood, in his "Forest Laws," published about three hundred years ago, makes the essential characteristic of a forest that it is set apart for the conservation of game, and that if it have no game it can not be called a forest. It must also belong to a sovereign. A forest is a royal hunting-ground, and if the king makes a grant of a forest to a subject, it thereupon ceases to be a forest and becomes what is known as a "chase." Blackstone defines a forest thus: "Forests are waste grounds belonging to the king, replenished with all manner of chase or venery, which are under the king's protection for the sake of his recreation and delight."

Blount says that when William the Conqueror created what has ever since been known as the New Forest, for his recreation, as he was very fond of hunting, it "was raised by the destruction of twenty-two parish churches, and many villages and chapels and manors, for the space of thirty miles together." Only a small part of this extensive tract was covered with trees so as to be a forest in our modern understanding of the word.

At length it was seen that there must be a

diminished supply of fuel if dependence was to be placed upon the yearly growth of wood, and if not, then the utter extinction of the forests was threatened. It was found also that the removal of the forests from the slopes of the mountains gave rise to torrents, which carried rocks and stones into the fields and plains, and so covered them as to make them, in many cases, no longer capable of cultivation, and to oblige the inhabitants to remove. Floods and droughts were also found to be increasing.

Measures were then taken for the protection of forests, and in some of the European countries the authority and care of the government have been exercised in their behalf for several hundred years. It is more than two hundred years since the great Colbert, minister of Louis XIV, called the attention of that monarch to the dangers threatening France on account of the destruction of her forests. From the royal ordinance then issued, embodying severe laws against trespassers, dates the system of forest management and protection, which, with some changes, has continued in operation in France to the present time.

The system of forest protection in Germany dates further back, but has been much developed and improved within the past hundred years. Indeed, we may say that forestry has taken the position of a science and an art only within the present century. Inquiries and experiments, reaching through many years, have been made by most competent observers; laws of vegetable growth have been diligently investigated; the effects of climate, soil, and situation in other respects upon the growth of trees have been traced, and the effects in turn of trees upon the soil and climate, upon rain-fall and moisture. The mechanical effect of forests as barriers against harmful winds and as a protection to crops has been inquired into. These and many other things connected with tree-life and tree-growth have been made the subject of patient and scientific study.

It required but little examination to make manifest the connection of forests with rain-fall and water-supply as well as with floods and droughts. It had been noticed that, as the forests diminished, the volume of many streams, such as the Volga, the Po, the Rhine, and the Seine, were lessened, while also floods and droughts had become more frequent and torrents more destructive. Investigation showed that the leaves falling, from year to year, in the forests, and sheltered from the winds so that they are not dispersed, accumulate to a considerable depth, and, slowly decaying, form a covering of light, spongy soil, or humus, which is capable of absorbing the rains and snows. This spongy soil, in woods long undisturbed, is sometimes two or three feet in thickness. It is easy to see that such a mass would be able to hold a vast amount of water, and that the rains, instead of flowing off at once into the streams, would be detained for a time, trickling away gradually, as from a sponge, into the water-courses, or, sinking slowly into the ground and following the seams and channels in the rocks, would come out as springs and rivulets in the distant meadows. So the streams and rivers do not rise and fall with every shower, but maintain an equable flow most serviceable to man.

The removal of the forests produces a great change in the water-flow. The first effect is to dry up the accumulated leafy soil by the influence of both sun and wind, which are now let in upon it. Thus, as the leaves dry, they are wafted away by the winds or washed away by the rains. The spongy soil being thus removed, the rains or snows have nothing to detain them, but flow at once down the hill-sides into the water-courses, filling them often beyond their capacity, overflowing their banks, and carrying destruction in their course.

For the same reason that the rains pour so quickly into the streams and cause sudden and destructive floods, in those seasons when the rains are not abundant, as in summer, there being no longer a great spongy surface upon the hill-sides, the streams are diminished, and many of them disappear for a time. The fields become parched, the cattle faint, the mills stand idle, and great loss and suffering are the result.

It is to be observed that the removal of the forests affects the water-supply of streams in another way. When ground which has previously been shaded by trees is opened to the sun and wind by their removal, the evaporation of moisture from the earth is greatly increased. Hence, much of the water which would otherwise sink into the ground and supply distant springs, or find its way into the streams, is now carried into the air as vapor. The streams, therefore, have a less average depth than they would have if the forests were not removed. The Rhine, the Elbe, and the Oder, it was stated at a Forestry Congress held in Vienna in 1873, are all shallower now than in the past. It was asserted that the Elbe at Altenbrücke, in Hanover, in 1787, was 48 feet in depth at low water. In 1812 it had decreased to 46 feet 6 inches; and in 1837 a further reduction to 38 feet was indicated, making a diminution of 10 feet in half a century. The Elbe rises in Bohemia, where, until recently, the forests were under no control, and so were destroyed in the most reckless manner. The Rhine, also, has much less water than formerly. Its sources are in Switzerland, where, more than in any other country of Europe, the forests have been considered common property, and their destruction has been most unrestrained. A similar lessening of such streams as the Connecticut, the Ohio, and the Hudson is noticeable in this country. These and many other streams no longer afford such facilities for commerce as formerly. Traffic upon them has to be carried on in smaller vessels than such as were formerly employed. The lesser streams, which were used extensively for manufacturing purposes, have also become so dimin-

ished in volume that, in many cases, the mills have been obliged to lessen their production or continue it only by the introduction of steam-power.

It has been a matter of dispute whether forests actually increase the amount of rain-fall in their vicinity. The preponderance of opinion favors the conclusion that they do, though the difficulty of making the necessary observations to settle the question is so great as to forbid at present a very positive opinion. So far as forests are on elevated ground—and they are so situated to a great extent—it would seem a reasonable conclusion that more moisture from passing clouds would be condensed by them and precipitated in the form of rain than would be converted into rain upon the open and lower ground. The simple law of attraction would tend to bring the clouds into contact with them, and their elevation would also cause them to intercept more or less the clouds driven toward them by the winds. Thus we might expect a greater deposition of moisture than on the lower and cleared ground; and in accordance with this, those who have paid but little attention to the operations of nature must have noticed how the clouds seem to cling around the mountains when elsewhere the sky is comparatively clear. Mr. Colvin, in charge of the Adirondack Survey, testifies that he has often found the trees there dripping with moisture condensed from passing clouds, when there was no such condensation outside of the forest limit. Careful and repeated observations also show an increasing amount of rain-fall as one goes from the level of Lake Champlain into the region of the Adirondacks. This increase is proportioned to the elevation attained, and may be attributed in part to the forests and in part to elevation, as we know the temperature of the atmosphere decreases with elevation, and therefore the precipitation from the clouds is more copious on hills and mountains than on lower ground. But the precipitation is not to be attributed to elevation alone, for, in cases where cleared ground and forests have been on the same level, it has been found that more rain fell upon the forest than upon the open land.

But whatever may be thought as to the effect of forests in increasing the amount of rain-fall, there can be no doubt that they are great equalizers of temperature and moisture, and so have an important influence upon climate and upon the healthfulness as well as the agricultural capacity of the region where they are. No one can have visited a forest in the warm season without noticing its grateful coolness, and the moist condition of the air as compared with that of the open country. So, in the cooler season of the year, the atmosphere in the forest is warmer than that outside its limits. Lumber-men and wood-choppers find no difficulty in pursuing their work in the coldest weather. Travelers also experience great relief at once in very cold weather, whenever they can get within the shelter of the forest. The ground never freezes in the woods as it does elsewhere. This is owing very much to the protecting cover of the fallen leaves, and to the snow. But the forests are also free from the winds. The most violent winds do not penetrate them, except for a very short distance. A tempest may be raging without, but stillness will reign in the depth of the woods. The trunks and branches of the trees form an effectual barrier against all but the most violent tornadoes, and even these seldom penetrate or damage dense and well-managed forests. The shelter is often equivalent to a favorable change of latitude of several degrees, so that certain plants and grains can be cultivated which could not be grown successfully without such protection. Thus forestry takes rank as one of the most important subjects of consideration. There is not one of the European states that does not now give prominence in its system of administration to its forests.

Where the forests are not owned by the state, the interest of the latter in such as are owned by individuals or corporations is held to be so great that the state maintains the right of supervision. While the proprietors are allowed usually to manage their forest property as they please, yet the state will not permit them to manage it in a way that may be prejudicial to the general welfare. No one, for example, is allowed to cut and remove an extensive tract of forest at once, if thereby the adjacent property of others would be injured, or if the danger of floods and torrents would be increased. The state here asserts its right of eminent domain and, if necessary, takes possession of the property. In general, however, there is now such a well-established and enlightened sense of the value of forests on the part of most owners of woodland in Europe, and such confidence in the wisdom and policy of the management of forests adopted by the governments, that they are usually disposed to adopt the same and to place their property under the control of officers appointed by the state.

The Bureau of Forests in France, and the Bureau of Forest Administration in Germany, are among the most important offices of government. They form a part of the Finance Department; for, while the forests are highly regarded for their climatic influences and their conservative effects, and on this account are carefully managed, they are at the same time so managed as to be made important sources of revenue. This is especially the case in Germany, where the economic value of the forests in their direct products is the chief consideration, as in France, owing to different geographical conditions, the relation of the forests to climate and soil-protection becomes the chief interest. In Germany the forests are so managed as to produce the largest and best growth of the most valuable kinds of trees upon a given space, while at the same time they are so arranged in position and form as

to exert the most conservative influence upon climate and upon the agricultural and other interests of the state. The Germans have studied the whole subject of tree-growth in all its relations, with the utmost care, and the result is that they are able to grow three times as much timber on an acre of ground as our natural forests produce, and at the same time of better quality. The management of a forest by them is like that of one of our market-gardens compared with an ordinary farm-field. The ground is well chosen, if a new forest is to be created, or, if it is already occupied with forest-trees, it is put into the best condition to produce the largest crop. Drains are made if necessary. If the ground is not well stocked with trees, the vacant spaces are filled. If the trees are of inferior character, they are replaced as soon as possible by better ones. If improper or uncongenial trees are growing together, measures are taken, by removal and planting, to produce a proper association, so that they shall grow in harmony and without interference with one another. The sickly are replaced by such as are strong. The deformed have their habit corrected by proper pruning, or are made to give place to others. Thinnings are made at the proper time so as to admit the requisite amount of light and air to promote the most rapid and healthy growth, and to secure the proper seeding of the ground for a future crop; and finally, the trees are cut down and converted into fuel or lumber when they have attained the condition to be most valuable for these uses. Dead trees are not allowed to cumber the ground, and living trees are not permitted to remain after they have attained their growth and have ripened their wood.

Then, in reducing the forest to use, similar care is exercised. In felling the trees, caution is taken not to injure the young trees which are designed to continue the forest. Roads and canals are made to facilitate the conveyance of the timber or fuel. All the operations are performed by the agents of the government or under their constant supervision.

Germany not only produces all the lumber and fuel she needs for her own use, but is able to export a considerable quantity. And this is done from the annual yield of her forests, without trenching at all upon the substance of the forests as such. Indeed, we are told that the tendency is to increase the amount of land devoted to forests.

The management of forests in France is similar to that in Germany, which may be regarded as the system adopted substantially in all the European states. It is modified somewhat by the greater need in France of studying climatic effects.

Everywhere, in the European system, the forest tracts are carefully surveyed and mapped. Then a period of rotation is fixed—that is, the time when the trees are expected to reach their full growth and give place to their successors. This differs according to the kinds of trees grown. With the larch and birch it ranges from fifty to sixty years, and in cold regions twice that. With the locust and maritime pines, it is from sixty to seventy years; with the Scotch pine, it is from eighty to ninety; with the beech, from eighty to one hundred and forty; with the ash, from ninety to one hundred; with the chestnut, from ninety to one hundred and twenty; with the spruce, from ninety to one hundred and forty; with the fir, from one hundred to one hundred and forty, the average being about one hundred and twenty years; with the elm, from one hundred to one hundred and twenty years; and with the oak, from one hundred and twenty to two hundred. To prevent cutting off large tracts at once, and so making openings through which violent winds might gain admission, the forests are divided into blocks, only one of which is cut at a time. Of course, a first principle of any such system of forestry is the exclusion of all cattle from the forests, except where the trees are of such size as to be in no danger either from their teeth or their hoofs.

We know nothing practically of such forest management in this country. The growth of forests is only accidental and hap-hazard, and our use of them has been most wasteful and uneconomical. Cattle have been allowed free range in them, and the young trees have been eaten or broken down to such an extent that, except with the primitive growth, our forests have contained only a comparatively small number of trees, and these, on account of the wide spaces often left between them and for want of proper care, have become trees of inferior character.

To secure a class of persons competent to manage forests as they are managed in Europe, it is necessary that they should be trained for the work. Accordingly, there have been established in nearly every European country what are known as schools of forestry. With us they would be called colleges. There are nine of them in the German Empire alone, having a course of instruction varying from two years to two and a half in length. The complete and scientific character of the European forestry system will appear from a schedule of the scheme of instruction. We give, therefore, that of one of these schools, which may be fairly taken as an example of all. In this the course is two and a half years in extent. The system of instruction is divided into fundamental sciences, principal sciences, and secondary sciences. In the first are embraced general and theoretic chemistry, special inorganic and organic chemistry, applied physics and meteorology, mineralogy and geology, botany in general and forest botany in particular; microscopy, general zoölogy, with zoological excursions; geodesy, interest and rent account, wood-measuring, surveying and leveling, plan-drawing, and public economy and

finances. Under the principal sciences are embraced cultivation of forests, forest implements, protection of forests, forest technology, forest surveying, appraising forests, calculation of the value of forests and forest statistics, administration of forests and hunting, redemption of rights of usage, forest history, and forest excursions. Under the third division are included civil and criminal law and jurisprudence, construction of roads, hunting and shooting exercises.

Five hours and a half daily are given to lectures on these and some subsidiary subjects, and as much more time to the study of these subjects in private.

A considerable amount of preliminary study is requisite as a condition of admission. Capt. Campbell Walker, of the English Forestry Service in India, was commissioned several years ago by the British Government to visit the German schools for the benefit of the Indian Service, and in his report he says:

Nothing struck me as more remarkable than the extent and varied nature of the studies required from forest candidates or probationers in Prussia, and the number of years they are content to spend, first in studying and then in waiting for an appointment. The would-be Oberförster, which is the lowest of what we would call the "gazetted appointments," must, after passing certain terms at a Government school of the first class, spend a year with an "Oberförster" (over-forester) in a Revier (district or section of the forest), and then pass an examination as forest pupil, after which there is a two [two and a half] years' course at a forest academy and an examination in scientific forestry, land-surveying, etc., on passing which the pupil becomes a "Först-Kandidat"; then another two years' practical study, during at least nine months of which he must actually perform the duties of a forester; after which comes the final Government examination, on passing which he enters the grade of Oberförster-Kandidat. The difference between the two examinations is explained to be that the first tests the candidate's knowledge of theoretical forestry and cognate sciences, while the latter tests his ability to apply what he has learned and capability for employment as Oberförster and in the higher grades.

After passing the final examination, the "Oberförster-Kandidat" is employed as an assistant in the academies and control-offices, in making forest-surveys and working plans, and sometimes acting in charge of a Revier, receiving certain daily or weekly allowances while so employed. After five or six years of this probation, he may look forward to being permanently appointed.

Thus we have at least five years spent in study, and another five in probation; the former without any pay, and the latter only with meager allowances, while actually employed, before the would-be forest-officer is installed, and the time is generally much longer. Yet so great is the desire for Government service, and particularly forest service, in Prussia and in Germany generally, that there is no lack of competitors.

Positions in the forestry service are permanent and are considered highly honorable, being often sought by persons of rank. Capt. Campbell says again:

Nothing that I can say or write can convey too high an idea of the attainments and thorough knowledge of their work possessed by German forest officers of all grades. A very little time served to convince me that the practice of the German foresters was as good as, if not better than their theory, and that they were in fact perfect masters of their duties in all their details. An Oberförster, and even many of the Försters and overseers, can tell the name, local and botanical, of every tree, shrub, and plant, classify it, and state its uses; name and classify every beetle and insect in the forest, and know whether they are harmless or destructive to trees, in what shape they do damage, and what are the best known preventive measures; inform you of the nature of the soil, and to what period the formation belongs; what trees will grow best, and why. All this is known thoroughly, theoretically, and practically.

Then as to the Revier (section), the exact yield, rate of growth, and annual increase in value of each block is thoroughly known and can be put down at any moment in figures by the Oberförster, who can tell at the commencement of each year how much timber he is going to cut and sell, and from what parts of the forest it is to come, how many acres have to be partially cleared for natural reproduction, planted, sown, thinned, or planted up. The mere details of all this are left, as a rule, entirely to the subordinates, who thoroughly understand them.

Such is the system of forestry established throughout Europe. The governments there, without exception, guard their forests with jealous solicitude, and the people, to a great extent, have a corresponding regard for them, and sense of their value. Schools of forestry are established from Spain to Finland, and instruction on the subject is carried in some countries into the common schools. The United States Government, though possessing in its forests a property more valuable a hundred-fold than all its mines, has never counted them as of any worth. They have hardly been considered in connection with the public lands, which have been sold at a merely nominal price, and oftener have been given away to great corporations or whoever almost would take them. As a source of revenue, the forests have never been taken into account, while Prussia, with a forest area not exceeding the area of the single State of Indiana, receives an annual income of $6,000,000 above all her expenses of management. Our forests have not, probably, returned to the Government the cost of surveying them, if we can be said to have surveyed them at all. Trees which had been growing from one hundred to five hundred years have been cut down as though they were but mushrooms, and no provision has been made to replace them. The forests, that stood as sentinels to guard the streams of commerce and manufacturing industry and to insure fertility to our fields, we have swept away recklessly. Thus it has come to pass that we are beginning to suffer great evils, and greater are threatening us. The character of our streams, in many parts of the country, has been greatly changed. The amount of water flowing in them has been lessened or made fitful, and therefore lessened for all practical uses. We have floods and droughts where formerly the rivers were regular in their flow.

We have come to a point where the subject of forestry becomes one of great practical importance, and though we differ so much, in some respects, from the people of Europe, here

is a subject in regard to which we can take most valuable lessons from them. Whether forests actually increase the amount of rainfall may still, possibly, be matter of question. But the favorable action of masses of trees upon health and comfort, and their influence in protecting crops from injury, and thereby increasing the returns of the husbandman—in regard to this there can be no longer ground for debate.

It has been estimated by careful and scientific observers that the earth is in the best condition to subserve human welfare and comfort only as about a fourth part of the land is in a wooded state. The proportion may be allowed to vary from this somewhat, according to peculiarity of situation. England, for example, in a cool, northern latitude and surrounded by water, has such a moist atmosphere that she requires but a small forest area as compared with warmer and inland countries. The forest areas of various European countries, as given by the most recent official statistics, are as follow:

COUNTRIES.	Acres of forests.	Per cent. of area.
Russia	476,710,000	40·0
Finland	27,170,000	
Sweden	43,895,430	34·1
Norway	18,920,509	
Austria	43,309,411	29·4
Germany	34,969,791	26·1
Turkey	20,508,280	22·2
Roumania	4,940,000	
Italy	14,228,975	22·0
Switzerland	1,788,786	18·0
France	22,687,716	17·3
Greece	1,721,029	14·3
Spain	7,838,647	7·3
Belgium	501,402	7·0
Holland	569,160	7·0
Portugal	1,165,420	5·1
Great Britain	3,106,824	4·1
Denmark	464,360	3·4
Total	725,985,743	29·5

It will be seen from this table that Europe, taken together, has now a sufficient proportion of woodland, and that it is fairly distributed according to the special situation and needs of the different countries. Spain is probably suffering most from lack of forests. Russia is well wooded only in the northern portion, and in Sweden and Norway the forests are being cut off so rapidly, for exportation, as to cause alarm.

The forest area of the United States is large enough in itself, but it is unevenly distributed. The northern portion, originally well wooded, and with that most valuable lumber-tree the white pine, has so far been denuded that serious results have already followed. The southern portion of the country is still heavily timbered, and much of its wooded area might be taken for agricultural purposes without disadvantage to any interest, if a proper selection could be made. But already extensive inroads have been made upon the forests of the South, and the process of destruction is going on with rapidity and carelessness. In the western portion of the country, with the exception of the Pacific coast-region, there is a great scarcity of forests. There is the greatest need of husbanding what trees are to be found here, and of planting extensively on the prairies and on other sections which are destitute, or nearly so, of any tree-growth. Yet it is on this comparatively treeless region that the trees are being destroyed most recklessly. Much of the agricultural land can be cultivated profitably only by means of irrigation. But the destruction of the forests is continually lessening the supply of water in the streams upon which irrigation depends.

It is in this part of the country that the lands still owned by the Government are principally situated, and the best as well as the most desirable opportunity is offered to put in operation an effective system of forestry. The Government and great corporations are specially adapted to put in operation and carry on such a system of forestry as is needed. Those who hold only small parcels of land can not, if they would, establish a proper system. And where there are small tracts of woodland already existing, or if any shall be planted by individual landholders, there is no certainty that they will not be destroyed at any time.

We have taken a step in the right direction in establishing the Yellowstone National Park in Wyoming; and the President, in his last message, recommended that other portions of our woodlands, in which are the head-waters of some of our principal streams, should be preserved in their forest condition. We may well go further than this. Why should not the Government preserve all or nearly all its remaining woodlands, withdrawing them from sale at least until it can be ascertained, by careful and adequate examination, what portion is needed for agricultural use and can be spared for that purpose, then maintaining the rest in forest condition for the perpetual benefit of the country, and drawing from it at the same time a perpetual revenue?

The separate States, so far as they still possess lands, might well pursue a like course, and, where they have none, might encourage the landholders to engage in forest-planting. The establishment in some of our Western States of Arbor-Day, or tree-planting day, has been attended with the happiest results. It has already occasioned the planting of many millions of trees. There are in many, if not in most, of the States, considerable portions of land unfit for agricultural purposes, but which would be remunerative if occupied with trees. Most mountain-slopes and high hills are of this sort, as are many tracts of stony and swampy land on lower situations. The State might offer premiums for the best plantations of trees on such ground, or might exempt forest plantations from taxation for a certain number of years, until they should begin to yield an income from thinnings. As auxiliary to this, experiment stations would naturally be estab-

lished, where, under competent directors, various methods of tree-planting and culture would be tried, and different kinds of trees would be planted, and their adaptations to soil and climate tested, and thus their comparative merits ascertained.

At such experiment stations would naturally be trained up a class of men who would be qualified to be intrusted with the management of the public forests. In process of time, with the establishment of a proper forestry system, there would come into being forestry schools, essentially like those of Europe, though modified by our peculiar circumstances.

The history of forestry in this country is briefly this. A few examples of the cultivation of forest-trees are to be found reaching back as far as a hundred years. But about forty years ago, the Messrs. Fay made the experiment of planting between 300 and 400 acres of poor stony or sandy land in Eastern Massachusetts with forest-trees. A few others have followed their example, and reclaimed in this way considerable tracts of the worthless sand-barrens of Cape Cod. Occasional plantings on a smaller scale have been made elsewhere, but it is only within a few years that the trees on the earliest of these plantations have reached a stature to show the result of the experiments, or call attention to them. Most of these experiments have been successful and encouraging.

About twenty years ago, the late Hon. George P. Marsh, who had long been a resident abroad as the representative of this country in European states, published "The Earth and Man, or Physical Geography as modified by Human Action." One of its longest chapters was devoted to a discussion of the subject of forests and their influence. His work, a later edition of which bears the title "Man and Nature," is the best treatise on the subject in the English language, and is constantly referred to as an accepted authority even by writers in Germany and France, where the literature of forestry is very voluminous.

Ten years subsequent to the publication of Mr. Marsh's book, the subject of forestry was taken into consideration by the American Association for the Advancement of Science, and a memorial was sent by that body to Congress, calling attention to the rapid destruction of our forests and the dangers threatening the country in consequence, and asking for some appropriate legislation on the subject. In 1876 Congress directed the Commissioner of Agriculture to ascertain the facts in regard to our forests, the best means of preserving and renewing them, the influence of forests upon climate, and the system of forest management in use in other countries. As the result of this action, agents have been employed by the Department of Agriculture in making investigations, and their reports have been published. These reports contain a large mass of information, and have been widely distributed.

A Forestry Association was also formed a few years ago, which, in 1882, was merged in a Forestry Congress, instituted at that time. This body, composed of persons in this country, and also in Canada, who are interested in forestry, has held three sessions, the last of which was at St. Paul, in August, 1883. Papers relating to forestry were read, and discussions ensued. The discussions and recommendations have been widely published, and have led to important legislative action in several of our own States and in the Dominion of Canada. During the past year a State Forestry Association has been formed in Ohio, and measures have been taken to establish experiment stations in that State. Commissioners of forestry have also been appointed in several of the States, and instruction in forestry is given in connection with some of the agricultural colleges.

But perhaps the most important indication of an awakened interest in forestry is seen in the recent movement for the preservation of the great Adirondack forests in New York. Mr. Marsh, in his book already alluded to, called attention to these forests, and urged the importance of their preservation, in order to maintain the proper flow of that great highway of commerce, the Hudson river, as well as on other accounts. But his words were unheeded, or, if heeded, they resulted in no efficient action until recently. But at last public attention has been aroused to such an extent that the Legislature of the State made a small appropriation a year ago for the purchase of a portion of the Adirondack lands with a view to reclothing them with forests. More recently a movement has been made, led by the Chamber of Commerce of New York, designed to secure further legislation on the subject, and an appropriation sufficient to purchase such an amount of land as, in connection with what the State now owns, will insure the protection of the head-springs of the Hudson and other important streams.

Forestry is receiving increased attention also in Great Britain, on account of its bearings upon her Indian and Australian possessions. The destruction of the forests there has gone on with alarming rapidity. India has actually imported railroad-ties from Norway and Sweden, because her accessible forests had been stripped of the proper timber for such use. The attention of the British Government has been aroused by this condition of things, and measures have been taken for the preservation of the remaining forests and the planting of new ones. Though having no forest schools of her own in which to train up persons competent to direct the management of forests, the Government for several years has sent a number of pupils annually to the French and German schools, to be trained for the Indian and Colonial service. The reports for the past year show a very encouraging condition of the forests both in India and Australia. Large

areas have been placed under efficient protection, and considerable tracts of denuded land have been planted. Quite recently instruction in forestry has begun to be given in connection with one of the schools of technology in London, and there is some prospect of the establishment of a forestry-school in England.

FRANCE, a republic in Western Europe. The republic was proclaimed Sept. 4, 1870. The Constitution was adopted Feb. 25, 1875, by the National Assembly elected in 1871. The Chamber of Deputies is elected by universal suffrage under the *scrutin d'arrondissement*, which was adopted Nov. 11, 1875. Each arrondissement is represented by a deputy, and, if its population is in excess of 100,000, by additional deputies for each 100,000 or part of 100,000 beyond that number. The number of electors in 1881 was 10,179,845. The number of deputies is 557. The Senate is composed of 300 members, 75 of whom are chosen for life, the Senate electing the successors of deceased members. The remaining 225 are elected, 75 every three years, by the departments and provinces. They are chosen by senatorial electors, elected to represent each of the communes and municipalities, together with the members of the Council General and the deputies of the department, who possess votes *ex officio*. The Chamber of Deputies is elected for four years. The National Assembly meets annually on the second Tuesday in January, and must remain in session five months. The President of the Republic can call an extraordinary session, and is compelled to do so if one half of the members of each Chamber unite in demanding it. The two Chambers possess equal and concurrent powers of legislation; but all financial measures must originate in the Chamber of Deputies. The executive head of the republic is the President, who is elected for the term of seven years by a majority of the deputies and senators in joint session. The President has the disposal of the military forces, makes all appointments, civil and military, and can propose legislation; but all acts must be countersigned by the ministers, who are appointed by the President, and are responsible to the Chambers.

The Government.—The President of the Republic is François P. Jules Grévy, born in 1813, who was a member of the Constituent Assembly of 1848, President of the Assembly from 1871 to 1873, and President of the Chamber of Deputies from 1876 to 1879; elected January 30, 1879.

The Cabinet, appointed February 21st, is composed as follows:

President of the Council and Minister of Public Instruction, Jules Ferry, who was born at Paris in 1823, admitted to the bar in 1848, member of the Government of National Defense (1870–'71), Prefect of the Seine Department (1871–'72), Embassador to Greece (1872–'73), Minister of Public Instruction and Fine Arts (1879–'80), President of the Council (1880–'81), and Minister of Public Instruction in 1882.

Minister of Foreign Affairs, Paul Amand Challemel-Lacour, born in 1827, Professor of Philosophy at Pau and Limoges (1849–'51), expelled from France in 1852, returned in 1859, Prefect of Rhône and *Commissaire* of the Republic (1870), delegate to the National Assembly (1872), Senator (1876), Embassador to Switzerland (1879–'80), to England (1880–'82).

Minister of the Interior, Pierre Marie Waldeck-Rousseau, born in 1846, advocate, deputy since 1879, Minister of the Interior in Gambetta's ministry.

Minister of Finance, P. Paul Emmanuel Tirard, incumbent in the two preceding ministries, born in 1826, engineer and merchant, Minister of Commerce (1879–'81), reappointed Jan. 31, 1882; appointed Minister of Finance Aug. 7, 1882.

Minister of Justice, Félix Martin Feuillée, born in 1830, deputy since 1876, Under-Secretary of the Interior in 1879, and of Justice in December, 1879.

Minister of Commerce, Anne Charles Hérisson, born in 1831, advocate, deputy (1878), held over from the Duclerc Cabinet.

Minister of Agriculture, Félix Jules Méline, born in 1838, lawyer, deputy in 1872 and 1876, Under-Secretary of the Interior in 1879.

Minister of War, Gen. Thibaudin, entered the army in 1848, lieutenant-colonel of cavalry (1868), brigadier-general (1877), general of division (1880), appointed Jan. 31, 1883.

Minister of Marine and the Colonies, Charles Marie Brun, born in 1821, engineer by profession, Director of Naval Construction (1875), elected deputy (1871), senator (1876).

Minister of Posts and Telegraphs, Louis Cochery, born in 1830, Under-Secretary in the Ministry of Finance (1873–'79), first appointed Feb. 5, 1879.

Minister of Public Works, David Raynal, born in 1840, deputy (1876), Under-Secretary of Public Works (1880), head of the same ministry in the Gambetta Cabinet (1881).

In August M. Brun resigned on account of ill-health, and was succeeded by Admiral Peyron, Maritime Prefect of Toulon.

In October Gen. Thibaudin handed ever his portfolio to Gen. Campenon. The latter was a staff officer at the time of the *coup d'état*, and was exiled for his republican opinions. He went to Tunis and reorganized the army of the Bey, but returned soon to France and served in Algeria, in Italy, and in China. He was Minister of War under Gambetta.

Area and Population.—The area of France is 528,572 square kilometres. The population returned in the census of 1881 was 37,672,048. In 34 of the 87 departments there was a decrease in population between 1876 and 1881, attributed to a decline in the number of marriages. The excess of births over deaths in France amounted to 280,000 per annum between 1820 and 1830, falling to 51,200 between

1850 and 1860, and after a slight recovery declining again to 84,206 in 1869. In 1870 there was an excess of deaths amounting to 103,894, and in 1871 to 444,889, succeeded by a surplus of births amounting to 172,937 in 1872, and continuing in the following years.

The number of foreigners in France increased from 379,289 in 1851 to 1,001,110 in 1881. The Belgians increased from 128,103 in 1851 to 374,498 in 1876; the Italians, from 76,539 to 165,313; the Swiss, from 25,485 to 50,203; the English, from 20,357 to 30,077; 545,495 of the foreign population resided in Paris, Marseilles, and in the district of Lille.

In 1872 98 per cent. of the population were Catholics, 1·6 per cent. Protestants, 0·14 per cent. Israelites, and 0·23 of no declared faith.

The division of the population into professional classes was as follows in 1881:

OCCUPATION.	Number.
Agriculture	18,204,799
Industry	9,324,107
Commerce	3,843,447
Transportation and navigation	803,741
Public service	552,851
Liberal professions	1,629,763
Living on their incomes	2,143,173
Of no profession	727,533
Occupation unknown	173,816
Total	37,405,290

Algeria.—The area of Algeria is 667,065 square kilometres; that of the three departments of Algiers, Oran, and Constantine, 318,384 square kilometres. The population in 1881 was 3,310,412, or 10 per square kilometre of the three departments. The population comprised 233,937 French, 35,665 naturalized Israelites, 2,850,866 native Mussulmans, and 189,944 foreigners; of the latter number 114,320 were Spaniards, 33,693 Italians, 15,402 English and Maltese, 4,201 Germans, and 22,328 of other nationalities. The population of the principal towns in 1881 was as follows: Algiers, 70,747; Oran, 58,530; Constantine, 38,379; Bône, 21,974; Tlemçen, 18,376; Philippeville, 15,580.

The net immigration in 1880 was 17,436; in 1879, 23,304.

In the budget for 1879 the total receipts are stated as 37,181,872 francs, and the total expenditures as 35,630,590.

The returns of the general commerce in 1879 give the imports as 272,100,000 francs, of which 164,400,000 francs came from France, 13,927,000 francs from the Barbary states, 8,249,000 francs from Spain, and 6,610,000 francs from England. The exports were returned as 151,900,000 francs in amount, of which 123,838,000 francs went to France, 17,875,000 francs to Spain, and 13,516,000 francs to England. Natural products constituted 66,448,000 francs of the total value of imports and 136,961,000 francs of the exports; manufactured articles, 236,987,000 francs of the imports and 31,874,000 francs of the exports.

The railroad mileage in the beginning of 1883 was 1,531 kilometres, besides 206 kilometres in Tunisian territory and 40 kilometres of industrial lines. The receipts in 1880 were 12,139,439 francs; in 1881, 14,475,352 francs; in 1882, 16,405,552 francs.

The length of telegraph lines in 1882 was 5,832 kilometres; of wires, 13,885 kilometres.

In order to procure land for the colonization of Algeria by a European population, which will give security to the French dominion and develop the agricultural resources of the country, the Government has been obliged to proceed to the expropriation of the tribal lands of the nomadic Arabs and a part of those of the sheep-growing Kabyles of the mountains. Critics of the Government complain that the proceeding is a breach of the capitulations of 1830, which insured the preservation of property-rights as well as religious protection to the native Mohammedans. It is not intended to take the lands without compensation, nor to reduce the grazing-lands of the nomads below the limits of their own requirements. The scheme was postponed by the vote of the Chamber in the final action on the budget.

Tunis.—A French protectorate was instituted over the regency of Tunis by the treaty of Kasr-el-Said, signed May 12, 1881. The decrees of April 22, 1882, for the enforcement of the treaty provide that the different ministries in France shall control the corresponding services in Tunisia, imparting their instructions to the resident minister in Tunis through the medium of the Bureau of Tunisian Affairs, after first communicating them to the Minister of Foreign Affairs, who examines them with regard to their effect on international relations.

The reigning Bey is Sidi Ali Pasha, who succeeded his brother, Mohammed-es-Sadok, Oct. 28, 1882. His Prime Minister is Mohammed Khasnadar. The French Minister Resident is P. Cambon.

The area of Tunisia is about 116,348 square kilometres. The population is about 2,100,000, of whom 45,000 are Israelites, 25,100 Catholics, 500 Greek Catholics and Protestants, and the rest Mohammedans. The capital, Tunis, contains 125,000 inhabitants.

The budget for 1874–'75 provided 5,577,625 francs for the service of the public debt, and only 151,325 francs for the general administration of the Government. The foreign debt was reduced to about 125,000,000 francs by the European Financial Commission, which was charged with the complete administration of the finances. The Bey engaged to reserve certain revenues, notably those of the customs, for the payment of the interest and eventual extinction of the debt. The revenue was augmented by increasing the general tariff on imports in June, 1872, from 3 to 8 per cent. The French, after the occupation, did not interfere with the Finance Commission, which has been working since 1869. But in 1883 a convention with the Bey was ratified, whereby the financial administration should be transferred to France, and the public debt guaranteed by her. England withdrew her objections. Taxes have been collected more efficiently under

French supervision than under native rule. The revenue and expenditure are reported in a statement of the president to have been for the year ending with June, 1882, 12,562,750 and 9,760,000 francs respectively. Of the expenditure the interest and administration of the debt are given as 7,530,100 francs. The cost of the general administration of the country is stated at about 1,750,000 francs more than before the occupation. The cost of maintaining the French army of occupation is given in an extraordinary budget as 1,500,000 francs. The expense is borne partly by Tunis and partly by the French Government.

The Bey has a regular army of 2,000 or 3,000 men and an irregular army of some 10,000, comprising 3,000 *Karouglis*, the descendants of the Turkish Janizaries, 5,000 zouaves, 1,500 mounted *spahis*, and 500 gendarmes. The army is deplorably equipped. The French have organized twelve mixed companies, half of French and half of native soldiers.

The French army of occupation numbers 11,000 infantry, 1,600 cavalry, and 800 artillery with 12 batteries.

The foreign commerce is carried on mainly with Italy, France, and Great Britain. The imports average about $5,500,000, the exports $6,500,000. The chief articles of export are alfa, or Esparto-grass, for making paper, which is shipped largely to Great Britain, and olive-oil; after which come olives, sponges, legumes, wool, cattle, salted fish, dates, fezes, wax, etc. There were about 166 miles of railroad and 600 miles of telegraphs July 1, 1882.

The administration of the country is practically under the direction of the French resident, or *chargé d'affaires*. The French Government appointed numerous commissioners to examine into the various details of the administration and devise plans of improvement. The country is divided into twenty-two sections, each of which is under the command of a French military officer. In August, 1882, French judges were appointed to supersede the consular courts, but before they could enter upon their functions the consent of the great powers to the abrogation of the capitulations was necessary. Great Britain objected, but after the Egyptian occupation consented, in 1883.

The Colonies.—The statistics of the other colonies and protectorates of France are summarized in the following table, giving their area in square kilometres, population, the value of their foreign commerce in 1880 in thousands of francs, and their budgets, as far as reported, for 1882, in thousands of francs:

COLONIES.	Area.	Population.	Imports.	Exports.	Budgets.
Asia:					
French India	508	283,022 (1880)	5,347	7,658	1,721
Cochin China	59,458	1,550,497 (1880)	40,197	51,610	16,568
Cambodia	83,861	1,500,000	.....	.....	.....
Africa:					
Senegambia	250,000	192,924 (1879)	16,488	25,349	2,356
Gold Coast and Gaboon	2,800	3,000	7,000	1,412	.....
Réunion	2,511	180,814 (1880)	35,499	28,572	4,950
Mayotte	366	.....	1,118	2,278	241
Nossi Bé	298	8,155 (1880)	2,369	6,416	229
Ste.-Marie de Madagascar		7,177 (1880)	182	110	.....
America:					
Guiana, or Cayenne	121,413	27,383 (1880)	7,987	607	1,811
Martinique	987	166,100 (1880)	24,775	28,546	3,858
Guadeloupe and dependencies	1,870	192,735 (1880)	23,842	27,216	4,625
St.-Pierre and Miquelon	235	4,916 (1880)	9,159	11,725	298
Oceania:					
New Caledonia and dependencies	19,950	68,584 (1881)	7,904	2,757	1,915
Tahiti and dependencies	3,658	25,247 (1881)	8,162	3,343	1,000

The subventions from the French Government amounted to 1,253,000 francs, leaving 37,799,000 francs as the total revenue raised in the colonies. If the total colonial budget of 30,696,000 francs and credits entered in the naval budget are added, the total colonial expenditures amounted to 98,495,000 francs. The total area of the colonies and protectorates, exclusive of Algeria and Tunis, is 547,912 square kilometres; their population, 4,222,654.

The tonnage entered at French ports in 1882 was 12,448,385, 4,024,296 French and 8,424,089 foreign, as against 11,882,471 tons, 3,919,562 French and 7,962,909 foreign, in 1881; tonnage cleared, 7,852,615, 3,577,567 of French and 4,275,048 of foreign registry, as against 7,539,022 tons, 3,354,915 French and 4,184,107 foreign, in 1881.

The number of vessels, tonnage, and number of crews in the French merchant marine at the beginning of 1881 were as follow:

VESSELS IN—	Number.	Tonnage.	Crews.
Fisheries	9,987	184,983	54,928
Coast trade	2,899	111,599	9,654
Ocean commerce	1,743	643,406	24,843
Post-service and yachts	929	29,310	2,972
Steam	652	277,759	12,564
Sail	14,406	641,539	79,833
Total, 1880	15,058	919,298	92,397
Total, 1879	15,083	932,358	94,183

Commerce.—The following table exhibits the annual value of the special commerce from 1877 to 1882, and the average for the three decennial periods preceding, in millions of francs and tenths of millions:

YEAR.	Special imports.	Special exports.
1882	4,972·1	3,596·2
1881	4,946·4	3,612·4
1880	5,083·2	3,467·9
1879	4,595·2	3,281·3
1878	4,176·2	3,179·7
1877	3,369·8	3,436·3
1867–'76	3,407·5	3,306·4
1857–'66	2,200·5	2,430·1
1847–'56	1,071·1	1,223·7

The total value of the general imports in 1879 was 5,579,300,000 francs; of the general exports, 4,269,600,000 francs. The general commerce of 1882, which includes the transit trade and goods imported for re-exporting free of duty, amounted to 2,070,099,000 francs, an increase of 1,100,000 francs, as compared with 1881.

The imports and exports of specie from 1877 to 1882 were, in millions and tenths, as follow:

YEAR.	Imports.	Exports.
1882	411·3	349·9
1881	363·2	302·2
1880	295·9	470·2
1879	333	424
1878	543	189
1877	683	142

The participation of the principal commercial countries in the special commerce of the year 1880 was as follows, in millions of francs and tenths of millions:

COUNTRIES.	Special imports.	Special exports.
Great Britain	668·5	910 6
United States	781·0	332·1
Belgium	457·4	465·0
Germany	438·2	362·9
Italy	398·3	191·3
Spain	343·2	158·7
Russia	314·1	34·0
Switzerland	115·1	220·4
Argentine Republic	143·9	84·6
Turkey	133·5	45·5
Austria	124·1	28·5
Brazil	52·4	76·2
Other European countries	223·7	105·4
Other American countries	189·2	157·1
Asia, countries in	313·5	17·0
Africa, countries in	124·2	60·1
Other foreign countries	23·4	8·9
Algeria	126·9	161·8
Other French colonies	117·6	57·8
Total commerce, 1880	5,032·2	3,467·9

The following table presents the exports and imports of 1881 and 1882, classified according to the nature of the products, in millions of francs and tenths thereof:

CLASSES OF COMMODITIES.	1881.		1882.	
	Imports.	Exports.	Imports.	Exports.
Articles of consumption	1,918·1	917·7	1,901·5	918·2
Raw materials	1,851·3	646·7	1,907·7	663·4
Manufactured articles	508·4	1,654·1	582·6	1,670·9
Miscellaneous products	560·6	343·0	590·2	343·6
Total merchandise	4,863·4	3,561·5	4,972·0	3,596·1
Precious metals	363·6	302·1	411·3	349·9
Total special commerce	5,227·0	3,863·6	5,383·3	3,946·0

In the first class the imports of cereals amounted in 1882 to 596 millions, against 574¼ millions in 1881, the exports to 100¾, against 131 millions; fermented drinks were imported to the value of 399, against 406 millions, and exported to the value of 325¼, against 329 millions; the net imports of tobacco were 25, against 27½ millions in value; of seeds, fruits, etc., 155, against 175½ millions; of animals and animal food products, 86½, against 126½ millions. In the class of raw materials, the imports of fuel amounted to 183, against 173 million francs; of raw metals, to 136, against 133 millions; of skins, hair, and leathers, to 224¾, against 215 millions, and the exports to 218, against 202 millions; of textile materials, to 986½, against 1,032½ millions, and exports to 378¾, against 377 millions; of timber, etc., to 285, against 241 millions. The increase in the value of manufactured articles imported was principally in machinery and metals and in yarns. The exports of pottery and glass were 40¼, against 39½ millions in value; of machinery and metal manufactures, 151, against 146½ millions; of leather manufactures, nearly 180, against 179 millions; of yarns, about 48 millions in both years; of textile fabrics, clothing, etc., nearly 904½, against 817½ millions; of paper and paper manufactures, about 25 millions in both years; of wood and straw products, about 43, against 53 millions; of jewelry and works of art, 241, against 300 millions; of books, etc., 24½, against 28 millions.

The exports for the first eight months of 1883 showed a falling off of 82 millions as compared with the same period in 1882, while the imports showed an increase of 112 million francs. There was an increased importation of articles of food and a continued increase in the imports of raw stuffs, plant, and half-manufactured goods. There was a decrease in the exports of manufactured products amounting to 80 million francs, which was largely due to the disturbances in Tonquin and Madagascar, causing importing merchants in England and other countries to withhold orders, in expectation of a decline of the market.

The question whether France has entered upon a period of commercial decline has recently been a subject of controversy among French economists. In the ten years from 1873 to 1882, the imports increased in total value from 3,554 to 4,972 million francs, while the exports decreased from 3,787 to 3,596 millions. The imports of corn and wine increased from 257 to 876 millions; manufactured products from 384 to 673 millions, or 75 per cent., the articles in which the increase was greatest being machines and boilers, tools, woolen and cotton fabrics, and glass. The export of French manufactures shows some increase since 1878, but is still 171 millions behind the amount in 1873. The decrease is mainly in turned goods, toys, brushes, and silk fabrics. In the first three, Germany and

Austria compete with the Parisian industry, which suffers an annual loss of 70 millions in the value of the exports. The value of silk-manufactures export was 176 millions less than in 1873. In woolens, on the other hand, there was an increase. Those who belong to the free-trade school take the more hopeful view of the situation, and believe that the removal of tariff restrictions would open foreign markets again to the products of French industry. The increase in imports they consider an evidence of accumulated wealth invested abroad, and compare France in this respect with Great Britain and Belgium.

The destruction of the vineyards by the phylloxera was undoubtedly a heavy blow to the prosperity of France. There are indications, however, that the worst period is past, and that this new enemy of the vine will be brought under control like the oidium, which was still more destructive than the phylloxera, reducing the vintage, when it first attacked the vines in 1853–'56, to 15,000,000 and even 10,000,000 hectolitres. French viticulture survived this severer stroke, and gradually recovered, until in 1875 the wine-harvest attained the unprecedented figure of 83,000,000 hectolitres.

The industrial expansion of Germany, Austria, Italy, the United States, and other countries, encouraged by protective tariffs, is the element with which the manufacturing industries of France have to reckon. The energetic band of free-trade advocates in France argue that the adoption of restrictive and retaliatory measures by their country has greatly contributed to the difficulties of French industry; that the effect of refusing to receive the products of other countries in payment for French exports is to close those markets against French products, and that a return to the principles of the Cobden treaty would be the best means to enable the highly finished and therefore profitable products of French skill to maintain their position in the world's market. The industrial development of Central Europe falls in a large measure within the most recent commercial period. The effect of this new competition is most keenly felt by French manufacturing interests. In the development of the factory system, and the organization of production on a great scale, Germany has made greater strides than France. As long as labor is cheaper in Central and Southern Europe it is only the qualities of taste, art, and finish which enable French manufactures to hold the foreign markets, qualities which are least in demand in times of agricultural disasters and industrial stagnation, like those through which Europe has recently passed. The effect of the industrial development in Germany is seen in the returns of French foreign commerce, according to which an excess of French exports to Germany of 42,000,000 in 1876 changed to an excess of nearly 75,000,000 on the other side in 1878; between which year and 1881 the French exports to Germany increased from 343,750,000 to 383,000,000 francs, and German imports into France at an equal pace from 418,333,000 to 454,375,000. The exports of silk manufactures and dress materials to Great Britain fell from 250,000,000 in 1865 to 114,000,000 in 1881; those to Germany from 23,000,000 to 21,000,000, while imports of German silks increased from 1,000,000 to 12,000,000. The exports of articles of dress and leather manufactures to the United States declined 30 per cent. in the same period.

The production of wine in France, which increased from 29,000,000 hectolitres in 1880 to 34,000,000 in 1881, fell off in 1882 to 30,886,352 hectolitres, 16,054,830 hectolitres below the average crop of the previous ten years. The vines suffered from the extension of the phylloxera and from the long prevalence of bad weather. The vineyards destroyed by the phylloxera have been to a considerable extent replanted with American vine-stocks, which are vigorous enough to resist the parasite.

The phylloxera appeared in 1882 for the first time in Seine-et-Marne, Cantal, Indre-et-Loire, Vendée, and Haute-Vienne, making altogether fifty departments visited by the plague. The area attacked comprised nearly half the vine-lands of these departments. The vine-growers at first opposed the official investigation and concealed the symptoms of the malady. Subsequently they adopted the plan of prevention invented by Pasteur, but no system of comprehensive treatment, either official or co-operative, could be agreed upon. Some twelve thousand wine-raisers formed combinations for common action.

Posts and Communications.—The number of post-offices in 1881 was 6,158, against 5,913 in 1880; number of letters carried in 1881, 569,910,358; postal-cards, 82,224,239; letters with declared valuable inclosures, 11,327,262; journals, 345,364,572; circulars, etc., 378,075,770; total deliveries, 1,336,902,201; receipts in 1880, 112,683,458 francs; in 1881, 123,472,000 francs; expenses in 1880, 79,431,712 francs; in 1881, 81,898,988 francs.

The state telegraph stations in 1881 numbered 5,481. The length of lines at the end of that year was 73,878 kilometres, comprising 69,638 kilometres of overhead lines with 216,878 kilometres of wire, 685 kilometres of subterranean lines with 12,521 kilometres of wire, 3,452 kilometres of submarine lines with 3,663 kilometres of wire, and 103 kilometres of pneumatic tubes; total length of wires, 233,057 kilometres. The number of internal telegrams in 1881 was 17,514,147; of international, 1,952,017; receipts in 1880, 25,612,399 francs; expenses, 31,141,178 francs; receipts in 1881, 29,095,048 francs; expenses, 32,222,642 francs.

There were in operation on Jan. 1, 1883, 26,287 kilometres of railroad lines of general interest, comprising 2,084 kilometres of state lines, 22,282 of lines of companies, and 1,921 of non-subventioned lines, besides 2,305 kilometres of lines of local interest, and 212

kilometres of industrial lines; total length of lines, 28,804 kilometres.

By the law of June 11, 1842, the work of building railroads was left to companies, superintended, and when necessary assisted, by the state. Two classes of lines were distinguished from each other—the one, called the old net-work, consisting of the principal avenues of traffic; and the other, the new net-work, of secondary routes of doubtful profitableness, constructed for public utility. To the latter 4 per cent. interest and 0·65 per cent. for a sinking fund were guaranteed. The French railroads are almost entirely in the hands of six great companies—the Paris-Mediterranean, owning 4,488 kilometres of the old and 1,543 of the new net-work; the Paris-Orleans, owning 2,017 of the old and 2,342 of the new; the Northern, possessing 1,311 kilometres in the first system and 668 of guaranteed; the Western, with 900 and 2,216 kilometres respectively; the Southern, with 796 and 1,518; the Eastern, with 754 and 2,007. Of the 10,315 kilometres in the old net-work the remaining 54, and the remaining 3,245 out of the 13,539 kilometres which constitute the new net-work, belong to other companies.

Railroad Conventions.—The most important transaction of the session, which closed August 2d, was the conclusion of the long-deferred conventions with the railroad companies. The arrangements involve the virtual abandonment of the Freycinet project for nationalization of the whole system of French railroads and its completion by the state. The reasons given for departing from this cherished and already partly executed scheme were, that the state of the public finances in the present conditions of the money market would not permit of the necessary financial operations and the simultaneous conversion of the public debt on favorable terms. The transfer of the railroads to the Government would require no capital outlay; but the execution of the Freycinet scheme of connecting and strategic roads at the sole cost of the Government would necessitate the raising of new loans. The conventions require the six great companies to construct about 9,000 kilometres of new railroads within ten years, about 1,000,000,000 francs of the cost to be borne by the companies, and the remaining 750,000,000 or 800,000,000 francs by the Government. The French railroad companies are influential because their enormous capital is in few hands, in those of the magnates of finance, a circumstance which subjects them to jealous popular animosity, and any Government and Chamber which has dealings with them to suspicion. Notwithstanding the stringent control preserved by the Government, they have succeeded in exacting disproportionate rates for the poorest service in Europe. The conventions, while perpetuating the monopoly, secure an abatement of the grievances. The question of differential tariffs was much discussed, and the proposal of uniform rates finally condemned. Reductions in freight-rates for the benefit of exporting manufacturers was secured, and also general reductions in freight and passenger tariffs, conditional on proportional remissions in the Government taxes on fast-traffic rates. The share of the Government in the profits was also considerably increased by altering the amount of the maximum dividend and the percentage beyond it which accrues to the state. The railroads are guaranteed against concessions for rival parallel lines; and on the other hand the right of the ultimate acquisition of the railroads was preserved for the state.

The Army.—The reorganization of the French army under the law of July 27, 1872, and the supplementary acts of July 24, 1873, March 13, 1875, and March, 1882, is nearly completed. Every Frenchman capable of bearing arms is required to train in the army, and may be called into service between the age of twenty and that of forty years. Exemption, according to the original intention of the law, was not to be allowed except for physical unfitness. Every Frenchman, on reaching the age of twenty, is enrolled in the active army, in which the period of service is five years, passing then for four years into the reserve of the active army. For the next five years he forms part of the territorial army, and for six years more is enrolled in the reserve of the territorial army. Besides those unfitted by physical infirmity, the eldest sons or grandsons of widows and aged fathers are exempt by law; pupils in the polytechnic and forestry schools, teachers in the public schools, professors in various institutions, artists who have gained prizes, and ecclesiastics, are exempt under certain conditions; and all who contribute to the support of families, or are engaged in studies, may be provisionally exempted by municipal councils. One-year volunteers are admitted upon passing an examination and paying 1,500 francs toward their clothing and maintenance. At the end of one year's service with the colors, all who have become proficient, and can read and write, may receive indefinite leave of absence. The active army and its reserve are drawn from and distributed over all parts of France, while the territorial army is divided into bodies corresponding to the localities from which its recruits are drawn, and the country is divided and subdivided into districts to which the greater and lesser bodies are attached.

The infantry are armed with the Gras rifle, an improvement on the Chassepot, with metal cartridges. The cavalry carry carbines. The field-artillery have breech-loading guns in cast-steel of eighty and ninety millimetres' caliber.

The organization at present permits of placing in the field 24 army corps in the first line and 8 in the second line.

The troops in active service numbered 502,786 men, with 124,977 horses, in 1883, divided as follows:

BRANCH OF SERVICE.	Men.
Infantry	283,563
Cavalry	68,722
Artillery	70,379
Engineers	11,007
Train	11,696
Six mixed companies in Tunis	2,834
Administrative corps	28,573
Gendarmerie	26,512
Total active army	502,786

There were organized 468 battalions of active infantry, 435 battalions of territorial infantry, and 363½ battalions of fortress infantry, depot troops, and other infantry bodies, altogether 1,266½ battalions, numbering 1,266,500 men; 392 active squadrons, including 77 at the depots, and 79 territorial squadrons of cavalry, together 471 squadrons, containing 70,650 men; and 312 field-batteries, including 8 of marine, 57 of horse-artillery, 76 depot batteries, 57 batteries of fortress artillery, and 38 territorial field-batteries, altogether 540 batteries, with 2,952 guns, numbering 180,000 men. Adding 45,000 engineers, 26,000 in the active and 19,000 in the territorial army, and 5,000 pontonniers, the total strength of the army on a war footing is 1,567,150, and, including the auxiliary services, 1,780,300 men, of which number 1,186,300 belong in the active and 594,000 in the territorial army.

The increase and enlargement of the fortresses, notably the innumerable blockade fortresses erected on the German frontier, necessitate an augmentation of the artillery. A law passed in the session of 1883 raises the peace footing of this arm 8,840 men, and provides for the increase of the batteries of stationary artillery ready for mobilization from 57 to 190. The complete separation of the field and fortress artillery, accomplished in the German army, is not carried out. The two branches of the arm are, however, divided into separate battalions. The cost of the augmentation was partly met by abolishing the active artillery train. The difference is scarcely felt in an army budget for 1883 of 584,000,000 francs, and supplementary estimates of 81,000,000 francs. The willingness of the French people to endure sacrifices for the re-establishment of their military power is shown by the calmly received statement of Minister Billot that the replacement of war material since the war had cost 2,289,000,000 francs, and would require 800,000,000 more.

The Navy.—The navy, at the beginning of 1882, had 57 iron-clad steamers, with 481 guns; 264 unarmored screw-steamers, with 1,547 guns; 62 side-wheel steamers, with 154 guns; and 113 sailing-vessels, with 672 guns; altogether 496 vessels, with 2,854 guns. The ironclads of the first class were 26 in number; of the second class, 18; coast-guards, 6; floating batteries, 7. The most powerful of the ironclads are the Dévastation, Foudroyant, and Admiral Duperré, all constructed on the same model, mainly of steel, 312 feet long, the first two with 14-inch armor, and carrying four 38-ton and two 25-ton guns, the last armored with 12 inches of steel, and without the two smaller guns. Next to these come 6 battle-ships, differing only in size and strength, armed with two 38-ton guns, and two of them carrying four 24-ton guns. All have horizontal steel plates, bomb-proof decks, and their guns mounted *en barbette*. There were five more not much inferior, and differing in little except in having smaller guns and lighter armor. The rest of the ironclads were of antiquated designs. There were building in 1882 the Kaiman, the Terrible, and the Requin, on the model of the Inflexible, but smaller, with fixed turrets and guns mounted *en barbette*, plated with compound armor, 50 centimetres thick, each of 7,168 tons' displacement; also three ships of the Audacious class, with plates of 25 centimetres' thickness, and the Formidable and Amiral Vaubin, monster ironclads of 11,300 tons, with armor 45 to 55 centimetres thick.

Finance.—The accounts of 1870 and 1871 were balanced with a surplus of 113,730,053 francs. The accounts of 1872, 1873, and 1874 were closed with deficits amounting to the sum of 191,264,128 francs. The budget of 1875 shows 98,204,823 francs excess of receipts; that of 1876, 98,204,823 francs; that of 1877, 63,811,309 francs; that of 1878, 62,356,879 francs; that of 1879, 96,207,185 francs; that of 1880, 134,450,970 francs; that of 1881, 70,793,882 francs. The budget of 1882 presents a deficit of 47,397,195 francs. The estimates for 1883, after the presentation of an extraordinary budget of 800,000,000 francs, showed an excess of expenditures incurred by the Government over the credits voted, amounting to 100,000,000 francs. It was stated in the debates that the expenditures on war material and fortifications since the war had amounted to 2 milliards, and those on public works to 1¾ milliards. The total expenditures, according to the closed accounts for 1869, amounted in that, the last normal year under the empire, to 1,740,000,000 francs. The greatly increased and still increasing expenditures under the republic, due mainly to the greatly augmented public debt, but to a considerable extent to increased expenditures on the army, and for various other objects, were partly covered by the increased yield of the direct taxes, yet chiefly by the imposition of new indirect taxes, such as sugar, wine, salt, and railroad imposts.

The practice of presenting nearly balanced budgets, and in the final accounts, published a number of years afterward, disclosing large deficits, did not originate with the ministers of the republic, but has been followed by all the governments of France since the Restoration. The public debt of France before the German War was largely the result of this process.

The state of the public finances has given rise to serious alarm for several years past. The prudent and economical financial management of M. Thiers and the other statesmen

who established the credit of France after the war, insured the acceptance of republican institutions. The prodigality of the Chamber since 1876, when the results of that conservative management were seen in five years of surplus revenue over the increasing expenditures, awakened the distrust in the workings of the present political system which has recently shown itself. In no other country except the United States is the expenditure of the public moneys so subject to political and electioneering influences, or less closely watched by the people. The Government plunged into every kind of ambitious project. At one and the same time it sought to rival Germany in its army and defenses, England in its navy and colonies, Switzerland in popular education, and America in railroads. The pension-list was largely augmented and new offices created to suit the exigencies of party politics. Instead of seeking new sources of revenue to meet the increased expenditures, there were certain reductions made in the taxes, which impaired the revenue without affording a proportionate relief to the tax-payers, as the Government was guided rather by political motives than by fiscal principles. The Treasury could have been relieved by the conversion of the debt at a lower interest, but for political reasons this was deferred for seven years, until under the pressure of deficits it became necessary. In 1875 the ordinary expenditures amounted to 2,626,000,000 francs, which was 1,005,000,000 more than the last budget of the empire, that of 1869. The service of the debt required something over 1,000,000,000 francs, leaving about 1,600,000,000 francs for the expenses of the Government, which was from 400 to 500 millions more than in the year before the war. From 1875 to 1880 the expenditures increased at the average rate of 40,000,000 francs per annum. Since 1881 the rate of increase has been two and a half times as great, and during the same period the expenditures have exceeded the revenues, and an annual deficit has been added to the public debt. From 1875 to 1880 there was an annual surplus. In 1881 a surplus revenue was reported, but the critics of the budget find that it was produced by counting the surplus of the preceding year among the ordinary receipts, and transferring certain permanent charges on the revenue to the account of extraordinary expenditures, so that there was an actual deficit of about 50 millions. The Government reports a deficit for 1882 of 47 millions, which by the stricter method of book-keeping would amount to 167 millions. The budget for 1883 was fixed at 3,044,000,000 francs. At the end of the first quarter supplementary credits had been added to the amount of 43 millions. These supplementary votes are an evidence of the lack of a rigid control over the public purse. In 1881 they amounted to 181,000,000 francs, in 1882 to 220,000,000 francs. The budget for 1884 is placed at 3,103,000,000 francs, nearly 200 millions more than the total ordinary revenue for 1882. The increase in the annual charge of the public debt was from 467½ million francs in 1869, to 1,130 millions in 1876, and 1,282½ millions in 1883; the expenditure on the army from 382½ to 812½ millions in 1876, and 667½ millions in 1883; that on the marine and the colonies, exclusive of Algeria, from 175 millions in 1869, to 250 millions in 1883. In addition to the heavy but more or less necessary increased expenditures on these heads the Chamber raised the budget of public works from 125 millions in 1869 to 575 millions in 1883, and that of public instruction from 25 to 112½ millions. Until the decrease in the yield of the taxes in 1882 and 1883 there was no reason to apprehend that the burdens would prove excessive for the tax-paying capacity of the French people. In the twelve years of the republic up to that time there was a surplus in eight years which exceeded the amount of the four deficits by 383 millions.

The budget for 1884 states the expenditures under the main heads as follow:

BRANCHES OF EXPENDITURE.	Francs.
Public debt	1,318,222,266
Dotations	30,899,116
Legislature	11,760,780
Justice	36,120,392
Worship	51,999,006
Interior Department	62,819,158
Algeria	9,406,430
Ministry of Finance	20,135,870
Ministry of Posts and Telegraphs	2,355,642
Ministry of War	605,307,000
Marine	204,570,377
Colonies	33,892,209
Public Instruction	184,888,151
Fine Arts	16,686,125
Ministry of Commerce	20,701,714
Ministry of Agriculture	25,760,640
Service of Public Works	96,188,200
Extraordinary public works	48,848,240
Régie and collection of taxes	338,602,107
Drawbacks and restitutions	20,456,500
Total ordinary expenditures	3,103,441,198

The budget for 1884 estimates the receipts from the various sources as follow:

SOURCES OF REVENUE.	Francs.
Direct taxes	386,108,100
Special imposts	25,804,960
Direct and special taxes in Algeria	9,171,358
Registration, stamps, and domains	761,808,492
Forests	35,485,814
Customs and salt-tax	407,718,600
Indirect internal taxes	1,118,738,800
Posts	187,450,000
Telegraphs	31,909,000
Tax (3 per cent.) on revenue from personal property	59,194,000
University	3,812,000
Penal fines	8,062,174
Service of civil pensions	21,546,000
Repayments of advances to railroads	34,900,000
Miscellaneous receipts	54,487,550
Appropriated from the surplus of 1881	16,698,000
Total ordinary revenue	3,103,700,848

The direct taxes consist of the land-tax (estimated yield, 176,320,000 francs), personal tax (65,408,000 francs), door and window tax (45,162,000 francs), and patent-fees (98,618,600 francs). The second item, special taxes analogous to direct taxes, includes various inspection-fees, taxes on carriages, clubs, billiards, a

tax on mortmain property, etc. The indirect internal taxes include excise duties on drink (425,753,000 francs), domestic salt (12,166,000 francs), and sugar (101,757,400 francs), matches (16,065,000 francs), paper (15,895,000 francs), etc., the produce of sales of tobacco (137,450,000 francs), and powder (14,914,000 francs), a tax of 20 per cent. on tickets for railroad express-trains, etc. The estimated amount of taxes collected in Algeria is 30,279,353 francs.

In 1793 all the debts, annuities, and other liabilities of the Government were funded in 5 per cent. perpetual rentes which required the annual payment of 174 million francs. The consolidated debt was reduced by repudiation and repayments out of the confiscated property of the church and nobility until at the beginning of the nineteenth century the annual charge was 40 millions. At the fall of the empire the interest charge was 68 millions. From the Restoration in 1814 to the Revolution of July in 1830, 165 million francs of new rente were added, representing the indemnity of 1,000 millions paid to the confiscated nobles, the war ransom of 700 millions, and the cost of the occupation, while reductions equal to the former annual interest were effected by amortization and conversion, leaving the rente charge 165 millions. During the same period the current accounts of the Government showed an average annual deficit of 1,268,000 francs; under Louis Philippe (1830–'48) the average deficit was 55,437,000 francs; under the second republic (1848–'51) it was 89,844,000 francs; under the third empire (1852–'69) it was 123,807,000 francs.

On the 1st of January, 1882, the amount of the public debt was 24,002,751,531 francs, and the rente charge 872,543,575 francs.

The state of the debt in 1883 was as follows:

DESCRIPTION OF RENTE.	Annual interest.	Nominal capital.
	Francs.	Francs.
Five per cent	339,332,000	6,786,650,000
Four and one half per cent	37,433,000	831,855,000
Four per cent	446,000	11,152,000
Three per cent	362,697,000	12,089,922,000
Last consolidated three per cent.	36,000,000	1,200,000,000
Total	775,908,000	20,919,579,000

The charges on account of the public debt and other obligations of the Government are given in the budget for 1884 as follow:

PUBLIC DEBT EXPENDITURES.	Francs.	Francs.
Rentes at 5 per cent. and 4½ per cent.	376,766,501	
Rentes at 4 per cent. and 3 per cent.	363,143,781	
Total interest on consolidated debt		739,901,282
Payments of interest and principal from the budget of extraordinary resources	240,000,000	
For the conversion of the Morgan loan.	17,399,000	
Interest on floating debt of the Treasury	28,100,000	
Annuities to railroads	48,731,501	
Repayments for war damages, contributions, etc., to communes, municipalities, etc.	28,188,500	
Other charges	14,756,750	
Total payments on redeemable debts		336,589,751
Brought forward		1,126,491,033
Annuity rentes	26,707,233	
Military pensions	84,500,000	
Civil pensions	56,300,000	
Various pension and other charges	24,215,000	
Total transient liabilities		191,722,233
Total		1,318,222,266

French rentes were held in comparatively few hands until under the third empire they began to be distributed among the people. In 1870 the number of holders was 1,254,040, the annual rente amounting to 358 million francs. In 1881, when the interest was about 852 millions, the number of holders was 4,617,900.

The long-deferred conversion of the 5 per cent. rentes was finally resolved upon in 1883, in view of the emergency in which the Government found itself with increasing expenditures and a failing revenue. The French Government had postponed the operation, though it would save many millions annually, from a reluctance to curtail the income of the bondholders, who form so large a part of the population. The scheme of exchanging 3 per cent. bonds for the 5 per cents. at an equivalent capitalized value was proposed for the sake of permanence and uniformity, as part of a scheme to convert the whole debt into 3 per cent. rentes; but, as it would preclude all future reductions in the interest charge and increase the nominal amount of the debt two milliards, the Government naturally preferred to effect about the same annual saving of 35 millions, with the prospect of future reductions of over 100 millions per annum more, by exchanging 4½ per cent. stock at or near par for the 5 per cents., pledging itself against a further conversion within five years.

Paris and the other municipalities have debts which were greatly increased by the war. The budget of the city of Paris for 1880 estimates the revenue at 233,622,125 francs, derived principally from the octroi tolls, which were estimated at 128,713,600 francs. The largest item of expenditure is the interest and sinking fund of the municipal debt. The capital amount in 1880 was 2,295,000,000 francs.

Prince Bonaparte's Manifesto.—In Gambetta the republic lost perhaps the only man who possessed the political strength and prestige to lead it through a crisis. He himself, by the adventurous foreign policy and the idea of personal rule which he represented, had done not a little to unsettle the public mind, and to reawaken a desire for the strong governing hand to which France had formerly been accustomed. His programme, although it had cost him the premiership, had restored him to the position which he held after the national defense as the champion on whom the republic must rely in the hour of its need. He assumed this position more distinctly in his later appeals. The monarchical parties echoed the demand for a strong and stable government, and when Gambetta died they prepared to renew

their agitations. The various radical groups, of a more or less socialistic bent, had been visibly kept in restraint by Gambetta. There was a prospect that the center of gravity in the government would now shift farther to the left, and to the *régime* of the freethinkers would succeed one of socialistic experiments. With a make-shift ministry, a Chamber which served only as a forum for wordy contests with the foes of the existing order, and with the wide-spread mistrust which Gambetta had fomented, that the republic, constituted as it was, was incapable of maintaining the interests and dignity of France abroad or a stable order at home, the situation was favorable for a *coup de main* or revolution if any of the hostile parties were able or willing to profit by it.

A Legitimist agitation was set on foot in the Vendée and the south of France, at Montpellier, and the other strongholds of royalism. There was talk of reorganizing General Charette's royalist legion, which in 1870 was reputed to number 8,000. Rumor exaggerated the preparations into 1,500 Papal Zouave veterans in Paris, and 33 legions organized as hunting-clubs in the country, with a treasure of 15,000,000 francs in London. The Count de Chambord was expected to issue a manifesto. A sudden damper was thrown upon the movement by an unexpected act of Prince Napoleon, who, in order to forestall the Count de Chambord and claim the position which his party denied him, of head of the Bonapartes, placarded on the walls of Paris and published in the "Figaro," January 16th, a manifesto in the form of an arraignment of the republic and apology for his own position.

On the same day on which this manifesto was issued Prince Napoleon was arrested and confined in the prison of the Conciergerie on the charge of an "attempted act against the safety of the state, for the purpose of changing the existing form of government." The manifesto had no popular effect, but it rallied to the prince the Bonapartist politicians, who, on account of his republican principles and radical sympathies, had sought to thrust him aside in favor of his son, Prince Victor.

Pretender Question.—In the Chamber the manifesto was the signal for calling forth, not so much the fears, as the antipathies, of the Republicans against the Bourbon princes and the socially powerful though politically prostrate section of the community which clung to the principles of royalty and aristocracy. The Duc d'Aumale and his aspirations to the presidency of the republic were more dreaded than "the King" in Frohsdorf, or the discarded head of the Bonapartes. A bill was at once brought in by M. Floquet to banish from the soil of France and the colonies, and deprive of all political rights, the members of families which formerly reigned in France. Urgency was voted by a large majority. A government bill was presented by M. Fallières, Minister of the Interior, which would empower the Executive to expel from French territory any prince whose presence might be considered dangerous to the state, and, if an officer of the army, to place him *en disponibilité*. The committee appointed by the bureaux to discuss the measure at first reported a bill as rigorous as the Floquet proposal, but finally agreed to a compromise, incapacitating the members of dynastic families for any electoral function or any civil or military employment. M. Duclerc, the Premier, and Gen. Billot, Minister of War, refused to accept the Fabre compromise, and the Cabinet, in consequence, resigned. Admiral Jaurréguibery, Minister of Marine, had already tendered his resignation. President Grévy simply accepted the resignations of the three ministers who objected to a compromise, and, upon M. Jules Ferry's declining to form a Cabinet, intrusted M. Fallières with the premiership, January 29th. On February 1st the bill passed by a vote of 355 to 142, 53 Republicans voting with the minority, and 42 abstaining, mostly because the bill did not go far enough.*

Interim Ministry.—The Ministry of War was offered to Gen. Campenon, a Gambettist, who declined the office. It was accepted by Gen. Thibaudin, who, though absolved by a council of officers, was supposed by many to have broken his parole in escaping from imprisonment in Germany and joining the army of the national defense. At the time that the crisis culminated, M. Duclerc was seriously ill, and sent his resignation from a sick-bed. In the midst of his first speech as Prime Minister, M. Fallières was also taken ill, overcome by anxiety and loss of sleep. M. Fallières was about forty-four years of age. Like the other members of the Duclerc ministry, he was new to office, but passed for the ablest speaker among them. Before entering public life he was a lawyer in the small town of Nérac. The aged M. Duclerc was well known and respected in the Chamber, but had not the eminence and weight of character which could command the obedience of the majority. M. Déves, the Minister of Justice, was not an eminent lawyer, nor did M. Duvaux, Minister of Public Instruction, formerly professor in the Lycée at Nancy, add to the authority of the Cabinet, though all

* The princes of Orleans, who are retired from active service in the army, though not deprived of their military rank, by the pretenders' bill, were proscribed under the empire, but returned to France in virtue of an amnesty law, passed in 1871. Prince de Joinville and Duc de Chartres had served in the Second Army of the Loire under assumed names, with the knowledge of Gen. Chanzy, who sought in every way to advance their interests. The Prince de Joinville was discharged and sent out of the country by orders of Gambetta, but the Duc de Chartres concealed his identity and was decorated with the cross of the Legion of Honor. The Duc de Nemours and the Duc d'Aumale figure on the army lists as generals of division, having been advanced to that grade during the reign of their father, Louis Philippe. At the time of the passage of the act the Duc de Nemours was in the reserve, the Duc d'Aumale was *en disponibilité*, the Duc de Chartres was in command of a regiment at Rouen, the Duc d'Alençon commanded a battery of artillery, the Duc de Penthièvre had resigned, and his father, the Prince de Joinville, retained the rank which he had received by royal ordinance, of vice-admiral in the navy. Of the Bonapartes, Roland, the son of Pierre, held a captaincy in the line.

of them were respected as men of sense and ability. For these reasons the Duclerc ministry had several times to experience adverse votes which were not intended to express want of confidence, but simply signified absence of party discipline and lack of a vigorous leader. When Duclerc retired, the rump Cabinet was only retained as an *interim* ministry pending the settlement of the pretender question. With two portfolios vacant, and M. Fallières still too ill to attend to affairs, it could not even present the semblance of constituting a government. In the flux and disorganization of parties, the crisis was prolonged, and passed through various unexpected phases. When the bill came before the Senate the first feeling was in favor of its rejection pure and simple, in which sense the committee made its report. But the leaders of the Left Center, unwilling to block their path to future office, proposed a compromise which secured a majority. This, the Say-Waddington bill, made public acts or demonstrations of pretenders belonging to ex-regnant families tending to jeopardize the state, punishable by banishment. Another proposal, suggested by M. Barbey, was to give the Executive discretionary power to expel princes for acts and demonstrations as pretenders. At the beginning of the long debate in the Senate the circumstances were altered by the quashing of the complaint against Prince Napoleon. The thirteen judges of the Chambre des Mises en Accusation found that no indictment lay against the prince, since the publishing and placarding of his proclamation was admissible under the press law, and, in the absence of overt acts, did not constitute an attempt to overthrow the government. Prince Napoleon, released from his three weeks' confinement, betook himself to Belgium, where, having been acknowledged for the first time by the ex-Empress and a section of the party, he continued the *rôle* of representative of the imperial cause and "Napoleonic ideas"; but, later, the old differences with the Bonapartist politicians were renewed, and Prince Victor was induced to come out in opposition to his father. On the 13th of February, when the pretenders' bill was passed back to the popular assembly in the form of the Say-Waddington amendment, the headless and useless ministry formally resigned. At this stage the Paris merchants expressed their uneasiness in a petition to President Grévy. The working-men followed with a petition for the expulsion of the princes and a bolder foreign policy. The Chamber, on the return of the bill, refused to consider the Senate amendment, dallied with the Barbey compromise, and then finally sent up to the Senate the original Floquet bill. In the Senate, by the shrewd tactics of the leader of the Right, the Duc de Broglie, who had left the field free for the republican opponents of exceptional legislation, the bill was now rejected by a majority of five, after a month of impassioned discussion. The vote was taken February 17th.

Ferry Cabinet.—Jules Ferry, who had postponed taking office until the expulsion question was decided, upon the collapse of the bill undertook to compose a ministry and formulate a programme which would secure the support of enough of the 140 members of the Republican Union, Gambetta's Opportunist group, to make, with the 180 belonging to the Democratic Union and Center groups, a steady majority over the 90 members of the Right and the 90 of the Radical Left and Extreme Left, re-enforced by the remainder of the Gambettists. On the 21st the list was published, as given near the beginning of this article.

M. Ferry, after the death of Gambetta, was the most conspicuous figure in the Chamber, and was the only ex-Premier who had not been precipitated from office by an expression of want of confidence. His constructive work in the reform of education gave him a title to greatness which was no longer darkened by the stormy polemics which assailed him as the ministerial representative of the anti-Clerical policy and the author of "Article VII." The retention of Gen. Thibaudin and the appointment of M. Challemel-Lacour, the most vigorous advocate of the ostracism of the princes, indicated the attitude of the new ministry on this question. The Foreign Minister was known as a *doctrinaire* Republican who commenced life as a teacher of philosophy in the Lycée at Pau, was imprisoned and banished after the *coup d'état*, translated works of German philosophy and officiated as Professor of French literature at Zurich, and after his return to France in 1856 became a journalist. He was Prefect of Lyons during the war, and had to contend with the communards under Arnaud. He was appointed by M. Waddington to the London embassy. Although he had repeatedly been spoken of for a portfolio, his friend and leader, Gambetta, did not include him in his Cabinet. M. Charles Brun, a naval engineer of high reputation, who had sat in the Chamber since 1871, but without taking an active part in the debates, was the first civilian who has filled the Ministry of the Marine. M. Mélines, the Minister of Agriculture, a lawyer by profession, had distinguished himself as an advocate of protection, and was reporter of the general tariff committee. MM. Tirard and Cochery had held the same positions in the preceding Cabinet, and M. Hérisson, the Minister of Commerce, was transferred from the Ministry of Public Works. M. Waldeck-Rousseau, one of the most prominent of the younger politicians, was Minister of the Interior under Gambetta. M. Raynal was Minister of Public Works, and M. Feuillée sub-Secretary of the Department of Justice in the same ministry. MM. Challemel-Lacour and Charles Brun represented the Cabinet in the Senate.

In the declaration which Minister Ferry read in the Chamber, he announced that the princes in the army would be placed in non-activity, and the order was issued immediately. This

was done by straining an old army law of 1834.

Revision Question.—The question of the revision of the Constitution was the first one pressed upon the new ministry. Dr. Clemenceau, at the head of the Radicals, made a vehement appeal to have the question with which Gambetta had temporized finally decided, and sentence pronounced upon the Senate after the collision with the Chamber on the pretender question. M. Ferry took a firm stand, refusing to subject the country to the agitation of a dissolution of the National Assembly and a conflict with the foes of the republic over this delicate question. The Chamber, by a majority of 150 votes, approved the decision to postpone revision until after the general election of 1885.

Socialist Agitations.—While Prince Bonaparte was undergoing internment, and the Floquet proposal for the ostracism of the French princes was before the Chamber, the trial of the Lyons Anarchists came to an end. Prince Krapotkine and the other accused, 52 in number, were brought to trial under an act directed against the International Society. They were arrested after the labor riot at Montceau-les-Mines in 1882, and a disorderly demonstration in Lyons occurring at that time, consisting of the explosion of a dynamite cartridge in a coffee-house. They acknowledged and defended their anarchist and socialistic doctrines, but denied belonging to the International Association, which had gone out of existence. Prince Krapotkine recounted the story of his life, saying that witnessing as the son of a Russian serf-proprietor cruelties which matched the tales of "Uncle Tom's Cabin," his sympathies were drawn to the oppressed, while the vices and corruption which he saw in the Russian military service gave him a contempt for his own class. While Professor of Mathematics in St. Petersburg he was arrested as a Nihilist, and witnessed in prison horrors which drove nine fellow-prisoners to madness and eleven to suicide. The accused Anarchists were convicted of belonging to an international organization and were condemned, Prince Krapotkine with three others to five years' imprisonment, ten years of police surveillance, and five years' deprivation of civil rights, and the rest to lesser punishments.

Scarcely had fears from the Legitimists been allayed by the adoption of the pretenders' bill, and the assumption of the government by firmer hands, when the opposite party of disruption, the heirs of the Commune, began to lift their heads. An open-air meeting of Parisian artisans out of work was convened for March 9th by placards issued by the Carpenters' Union, announcing as the order of the day "To call upon the Government to take immediate measures to provide bread for those who have none." The distress among the working-people, owing to commercial stagnation and a severe winter, was greater than it had been for many years. "If our rich republic," the address declared, "has no longer work to give us, it ought at least to feed the creator of its wealth and its firmest bulwark—the artisan." The task of providing work for the unemployed was tacitly assumed by the republic from the beginning, though not freely acknowledged by responsible statesmen. It was the principal cause of the expenditures on public works which created financial embarrassments for the Government. The mechanics of Paris, Lyons, and the few other large cities where revolutions are enacted, stood as arbiters over the republic; but, as they became more imbued with socialistic theories, they became estranged from the Government, and torn by internal dissensions which prevented them from making a direct impress on legislation; their latent power, however, increased, and after the amnesty of the communards the labor question bore the character of an issue to be dealt with in the near future. Clemencean and the Radicals adopted the less advanced propositions of the Socialists, such as the revision of contracts which have alienated public property, mines, railroads, canals, etc., and the progressive income-tax, as the platform by which they hoped to succeed to power.

French socialists are divided into three principal schools—Blanquists, Collectivists, and Anarchists. The disciples of Blanqui, the most conspicuous of whom is Eudes, general under the Commune, is not a numerous group, but a compact one, formed of bold and energetic men. They are averse to the discussion of social theories. All that is clear in their programme is the political method whereby they would accomplish sweeping, but undefined, changes in the constitution of society, which is by concentrating the power of the revolution in few hands, and granting their leaders dictatorial authority. They are therefore pure revolutionists, descendants of the Jacobins of 1792. The Collectivists base their demands on the familiar historical and economical arguments of socialists, and hold in the main the doctrines of the teachers of German democratic socialism. Their aim is to make machinery, raw materials, and all the apparatus and means of production the collective property of society, and would accomplish this by a revolutionary overthrow. To a small group, which has its headquarters in Belgium, the appeal to physical force is repugnant. These, known as Colinsians, expect to effect the transfer gradually by means of a tax of 25 per cent. on succession, and the reversion of property to the state where there are no direct heirs. The revolutionary Collectivists are split, through personal rivalries, into two warring factions, the larger of which is called the Union Fédérative, and the other the Fédération du Centre. The Anarchists, represented by the imprisoned Prince Krapotkine and the geographer Élisée Reclus, like the Collectivists, desire to make capital and the means of production social property, and are opposed to all centralization of authority or fixed political organization.

They think that when society is organized on a proper basis, the functions of government and the principle of authority will become obsolete, that practical tasks will be delegated voluntarily, as outside of the sphere of government they are in a great measure, to persons who show the requisite knowledge and skill, and that, when it is necessary to take counsel, informal bodies—local, industrial, or more general—untrammeled by a rigid legal constitution, will establish themselves spontaneously. The Socialists of the old schools—Phalansterians, Proudhonians, Positivists—have ceased agitation. Those now in the field, as they became more disappointed and out of harmony with the republic, grew violent and revolutionary in their attitude. The more politic and ambitious, who throve by agitation—such as Louise Michel, Lissagaray, Rochefort, Félix Pyat, Émile Digeon, and other editors and orators—did not compromise themselves by adopting any system of socialistic doctrine, but followed the popular revolutionary drift, and grew more inflammatory in their language.

The meeting of the unemployed workingmen was held on the Esplanade des Invalides. It was arranged by one of the numerous groups of agitators, and was consequently discouraged by the rival agitators. About 4,000 people assembled, a considerable proportion of whom were actually distressed mechanics in the building-trade and Paris industries. The police kept the crowd moving, and when Louise Michel, the orator of the day, appeared, she was interrupted in the beginning of her address. Suddenly, at a signal-cry, the crowd started for the presidency, but were driven back by the police. The whole programme of the demonstration was prearranged, and the spectators far outnumbered the participants, many of them reactionaries, wishing and expecting a serious collision with the police. When the passage of the Bridge de la Concorde was opposed by the police, the mob made a show of resistance, and a brief struggle took place before they retired. A band of those who did not join the demonstration on the Elysée followed Louise Michel up the Boulevard. Some of them entered the bakers' shops demanding bread. If the shopkeepers refused to give them loaves, they broke the windows and helped themselves. This episode formed no part of the original programme, in which the assembly and the police acted their parts with formal regularity. Louise Michel did not suggest the proceedings, but, when she saw them, laughed at the ingenious idea.

The carpenters' demonstration and march on the residence of President Grévy was only one of many signs that the French working-man, now pinched by hard times, was determined to call the republic to account for neglecting social legislation. The excitement was intense among all classes. The political parties all endeavored to make capital out of the situation. The Bonapartists and Legitimists accused the Republicans of having brought the distress upon the working-class, and were themselves accused of having instigated the riot of March 9th, and of being in league with Anarchists. The crisis in the building trade was ascribed in part to the pampering of the working-class by the municipality of Paris, which paid high wages to carpenters, and forced up the scale until work could be done in the provinces 15 to 20 per cent. cheaper. Wages were said to have risen 60 per cent. in the building trades since 1875.

A second demonstration was attempted on Sunday, March 11th, but the Government adopted vigorous measures for the repression of revolutionary agitation. A great number who took part in the demonstrations of the 9th were arrested and sentenced to short terms of imprisonment. Louise Michel gave herself up, after evading the police for a week or two. On June 21st Louise Michel, with eight other persons, were put on trial on the charge of inciting to pillage. This orator and poet of the social revolution was forty-six years old. Before she entered upon the career of a communistic agitator she was a school-teacher. She had endured the horrors of exile in New Caledonia, and returned with the last of the amnestied communards. On one of her companions was found a revolver, and in his lodgings explosives and many copies of a pamphlet such as had been recently distributed among the soldiers, inciting them to burn their barracks. He was a book-agent, named Pouget, twenty-three years old. The two prisoners conducted their own defense, injecting political sarcasms and denunciations into their pleas. They were pronounced guilty, and sentenced—Louise Michel to six and Pouget to eight years' imprisonment, with ten of police supervision for both.

Labor Legislation.—The problem of artisans' dwellings was a branch of the labor question which the Premier took up with sympathy and zeal, as the solution would remove a growing evil and at the same time provide work for the clamorous carpenters and masons of Paris. He entered into arrangements with the Land Bank, by which advances would be made to contractors to put up cottages, constructed on the best models for comfort and sanitation, in the environs of Paris. These dwellings, 13,000 in number, built at a total cost of 20,000,000 francs, were to be sold to working-men, and paid for in annual payments, which are somewhat less than the ordinary rent of apartments in the slums of Paris, but which will pay 5 per cent. interest and extinguish the principal in twenty years. These payments are guaranteed by the Government. At the same time, the municipality of Paris guaranteed loans amounting to 50 millions, at the same rate of interest and conditions of amortization, for the construction of model tenement-houses containing 26,000 dwellings. The rents range from 150 to 300 francs per annum. The tenants are partly relieved from taxes. The same system is

to be extended to the provinces, where greatly increased rents and industrial depression have created the same house-famine.

The cost of living among French working-people was computed from inquiries at Mulhouse by M. Armangaud, a statistician, to range from 1,100 to 3,000 francs per annum. Of the total, rent consumes 15 per cent., clothing 16 per cent., food 61 per cent., and miscellaneous expenses 8 per cent. Of the expenditure for food, 33 per cent. is for bread, 14 per cent. for meat, 13 per cent. for milk, 24 per cent. for groceries, and 16 per cent. for other aliments.

Judicature Bill.—A bill passed the National Assembly, without encountering the expected difficulty in the Senate, which forms part of a general scheme for the reform of the judicature elaborated by Gambetta and Cazot, President of the Court of Cassation. The French judiciary still consisted under the republic in great part of members of the hereditary caste who under the ancient *régime* transmitted the ermine from father to son. The smallness of the stipends precluded lawyers from accepting judicial positions, and the exclusive circle of the descendants of the old *noblesse de robe* made it unpleasant for any one not of their own class to enter the magistracy, though he had a private fortune sufficient to sustain its expensive state. The judgments rendered by this provincial aristocracy in political cases have been a scandal. They have refused to give effect to laws directed against monarchical and clerical intrigue, and have persisted in treating republicans as though they were the enemies of the established order. Gambetta was, for instance, condemned to four months' imprisonment for declaring that Marshal MacMahon must yield to the will of the nation or resign, and 2,700 sentences were recorded against republicans for resisting by legal methods the revolutionary plot of the monarchists to overturn the republic. Gambetta's project of reform was to reduce the excessive number of judges, increase the salaries, and recruit the bench entirely from the legal profession. The judicature act suspended the irremovability of judges for three months in order to enable Minister Feuillée to reduce their number by selecting and retiring 600 of them on pensions.

Anti-Clerical Legislation.—M. Grévy, at the reception of the new Papal nuncio, Mgr. Camille de Rende, assured him that "the protection due to religion, and the strengthening of the bonds of friendship existing between France and the Holy See, will be the object of our constant solicitude." The deputies, however, evinced by a number of enactments their hostility to the Church. The Chamber abolished the state subsidies to hospital chaplains, and decided that there should be no division between the Christian and Israelite portions of a cemetery, from which even the cross at the entrance was to be removed. Recognizing M. Grévy's disposition for conciliation, the Pope, in June, sent him a private letter complaining of the hardships which the French clergy had to suffer under the republic, and asking his influence to procure an amelioration of their condition, and to prevent a rupture between the republic and the Vatican. M. Grévy replied in a conciliatory manner. This reply was followed by a dispatch from M. Jules Ferry, pointing out that it was difficult for a government to check a movement against the clericals while the latter remained so essentially hostile.

Wars in Tonquin and Madagascar.—The colonial policy which was adopted as more profitable than a European foreign policy—that is, as a renunciation, as far as the republic is concerned, of the revenge idea, and an escape from the risks and disquiet of the situation created by Gambetta—gave the Government and the public much to occupy themselves with in 1883 (see articles on TONQUIN and MADAGASCAR). The intention to establish a protectorate in Tonquin was announced in the beginning of May, and the first vote of credit sanctioning the scheme obtained. That same month came tidings of the defeat and death of Rivière. Thenceforth the credits were granted with practical unanimity, and the Government was supported in the prosecution of the enterprise and the diplomatic conflict with China.

The difficulties with the Hova government in Madagascar were a heritage from the Duclerc ministry. At about the time of Rivière's defeat the French men-of-war bombarded the Malagasy ports. The operations, and the Shaw affair, which was settled by paying the aggrieved missionary, are elsewhere described.

Insult to the King of Spain.—In August an article denouncing the French as disturbers of the peace of Europe appeared in the "North German Gazette." As soon as the annoyance caused by this had subsided in France, the German Emperor appointed the King of Spain, on his visit to Berlin, colonel of a regiment stationed at Strasburg, which appointment was deemed by the French a deliberate insult. Preparations had been made to give the King, on his return from the autumn manœuvres at Hamburg, a warm welcome to Paris. The Radicals now raised an outcry, and it was feared that some disturbance might take place. On September 29th, on arriving at the station, the King was formally greeted by M. Grévy and M. Jules Ferry, but, outside the station, and throughout the whole of the King's drive to the embassy, a mob assailed him with groans, and cries of "Down with the Uhlan!" On subsequently paying an official visit to M. Grévy at the Élysée, a crowd made a rush at the carriage, and the King was again mobbed and insulted. Next day President Grévy paid a visit to the King, and, in the name of France, begged that he would not identify her with the "wretches" who had compromised her renown by demonstrations which he repudiated; he also prayed the King to attend the state banquet which was to be held in his Majesty's honor at the Elysée that

evening. The King consented, on condition that the apology tendered by President Grévy should be made public. President Grévy agreed to this, and the King attended the banquet, leaving the next morning for Madrid. The mere publication of the explanations in the official gazette was not objected to, but the demand for a diplomatic document was not acceded to.

Cabinet Questions.—The Minister of War, Gen. Thibaudin, was a disturbing element in the Cabinet from the beginning. He sought his support from the Radical factions, and became gradually estranged from his colleagues. Though he displayed ability and energy, and elaborated important improvements in the service, he imported into the army more of the political element which continually weakens its efficiency by destroying the *esprit du corps* that formerly existed. By refusing to allow Gen. Gallifet to conduct the cavalry manœuvres, he came into conflict with his colleagues, but was compelled to yield. After the insult to King Alfonso, Gen. Thibaudin, who was blamed for not taking precautions, and who had refused to take part in the reception, resigned his office.

The Budget.—The finance committee of the Chamber insisted on a balanced budget, and little progress was made until the autumn session, which was devoted to this subject. M. Tirard's rectified estimates still showed a deficit of 65 millions. He was compelled to submit, in order to obtain an approximate balance, to a reduction in the sinking-fund appropriation, although he had declared on taking office that the amortization should on no account be intermitted.

FRIENDS. The Orthodox branch of the Society of Friends includes the London and Dublin Yearly Meetings; eleven Yearly Meetings in America, viz., those of Canada, New England, New York, Philadelphia, Baltimore, North Carolina, Ohio, Indiana, Iowa, Kansas, and the Western Yearly Meeting, and small bodies in Norway and Australia. These meetings assist in the maintenance of missions in India, Madagascar (where the Friends co-operate with the London Missionary Society), Mount Lebanon in Syria, in Mexico, among the North American Indians, and in the home countries of the several bodies. The reports made to the meetings and the statistical returns show that the decline in numbers of the society, which was remarked several years ago, has been arrested, and that, except in some of the Eastern meetings in the United States, the masses of the members are young.

The statistical reports for 1882 show the number of members of the Society of Friends in Great Britain and Ireland to be 18,000, besides some 5,790 persons who were not members, but who usually attended Friends' meetings. About 35,000 persons, only 8,000 of whom regularly attended Friends' meetings, were receiving instruction in First-day schools. The London Friends' Tract Association had issued during the year 131,328 tracts, including editions in French, German, and Welsh.

Reports were made at the Indiana Yearly Meeting, in September, concerning home-mission meetings, prison meetings, and temperance union meetings that had been held during the year. Efforts in behalf of temperance had received especial attention, and had made great progress. The New York Yearly Meeting has the distribution of two funds—the Lindley Murray Fund, of $50,000, the interest of which is distributed among charities; and the Moscher Fund, of $13,000, which is devoted to the distribution of books relating to the interests of the Friends.

The Associated Committee of Friends on Indian Affairs received during the year ending in June, 1883, $4,183, and expended $3,171. Seven boarding-schools and ten day-schools were sustained, and three schools among the Shawnees in the Cherokee country were assisted by the committee; and the schools in the Sac and Fox, Osage, and Cheyenne and Arapahoe agencies returned an enrollment of 602 pupils. Arrangements had been made under the direction of the Indiana Yearly Meeting for the reception and education of Indian children at White's Manual Labor Institute, near Wabash, Ind., in behalf of which $3,204 had been raised for the provision of buildings, and where fourteen boys and thirteen girls had been received. Indian girls who were taken to Trinity College, N. C., were found to be detrimental to the school.

The progress which has been made within the Society of Friends in adaptation to the changed conditions of modern life and thought is practically exemplified in the revised version of the "Book of Christian Discipline" which was issued, under the auspices of the London Yearly Meeting, to the members of the society in November. The present edition is the fourth that has been made since the book was first published, in the latter part of the last century. The volume is divided into three parts: The first part, relating to "Christian Doctrine," consists chiefly of extracts from the journal of George Fox, and from the minutes of the yearly meetings; the second part treats of "Church Practice"; and the third part, on "Church Government," relates to the order of meetings, the functions of officers, the mode of transferring members, and other internal regulations. The changes made in revision, which are considerable in number, are chiefly in the second and third parts. Some of them have been rendered proper by changes made in the civil laws since the last edition of the book was issued, as in the case of the repeal of compulsory church-rates; some by changes of opinion within the society; and some by the desire of the body to include later advices than those that had previously appeared. While the rules against "foolish and wicked pastimes," denouncing as such

"balls, gaming-places, horse-races, and play-houses," still stand, advice is now added enforcing the "duty of taking needful recreation," without which, it is observed, neither physical nor mental faculties can be preserved in a healthy condition. The counsel against the use of music is removed, while the caution against musical entertainments, especially against those "musical exhibitions in which an attempt is made to combine religion with a certain amount of amusement," is retained. The testimony against "ecclesiastical demands" is modified, but a minute is retained expressing continued belief that the "union of the Church with the state derives no support from the New Testament." To the prolonged testimony against war is added an extract from a former expression of the society against "military centers." The "Queries," or questions to be answered by meetings to their superior meetings, are simplified and so modified as to bring them into closer accord with the circumstances of modern life; a summary is given of a simplified form of marriage regulations, and considerable space is occupied with the statement of the rules in regard to removals, appeals, arbitration, and other internal arrangements of the society. The changes that are recorded are chiefly those that have taken place within the last twenty years, but are now, for the first time, placed in the official code or law of the denomination.

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GAS. For many years gas-manufacture has been one of the most conservative of the industries, but the past ten years have seen a great advance in coal-gas processes, and the successful development of the manufacture of water-gas.

The great improvements introduced into the coal-gas manufacture may be referred to the furnace, retort-charging, and scrubbing. The general process is simple, and does not admit of much further development.

Furnaces.—About ten years ago one of the prevailing ideas of gas-engineers was, that a yield of 9,500 cubic feet per ton of coal, and of 6,000 cubic feet per retort daily, was good practice. The belief prevailed that a higher heat, productive of higher yields, would injure the quality of the gas. Later experience has controverted this idea. The tendency toward higher heats has grown, and the size of retorts has increased, until yields of 11,420 cubic feet per ton and 9,000 cubic feet or more per retort are frequently reached. It is especially in New England that these results are attained. The revolution in metallurgy and glass-making, due to the invention of the Siemens regenerative furnace, is known to all scientific readers. It was not till several years after its invention that gas-engineers adopted it. It was found to answer all expectations, but presented some objectionable features. To contain the regenerative chambers of the furnaces, a large excavation was necessary, involving considerable additional expense in building the furnaces. The gas-generator was an extra and costly piece of apparatus. Serious changes were necessary wherever the new furnaces were introduced into old retort-houses. Several modified furnaces were invented, combining some of the characteristics of Siemens's furnace with those of the old retort-bench. The new furnaces are all constructed on the same general principles. The fireplace is deep, with a grate of very small area. A limited supply of air, sometimes with the addition of a little steam, is admitted below, and passes through the thick bed of incandescent coke, thus producing carbonic-oxide gas and hydrogen. The gas rises into the oven containing the retorts, where it meets a new supply of heated air. A vivid, intensely hot combustion takes place, heating the retorts containing the coal. The hot gases from the combustion pass off through flues, parallel with other flues, through which the second air-supply enters. This heats the air before the final combustion, and in this heating of the air is seen to some extent the regenerative element of the Siemens furnace. The modifications just described amount to a more compact and cheaper construction of the same device. The results achieved by them affect economy of labor, economy of fuel, and higher heats, with consequent higher yields. The improved furnaces are so disposed that less labor is required in working them. The heat developed in the fireplace is comparatively low, so that less deterioration of the furnace takes place and less labor is required in removing the slag. The saving in fuel amounts to 30 per cent.

At first sight it would appear that the heat developed in the furnace in the carbonic-oxide combustion is lost, as it is not applied directly to heating the retorts. But this is not the case, as the carbonic-oxide gas is generated at a high temperature, enters the oven when very hot, and so transmits the heat of the furnace to the retorts. As in the original Siemens furnace, both elements, gas and air, are hot. The increase in the temperature of the retorts is very remarkable; comparatively small retorts carbonize large amounts of coal. The increased expense of the improved furnaces can be recouped to a certain extent by the fewer or smaller retorts necessary.

Hot-Coke Firing.—Any one who is familiar with the old gas processes must have been impressed with the inconsistency in the treatment of coke. It is drawn red-hot from the retorts, cooled off by dashing water upon it, and when perfectly cold a portion of it is used for the fires. Some of the furnaces just described use the hot coke as it comes from the retorts. It

is charged directly into them, thus not only saving that amount of heat, which is less than might be imagined, but also saving the labor of again handling the coke. In one of the large works of this city, where it has not yet been deemed advisable to introduce the new furnaces, an economy of labor and fuel is secured by charging the old style of furnaces with hot coke as it comes from the retort. It is drawn into a peculiarly shaped iron barrow, which is then wheeled in front of the furnace-door, and the coke is pushed in.

Retort-Charging.—Many efforts have been made here and abroad to do away with the laborious hand-charging. Apparatus has been tried by which a scoop of the length of a retort was introduced by machinery into the retort, and was then inverted, opened, or had its bottom withdrawn, dropping the charge of coal upon the bottom of the retort. These machines are preceded by another one which draws the coke from the retort. In all cases they work on the principle of the old-fashioned "drawing-rake." The coke is raked or hoed out of the retort, exactly as in the old hand-process. A very ingenious machine has recently been introduced for charging retorts, in which a jet of steam is made to drive the coal before it into the retort. As may be surmised, this is of extremely simple construction. A steam nozzle is arranged with a quick-opening valve so that a sudden puff of steam can be discharged. A scoop or pipe leads the coal down in front of the nozzle, and, by a succession of openings of the valve, the coal is driven in two or three installments into the retort. By graduating the force of the jets of steam, the coal can be deposited with great regularity along the entire length of the retort. An unsuccessful attempt has been made to use the same principle in discharging retorts.

The great objection to the mechanical stokers was their size, complexity, and consequent expense. By the use of the steam-jet these objectionable features, at least, were to a great extent obviated.

Scrubbers.—It is surprising how long it took gas-engineers to learn to wash the ammonia out of gas. For years, hardly an attempt was made to remove the ammonia economically and thoroughly. William Mann, of England, was one of the earliest to enter the field. He introduced his coke-scrubbers at many English works, where they met with complete success. Their construction is very simple, their efficiency being due to their size. They are iron towers, sometimes sixty or seventy feet high, which are filled with coke, and supplied with water at the top; this, trickling down through the coke, effectually absorbs the ammonia from the gas, which is driven up through the mass. Less than a gallon of water suffices for each thousand cubic feet of gas. Ammoniacal liquor of improved quality and high commercial value is also thus obtained. Another form of scrubber contains a series of vertical revolving disks, perforated with many holes, whose lower areas dip into water. The gas passes through these disks and is thereby very efficiently washed. The water is so distributed that the first disk is moistened with clean water, the next with the weakest ammoniacal liquor, and so on, the water regularly passing from end to end of the scrubber, against the current of the gas.

Other Improvements.—In the purification of gas the general practice has adhered to lime. Some very remarkable results have been achieved with bone-black, but they have led to no extensive practical use. Heating the gas with a small percentage of air before purification has also been tried, but with only experimental results. A new method of working purifiers has been introduced. Purifiers are arranged universally in sets of four, with center seal arranged to keep three of them continuously working, and one of the set always off for cleaning and refilling. By the new system either three or four purifiers can be kept in operation. Three are used while the fourth is being replenished, after which four are put to work, and kept so until the third purifier stains lead-paper, then the center seal is turned so as to reduce the working number to three, while the other one is cleaned out and refilled. A double center seal of peculiar construction is required for this process. The general idea is to keep four purifiers at work whenever possible, only reducing to three when one is to be cleaned out.

Water-Gas.—In this subject we meet with a genuine revolution. For many years it was the dream of engineers to obtain its hydrogen from water and utilize it for gas. Patent after patent has been taken out for hydrogen processes, which generally were based on two principles—reduction of steam by heated carbon, or by heated iron. In the first process, a mixture of carbonic oxide and hydrogen, theoretically in equal volumes, is produced. In the second process hydrogen only is generated, in volume three fourths that of the carbon gases. As carbon, molecule for molecule, is far cheaper than iron, and as it produces a greater volume of gas per molecule, it is universally used for the production of the hydrogen. The only departure from this rule is where a balloon is to be inflated; then iron may be used to decompose the steam, as it gives a far lighter gas. Thus the hydrogen-gas, so often named by the water-gas engineer, is really a mixture, containing only 50 per cent. of its name-giving element.

The flame of this "hydrogen," as we shall call it, is blue, and practically non-luminous. It resembles the lambent flame seen on the upper surface of a hard-coal fire, its blue color being due to the carbonic oxide it contains. To be of use in gas-lighting, it must be made luminous. It is not easy to say what is in the future, but to-day, whether it be electric light or gaslight, candles or oil, the source of all

artificial illumination is incandescent carbon. To render non-luminous hydrogen luminous, carbon has to be added to it. Imitating the constitution of coal-gas as nearly as possible, gaseous hydrocarbons of the paraffin, olefine, and aromatic series are introduced by the manufacturer. Owing to the enormous development of the petroleum industry, large amounts of petroleum and naphtha have been placed at the disposal of the gas-manufacturer at a low price, and these form very advantageous sources for the production of the hydrocarbons. Without them or some equivalent, water-gas could not be made in competition with coal-gas. To-day naphtha ranges in price from two to five cents a gallon. To carburet 1,000 feet of water-gas, five gallons of naphtha are required. When it is remembered that the total cost of the material from which 1,000 feet of gas is made is less than fifty cents, the importance of cheap naphtha will be evident.

Water-gas processes can be arranged under two heads—regenerative and non-regenerative. Two of the first-named processes may be described, and one of the latter.

The Lowe Process.—All the water-gas processes are the growth of engineering experience, even if, in their original conception, they represent inventions. They are protected by numerous patents. In the Lowe process the coal, usually anthracite, is contained in a cupola or blast-furnace. By blowing air through it, after ignition, for from fifteen to forty-five minutes, it is brought to an intense heat. By the side of this cupola, or gasogen, are one or more cupolas, filled with fire-brick, stacked loosely, like those in a Siemens regenerator. The products of combustion from the gasogen pass through a pipe into the regenerative cupola and heat the contents to a white heat. The next step in the process is to turn off the air and admit steam at the bottom of the coal in the first cupola, or gasogen. At the same time a small stream of naphtha, or crude petroleum, is admitted to the gasogen at its top. The steam rises through the hot coal and is decomposed thereby, forming carbonic oxide and hydrogen. As the gas thus formed in enormous volumes passes upward and out of the gasogen it meets with the inflowing petroleum or naphtha, and the vapors produced therefrom, and carries the rich vapors on into the regenerator. The mixed gas and vapors pass through the hot bricks and acquire a high temperature. The vapor of naphtha is decomposed and converted into olefiant and other light-giving gases. In the language of the gas-engineer, the gas is "fixed." From the regenerating cupola it is conducted through ordinary purifying and scrubbing apparatus to the gas-holders. The gas-making period lasts as long as the heating period. Twice or oftener in the hour the valves are changed, and the steam and naphtha are shut off and air is blown in, and the reverse. Thus the operation is intermittent, gas-making occupying only half of the time. To make the process continuous two sets of apparatus must be used. The operation of coal-gas making is also intermittent, but to

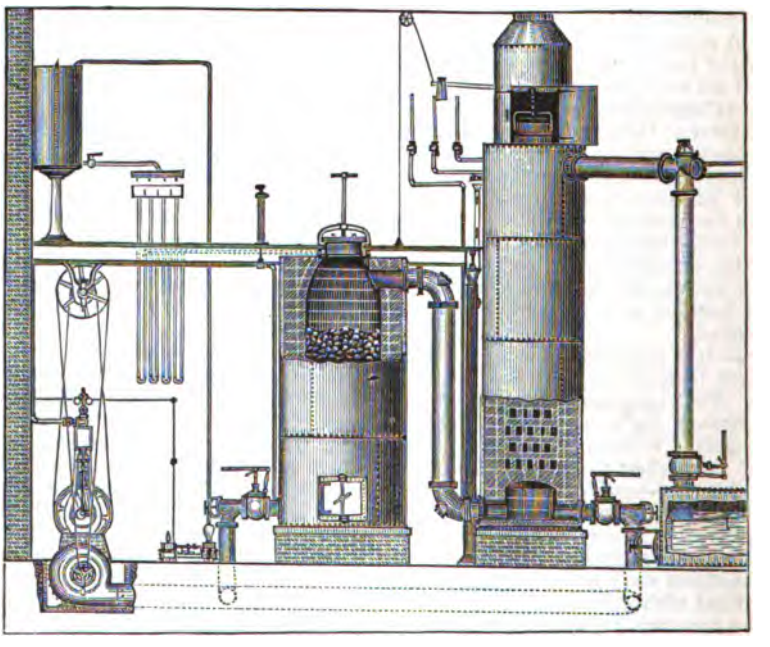


Fig. 1.—Lowe Process.

a less extent. The coal in the gasogen is renewed from time to time, and the interior is cleaned out at longer intervals, but the heat is kept up for long periods.

The distinctive difference between the mode of applying the heat in this and in the ordinary coal-gas process will be noticed. In making gas from bituminous coal the material is heated in close retorts set in a furnace. The heat is applied to their exteriors. Fire-clay is not a good conductor of heat, but the heat of the furnace is pushed until the retort is heated through. All the heat the coal gets comes through three inches of fire-clay. This is an extremely wasteful way of applying heat. In the Lowe process the heat is applied directly, the same surface of the fire-brick being alternately heated by the products of combustion, and cooled by imparting its heat to the gases passing over it. The candle-power of the gas is under good control, being regulated by the admission of naphtha or petroleum.

The Strong Process.—This is applied to the production of hydrogen only. As in the former method, at least two cupolas are essential, one containing coal, the other fire-bricks. Assuming that the heating is taking place, the course of the operation is the same as that already described for the Lowe process. When the heating period is over, the air is shut off and steam is admitted, but the steam enters the apparatus at the farther end of the regenerating cupola. It passes through all the intensely heated brick before it reaches the gasogen. Then, very highly superheated, it passes downward through the hot coal and out of the bottom of the cupola, and is decomposed into water-gas. At the top of the gasogen there is an aperture, through which a quantity of coal-dust is admitted during the gas-making period. Remarkable as it seems, the steam is so highly superheated that its own heat is enough to cause it to be decomposed by the coal-dust. This is so true, that in the original process the current was not drawn through the coal-cupola at all. The gas was drawn off as soon as the contact between the dust and steam had been effected. But it was found that, though the steam was well decomposed, the gas contained a great deal of carbonic-acid gas. To remedy this trouble, the gas was passed downward through the hot coal. Thus in the Strong process the air and steam go in exactly opposite directions; in the Lowe process they follow the same course. The alternate periods of heating and gas-making are sometimes very short; they have been reduced to five minutes each. In this process the same system of direct heating is employed, but no naphtha is used, and a non-luminous heating gas is produced. The use of coal-dust is a noticeable feature in the Strong process. Sometimes as much as 25 per cent. of slack is used, effecting a considerable saving in the cost of material.

The Municipal Process.—The first works to adopt this process, frequently called the Tessié du Motay process, were the Municipal Gas-Works of New York. In the Lowe process, the whole operation of gas-making is one, and can not be divided into steps. The Municipal process, on the other hand, divides itself into three phases: gas-generating, carbureting, and roasting or fixing. The division makes the process susceptible of closer watching and more accurate adjustment. Whether this advantage

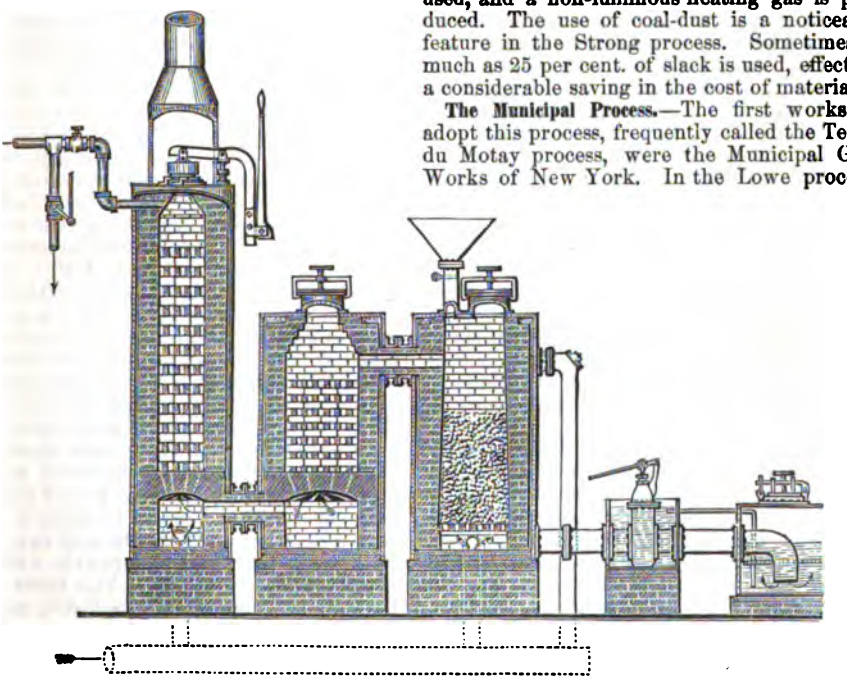


Fig. 2.—Strong Process.

compensates for its greater complexity, and less rational application of heat, is an open question. Theoretically, it is the most imperfect of the systems; practically, it seems to be nearly or quite as good as any. Its expensive apparatus is its worst point. Hydrogen or water-gas is generated just as in the other processes, by alternate admission of air and steam into the lower part of a cupola-furnace filled with incandescent anthracite. When air is admitted to blow up the coal, a valve on the top of an outlet-pipe is opened, and the products of combustion are suffered to escape into the air, burning with a blue flame, six or eight feet high. All this heat goes to waste. After half an hour's blowing, air is turned off and steam admitted. The flame escaping from the top of the cupola quickly changes in appearance, becoming more voluminous and reddish. The top valve is then closed, and the hydrogen passes on through a water-seal into a small gas-holder. From the gas-holder it goes to a carbureter. This is an iron vessel resembling in principle a Coffey's still. It is full of trays, and naphtha, admitted through its top, pours down within it from tray to tray. The sides of the carbureter are double, and filled with water, kept hot by steam. The gas, when carbureted, passes on to benches of retorts. The retorts are what are known as through retorts. They go completely through the furnace, forming fire-clay pipes about 12 by 20 inches in size, of ⊃ shape usually. They are kept at a good red heat, and the gas passing through them becomes fixed. With regard to the hydrogen-holder, although we spoke of the gas going to it, this was not absolutely correct. The holder in question is usually very small, and only acts as a compensator, taking in gas sometimes for an excessive production of hydrogen, at other times remaining stationary, or delivering a small amount. As the adjustment of the carbureting process depends upon the even delivery of hydrogen, the holder is made single-lift to preserve uniformity of pressure.

It will be noticed that, in describing the water-gas processes, nothing has been said of the operations of condensing, scrubbing, or purifying. As soon as the water-gas is made, the distinctive peculiarities of the process end, the subsequent treatment being identical with that to which coal-gas is subjected. For this reason, in the illustrations water-gas apparatus alone is shown. The gas is passed through air or water condensers of any of the usual well-known types, and then through washers or scrubbers. The necessity for washing water-gas would seem less than in the case of coal-gas, as it contains no ammonia, yet it is done. It is then purified by lime.

In the Municipal process fuel is consumed in three places—under the boilers, in the gasogens, and in the retort-furnaces. In the Lowe process one of these sources of expenditure of fuel is cut off; there are no retort-benches to be heated. Theoretically, it is the more perfect process of the two.

The trouble with water-gas is the production of naphthalene. Fortunately, this does not go outside of the works, and it is disposed of there in various ways. It is dissipated by steam, or is dissolved in naphtha, and thus pumped out of the siphons. A strong solution of naphthalene is sometimes obtained, that deposits on evaporation large quantities of the obnoxious crystals in a solid mass.

Other methods have been devised for the production of this gas, but the principal types follow the ones described. Retort processes have been used to some extent. In these, anthracite coal is charged into retorts, heated by a fire just as in ordinary coal-gas making, and steam is passed through, becoming decomposed into hydrogen and carbonic oxide. The direct heating, the best characteristic of the water-gas process, disappears; but for small works such processes are quite available.

With regard to the economy of the different water-gas processes, they appear at the present prices to have rather the advantage over coal-gas. Yields varying from 35,000 to 50,000 cubic feet of gas per ton of anthracite coal are claimed; while four and a half to five gallons of naphtha or raw petroleum are required to carburet 1,000 cubic feet.

Wood-Gas.—One works in New York has adopted wood as one of its sources of gas. It has the same objection that attaches to water-gas—it contains a large percentage of carbonic-oxide gas. As it is of very low illuminating power, it has to be enriched with naphtha. The process has been little used.

To give some idea of the importance of water-gas, it need only be said that in New York alone something like 1,500,000,000 cubic feet of it are made annually. Of this quantity, nearly one third is carbonic oxide, so that its practical harmlessness is pretty well proved.

Other Gas Apparatus.—The past few years have witnessed the completion of some extraordinarily large gasometers, or gas-holders, as the gas-engineer more correctly calls them. One in London, the largest in the world, has a capacity of 5,500,000 feet; in New York there is one at the Municipal Gas Company's works, with a capacity of 2,000,000, and two at the New York Gas-Light Company's, with a capacity of 1,500,000 each. The latter works have also the largest station-metre, as far as drum capacity is concerned, in the world. Each revolution of the drum passes 3,000 cubic feet of gas.

Gas-Stoves.—This industry has developed, even in this country, where gas is comparatively dear, into a business of considerable extent, and their construction has been improved upon until they are as good in every respect as coal-stoves. In England vast numbers of them are in use; but there several conditions make their introduction easier. Gas is far cheaper there than here, and coal is not so

much cheaper relatively. Thus, for cooking, they are quite economical. Even here they are nearly as economical as coal-burning ranges, on account of their immediate lighting and extinguishing. No kindling-wood is required, and no fuel is used except what is required for the operations of cooking.

Gas-Engines.—A great deal of work has been done in this field by inventors, and a number of engines are in the market. Their advantages for small and intermittent power are great. They start at once into full action, are immediately stopped, use no fuel except when running, and require no engineer. They are much more bulky for the same power than coal-engines, but far excel the latter in economy. There is a certain amount of trouble in starting them, but it is a minor disadvantage. Twenty cubic feet of gas per horse-power per hour is as low as the best of them can go. They have frequently been used for running dynamos, but the electricians complain of their want of steadiness.

Natural Gas.—The use of gas from gas-wells in the petroleum-fields has grown into an industry of some importance. Several towns are now lighted with it, and it is used also for stoves and fires. For many years it has been used under the boilers at petroleum-wells, many of which produce it.

Gas-Burners.—The great improvement in this regard refers to regenerative burners, which will be found described under their proper heading.

General Observations.—For many years a fierce war has been waged between water-gas or naphtha-gas and coal-gas. To-day, in spite of its success, water-gas is still the subject of controversy. It has certain objections. It contains about one third of its volume of carbonic-oxide gas, and this constituent makes it unquestionably more poisonous to those unfortunate enough to inhale it. Its higher specific gravity, combined with its usually high illuminating power, causes less of it to be consumed *pro rata*. Where it has been substituted for coal-gas in entire districts, the gas delivered has run down in quantity very seriously. It might be supposed that this trouble was curable by making it of lower illuminating power, and increasing the pressure. But when of less than twenty candle-power the gas-flame is too white and cold-looking, and to make it of good appearance a high illuminating value must be maintained. But where the quantity consumed by the individual decreases, an inducement is offered to others to burn it, and by giving more light for the same money a healthful impetus is given toward an increase of consumers. The use of uncarbureted gas for heating purposes has been tried to a limited extent, but the necessity of two sets of mains, one for heating and one for illuminating gas, has operated to prevent its introduction to any large extent. It possesses about half the heating power of illuminating gas, and, if an incandescent burner could be devised by which it could be made light-producing, we might hope to soon see its introduction on a large scale. Such burners have been tried, but a successful and practical one is yet to be invented.

GAS-LIGHTING, REGENERATIVE SYSTEM OF. Comparisons of the cost of gas and incandescent electric lighting, and the forecasts of the relative industrial position of these two modes of illumination, have so far been based upon the results at present obtained with the former illuminant. While it has long been known that the consumer realized but a portion of the light which the gas was capable of giving when burned under the best conditions—that is, with clean burners and proper pressure—it has not been supposed that results surpassing these latter were practicable. Recent progress, however, in the construction of burners has shown that gas-lighting has by no means reached its limit, but that results are obtainable which are much beyond anything that could have been reasonably expected but a few years ago, and which may enable gas to hold its own as an illuminant against all comers. This progress consists in applying to gas-lighting the regenerative principle, long and successfully adapted to the industrial applications of fuel, chiefly in metallurgical operations. The essential feature of this system is, the utilizing the heat of the escaping products of combustion—which would otherwise be wasted—in raising the temperature of the air entering to support combustion, as also that of the combustible.

Whatever the system of illumination, the light is always due to the incandescence of a solid body. This solid body may be a fine wire or filament of a suitable material, as in the incandescent electric light, or a piece of lime plunged into a non-luminous flame, as in the lime-light, or may consist of innumerable fine particles of carbon distributed through the flame. This latter is the condition realized in all the luminous flames, whether of oils or gas. Such a luminous flame consists of a body of inflammable gases which are either non-luminous, as hydrogen or carbonic oxide, or which are but feebly luminous, such as marsh-gas, and a small percentage of heavy hydrocarbons to which the luminosity is due. These latter consist of hydrogen and carbon in chemical union, the carbon of which is set free by the heat of combustion. To these glowing particles of carbon, detained momentarily in the envelope of burning gas, and excluded from the air, the light of the flame is due. That the light yielded may be the greatest possible, these carbon-particles must be raised to the highest attainable temperature. How important this is, will be understood when it is remembered that the amount of light yielded by any incandescent body increases much more rapidly than the temperature as this latter is raised. The precise relation between the light and the temperature has not been determined, and probably would not be found capable of

expression by a simple formula. All bodies begin to be self-luminous (so that they can be seen in the dark) at a temperature a little under 1,000° Fahr., while 2,500° Fahr. is probably the temperature of a gas-flame. In this case, while the temperature has been increased

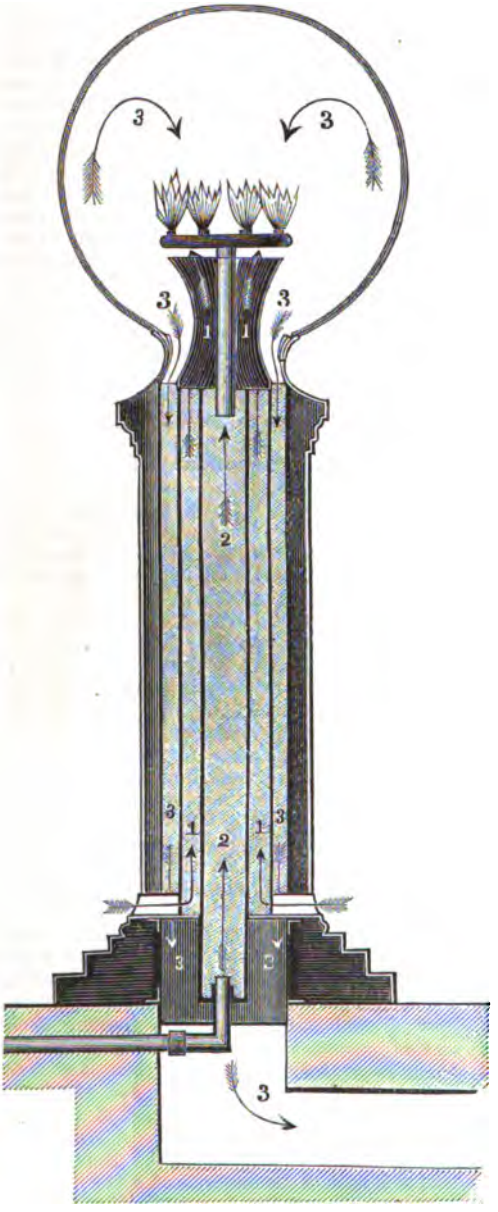


Fig. 1.

2½ times, the light has increased more than a hundred-fold. This ratio of increase does not hold as the temperature is still further increased, but within the limits of increase at our command the light certainly augments in a vastly greater ratio than the temperature. Dr. John W. Draper found that the light yielded by a strip of platinum-foil at a temperature of 2,600° Fahr. was 36 times that given by the same body when raised to only 1,900°; and experiments with the incandescent electric light have shown that an increase of the current energy—which in this case is all expended in the production of heat—of from 28 to 37 per cent. was sufficient to double the light of a 16-candle lamp. The exceeding brilliance of the arc-light is due to the enormous temperature to which a small mass of matter is raised.

In the electric light, whether arc or incandescent, the temperature attainable is limited solely by the power of the incandescent material to resist the disintegrating effect of high temperatures, but in all forms of lights due to combustion this limit is imposed by the combustible itself. The maximum temperature which can be obtained with a hydrogen-flame burning in air is about 2,000° C., and with carbonic oxide a few degrees less, while, as stated above, the actual temperature attained in a gas-flame as ordinarily burned does not much exceed 2,500° F., or 1,371° C. The lower temperature in this latter case is largely due to the cooling of the flame by its exposure to the air, and consequently, if this cooling can be avoided, the amount of light yielded by a given flame ought to be greatly increased. This the regenerative burners have shown to be the case, and further, that the increased effect is in proportion to the completeness with which this is accomplished. Large burners, in which the surface of flame exposed is smaller in proportion to the gas burned, and the cooling effect consequently less, give results considerably higher than those realized in smaller burners.

While the principle might seem easy of application, practically it has not been found to be so, and it is only in the past few years that satisfactory commercial apparatus has been constructed. A burner, in which a portion of the air supplying the flame was heated, was described by an Englishman named Young as long ago as 1854; and experiments were conducted by Frederick Siemens, to whom the successful application in recent years is due, fully twenty years ago. Mr. Siemens did not succeed in his early experiments, and the subject was abandoned by him, until the advent of the electric light turned his attention to the production of powerful foci of light by means of gas. In a lecture delivered in the latter part of 1879 before the Society for the Promotion of Industry in Prussia, Mr. Siemens describes several forms of apparatus in which he had endeavored to carry out the principle. The lamp shown in Fig. 1 illustrates the

mode in which this was done. A bunch of ordinary flat flames are inclosed in a glass globe, which is wholly closed except at the base, which rests upon a column provided with passages for the admission of fresh air and the exit of the products of combustion. These latter, rising from the flame, encounter the obstruction offered by the globe and are turned downward, following the inner wall of the globe, as this is the coolest path. They then pass downward through the annular space marked 3, 3, and by a flue out of the apartment. The entering fresh air passes upward through the an-

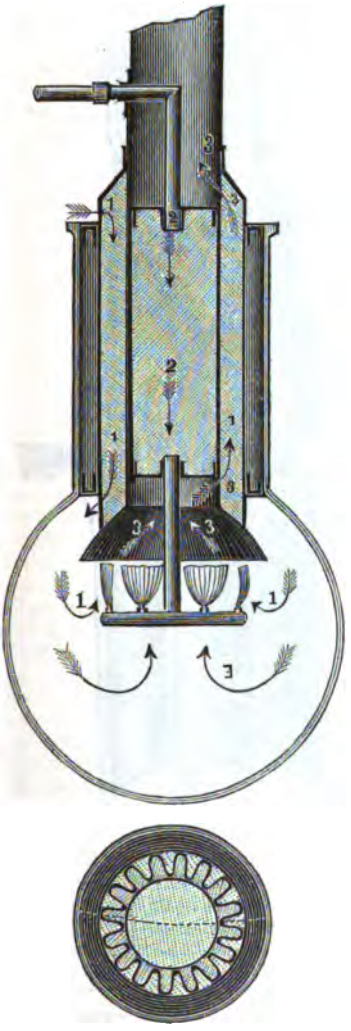


Fig. 2.

nular space marked 1, 1, to the flames, and the gas through the central space 2. The heat of the escaping products of combustion is stored up in the metal surfaces of the burner, and the gauze or perforated metal with which the passages are filled, to be given out to the entering air and gas.

In his earlier experiments Mr. Siemens supposed that separate passages would have to be provided for the products of combustion and air in the globe, and the difficulty of accomplishing this was the chief reason of his abandoning the project. Later experience with regenerative furnaces, as he says in his lecture, showed him that this was not at all necessary, as the paths naturally taken by the air and products of combustion, due to their different temperatures, were well marked. In Fig. 2 is shown a suspended lamp; and in Fig. 3, one arranged for a bracket. In this latter the air enters at the lower side of the regenerator, and the products of combustion pass out at the upper. Mr. Siemens suggests that the regenerator be slowly rotated, so that the passages

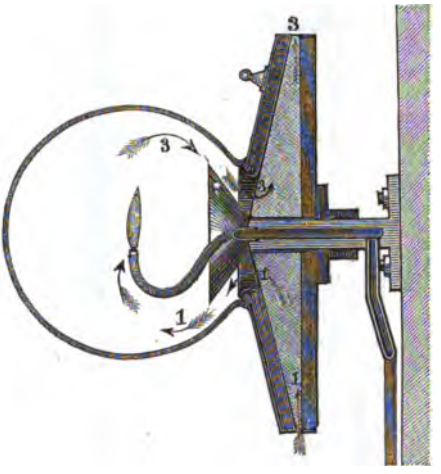


Fig. 3.

heated by the products of combustion will be successively traversed by the entering air. An increase of six times in the illuminating power of the gas was claimed by Mr. Siemens for this apparatus, but this must have been a considerably exaggerated estimate, as it appears to have been entirely abandoned in favor of a burner of different construction, the best yield of which does not reach more than half that result.

This latter burner is shown in Figs. 4 and 5. It consists essentially of a central annular chamber, B (Fig. 4), down through which the products of combustion pass to an escape-flue, G. The gas issues from the upper ends of a ring of small copper tubes, one fifth of an inch in diameter, surrounding this central chamber. The air to support the combustion enters through the annular space C, between the central chamber and an exterior casing. The central regenerative chamber, as well as the annular air-space, is packed with a filling presenting an extended surface to the hot gases and entering air, so that there is a very perfect interchange

of heat. The length of the luminous flame is governed by a porcelain cylinder which rests upon the top of the central chamber. The flames sweep upward around this, and downward over its upper edge, presenting a beautiful ball of flame. Two notched plates at the level of the gas-orifices serve to divide the upward column of air, and cause it to impinge upon the flame. When the burner is first lighted, the products of combustion pass directly upward through the chimney *d*, and out by the

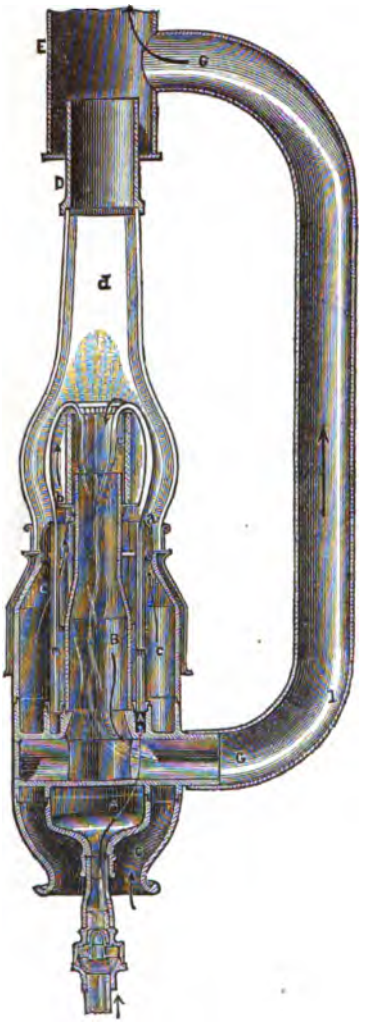


Fig. 4.

escape-flue E. But as this becomes heated, the draught through the pipe G becomes sufficiently powerful to draw the flame downward. Some little time has to elapse before this takes place, and the burner therefore can not be turned on full at once. In Fig. 5, the side draught-pipe G is replaced by a central pipe, H; otherwise, the construction is the same. In the form finally adopted, the side draught-pipe is retained, but, instead of the closed chimney *d*, the flame is surrounded by a short glass cylinder, which simply serves to protect the flame from side-draughts,

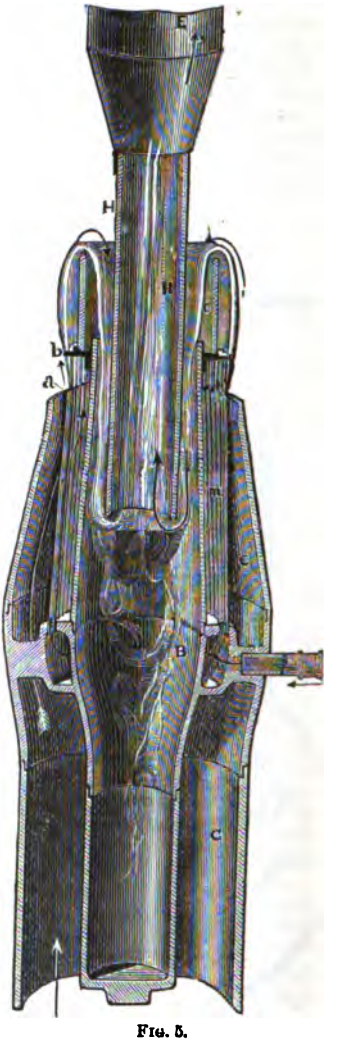


Fig. 5.

the ascending current of hot air being strong enough to control the form of the flame.

Experiments made in France with this burner, with twelve-candle gas (twelve candles to the five-foot), showed the results given in the following table:

NUMBER OF BURNER-TUBES.	Consumption per hour.	Light produced in carcels.	Gas burned per hour and per unit of light.
	Litres.		Cubic feet.
10	150	2 to 3	1·75 to 2·6
15	250 to 300	6 to 7 carcels	1·4 to 2
18	650	15	
24	800	20 to 21	1·3 to 1·4
32	1,605	46 to 48	1·2 to 1·25
48	2,200	72	1

English experimenters found that, with the London sixteen-candle gas, results were obtained varying from 5·30 candles per foot to 7·13, while in this country careful tests have shown, with eighteen-candle gas, as high a result as ten candles per foot, in burners consuming 50 feet an hour. This result is nearly three times that obtained with the ordinary flat flame. Burners of such large consumption are of course suitable only for the lighting of streets, areas, and large interiors, and hence this great economy is not attainable by the ordinary consumer. While the small burners give a decided advantage over the ordinary domestic lights, still the cumbrousness of the lamp and the care required in operating it render it unsuitable for domestic lighting.

Other inventors have, however, taken up the problem, and, working in the direction pointed out by Siemens, have succeeded in producing burners well suited to domestic lighting, and free from the objectionable features of the Siemens. A burner of this kind has been brought out in England by Mr. Grimston,

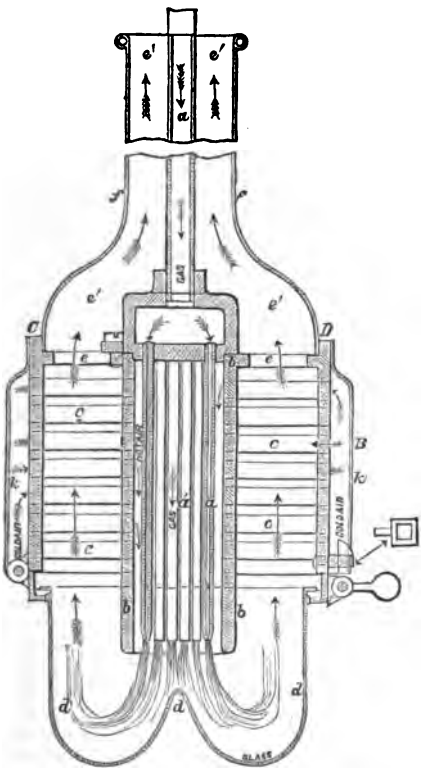


Fig. 6.

an electrical engineer in the employment of Siemens Brothers. The body of the burner, instead of being below the flame, as in the Siemens, is placed above it, and the flame burns downward, the light being wholly unobstructed by any portion of the fixture. The construction is shown in Fig. 6. The burner consists of a ring of tubes, *a*, *a*, arranged within an annular casing, *b*, *b*. Lateral tubes, *c*, connecting the casing, *b*, *b*, with a concentric outer one, admit air to the flame. The annular space crossed by these tubes constitutes the flue through which the products of combustion pass upward to the chimney *e'*. A glass globe, *d*, made with an indentation or nipple at its center, incloses the flame, which takes the form of an inverted convolvulus. The extraction of heat from the escaping products of combustion is so complete that the air, it is claimed, reaches a temperature of from 1,100° to 1,200° Fahr. The burner may be turned on full at starting, and is not liable to smoke. It therefore requires no more attention than any ordinary flat flame. It can be constructed of any size from three-foot upward, and is reported to yield almost as good results in the smaller as in the larger size. In burners consuming twenty feet an hour, the light yielded per foot of gas is seven candles, or just double that given by the standard Argand, consuming five feet an hour, and the results in the smaller burners are but little short of this.

A burner which can be made in small sizes, and is therefore suitable for domestic lighting, has also been brought out in this country by Mr. A. B. Lipsey. It may be briefly described as an inverted Siemens burner. It consists of a central flue, provided with a cylindrical porcelain extension at its lower end. The burner is an inverted Argand encircling the central flue, the flames from which burn downward around the porcelain, and turn upward and inward at its lower edge. The air to support combustion is admitted through an annular space above the flames, formed by the wall of the central flue and an outer casing. A globe fitting tightly against a flange or plate just above the burner-tips incloses the apparatus. This design does not admit of as high heating of the air as either the Siemens or the Grimston, but the downward burning of the gas secures complete combustion, and the results obtained compare favorably with them. No tests have been made of the later and more perfect burners, but those made with two sizes of some of the first burners constructed gave, for a burner consuming 8·50 feet an hour, 4·62 candles per foot with 17·47-candle gas, and 6·52 candles per foot with a 23-foot burner with 17·05-candle gas.

The results so far obtained with regenerative burners make it reasonably certain that, with the sizes suitable for domestic illumination, a lighting effect double that now obtained can be depended upon. Such a burner as the Grimston is universally applicable, and as there is nothing about it to get out of order, and it requires no more attention than the ordinary flat-flame burners, there seems to be no impediment to its wide introduction. As burners of this kind lend themselves readily to sanitary

demands—now everywhere becoming recognized as imperative—since the products of combustion may be conveyed out of the apartment, they at once remove one of the most formidable objections to gas-lighting. They also solve the problem of cheap gas, as the doubling of the illuminating power of a given amount of gas is equivalent to halving the price. The introduction of so great an economy in the burning of gas can not but profoundly modify the commercial status of the gas industry, and alter greatly its prospects of permanence as an illuminant.

GEOGRAPHICAL PROGRESS AND DISCOVERY. **Arctic Regions.**—The Arctic campaign of 1883 opens a new era, in which investigation is directed to the solution of physical problems rather than to discovering new islands or seeking an approach to the pole. The plan of international circumpolar stations was the idea of the late Lieutenant Weyprecht, the discoverer of Franz-Josef Land, and was warmly seconded by Count Wilczek, the patron of his famous expedition. After its discussion at the Meteorological Congress at Rome, at the International Polar Conference at Hamburg in 1879, at the second meeting of the same at Berne in 1880, and at the third meeting at St. Petersburg in 1881, it passed into the hands of the governments which promised to establish the several observatories. Prof. Wild, of St. Petersburg, President of the Polar Commission, announced in May, 1881, that the eight stations required were provided for. The simultaneous observations were to be begun as soon as practicable after August 1, 1881, and to continue until Sept. 1, 1883. Denmark arranged to establish a station at Godthaab; America took up the northernmost position in Smith Sound, on Lady Franklin Bay; Germany chose Cumberland Sound, on the west side of Davis strait; England located its observers in the center of the Hudson Bay territory at Fort Rae, near the Great Slave lake; a second American station was established at Point Barrow; Russia occupies the mouth of the Lena, with a branch station at Möller Bay, in Nova Zembla; Norway selected Bosekop, in the Alten Fjord; Holland chose Dickson's harbor; Sweden took Spitzbergen; and Austria sent observers to the gloomy island of Jan Mayen. The Finnish Government fitted up a meteorological station at Sodankyla, on the Scandinavian isthmus, the Helsingfors Observatory furnishing the magnetic observations. Germany determined to dispatch an observer to the coast of Labrador, which extends along the line of minimum depression, with the expectation that he would obtain the assistance of Moravian missionaries. France undertook simultaneous observations in the Antarctic regions, establishing a station near Cape Horn. Germany aids in the investigation of Antarctic phenomena, having sent out an expedition to one of the islands of South Georgia, in 54° 30′ south latitude, and 41° 20′ 15″ west longitude. These two stations in the southern hemisphere are to be aided by the observatories at Cape Town and Melbourne. The investigations of the fifteen principal and branch stations are supplemented by meteorological and magnetic observations taken on the 1st and 15th of every month at various permanent observatories in the temperate zone and within the tropics, as well as upon naval and merchant vessels. The English Government co-operates with the International Polar Commission by undertaking to tabulate the daily meteorological phenomena of the North Atlantic Ocean as reported by seamen, who are invited to send in the data to the Meteorological Office. The subjects of inquiry, which are obligatory at all the international stations, are meteorology, magnetism, the aurora, and astronomy. Magnetic and meteorological observations are taken hourly during the whole time, and on the 1st and 15th of each month magnetic observations are made synchronously at all the stations, every five minutes. The magnetic investigations embrace the three elements of declination or variation, inclination or dip, and intensity. Most of the stations are within the belt, whose pole is at one side of the north pole, that incloses the region of Arctic magnetic phenomena, and is the seat of the luminous arc of the aurora. This circle, called sometimes the "aurora ring," touches the northwest part of Norway, passes south of Iceland and Greenland, across the northern part of Labrador and Hudson Bay territory, emerging into the Arctic Ocean at Point Barrow, touching the Siberian coast only at Cape Chelyuskin, and crossing the northern part of Nova Zembla. Two of the stations, Point Barrow and Bosekop, are on this belt of maximal auroral phenomena, which is believed by many scientists to be the seat of magnetic energy, throwing off electric currents to the north and to the south. The study of the changes in the ice and other physical conditions of the polar basin, is expected by eminent meteorologists to throw much light on the movements of the wind and the circulation of the ocean. The fact that there are two focal points of extreme cold, one in Siberia and one in the interior of British North America, instead of a progressive lowering of the average temperature up to the geographical pole, is a recent discovery which gives interest to the comparative thermometrical readings taken at the international stations. Besides the obligatory observations in the branches mentioned above, the parties are desired to take observations in many other departments of inquiry, including temperature of the soil, snow, and ice, on the surface and at various depths, evaporation, terrestrial magnetism, galvanic earth-currents, and observations of earth-currents in close connection with magnetic and auroral phenomena, hydrographical, spectroscopical, and pendulum observations, as well as observations on atmos-

pheric electricity, the growth, structure, and motion of ice, the physical properties of sea-water, etc. It is also recommended that samples of air should be collected for analysis, besides collections in the departments of zoölogy, botany, geology, etc.

Successful observations, made by several of the International Polar Expeditions just described, have been reported. Among the members of the Austrian expedition not a trace of scurvy, or any other disease, was found during their long exile of sixteen months at Jan Mayen Land. Wholmuth, the commander, has telegraphed that his observations have been perfect, his collections rich, and his photographs numerous. Capt. Dawson, who commands the English expedition at Fort Rae, reports excellent work by his party. The auroras, he says, have not been of remarkable brilliance, though the spectroscope observations have been very satisfactory. From the Finnish station at Sodankyla, Herr Sophus Tromholt sends accounts of startling novelties. He has experimented on a gigantic scale with the aurora borealis. By means of an ingenious arrangement of batteries and wires along the face and up the summit of a lofty hill (1,000 feet high) he has been able to produce an artificial aurora differing in no respect in appearance and spectroscopic analysis from the genuine aurora. This phenomenon is one that has puzzled investigators for centuries, and even now the most diverse opinions are entertained as to its origin and nature. These experiments of Tromholt, when combined with the simultaneous observations of various investigators, are likely to go a long way toward the final settlement of the question. Dr. Tromholt has completely failed in obtaining any photograph of the delicate phonomenon, even by using the most sensitive dry plates. Thus, brilliant as the northern lights are, the actual amount of light contained in them is apparently small.

The great interest of the year in Arctic exploration has centered about the efforts made for the relief of Lieut. Greely and his party at the meteorological station in Lady Franklin Bay. This officer had sailed for that point in June, 1881, to establish a colony in accordance with an agreement made by the United States Government, as narrated above. It was expected to maintain this post until 1884, and Lieut. Greely was to be visited by a vessel carrying supplies in 1882 and 1883. If not visited in 1882, he was ordered to abandon his station not later than September 1, 1883, and retreat southward by boat, following closely the east coast of Grinnell Land. In 1882, July 8th, an expedition sailed from St. John's, Newfoundland, but was obliged to return without communicating with the party at Lady Franklin Bay. In 1883 a more determined effort was made for this purpose. The same vessel which carried Greely and his associates, the Proteus, was chartered for this service. The United States ship Yantic was ordered to accompany the Proteus as far as Littleton island, rendering such aid to the relief vessel as might be necessary. The officers of the Proteus were as follow: Lieut. E. A. Garlington, U. S. A., commanding; Albert G. Colwell, U. S. N., lieut.-commander; Dr. J. S. Harrison, surgeon; Sergeant John Kenny, Corporal Frank Ewell, and six other men, all being detailed for the expedition on account of their service in the Northwest, where they had become inured to the extreme cold. (See GREELY RELIEF EXPEDITION.)

The British Circumpolar Expedition, under the command of Capt. Dawson, reached Fort Rae August 30, 1882. This station is on the northern arm of the Great Slave lake. The party, consisting of Capt. Dawson and three soldiers of the artillery, arrived at their destination from Winnipeg, by ascending the Saskatchewan to Prince Albert settlement, crossing the prairie to Green lake, proceeding by way of Buffalo lake and Methy lake, and down the Athabasca river to Lake Athabasca, and then descending the Slave river to Fort Resolution on the Great Slave lake.

The Dutch steamer Varna and the Danish steamer Dijmphna, which had gone out to explore the Kara Sea, utterly failed in their mission. The former was wrecked in the Kara Sea, while the latter narrowly escaped. The ill success of this expedition is thought to dispose of the notion that there is a practicable northeast route for merchant-vessels from Norway to Bering strait. The Dutch exploring vessel, William Barents, left Amsterdam on the 5th of May in search of the Varna and Dijmphna. This was her sixth Arctic voyage. The William Barents was heard from at Archangel on the 21st of June. While she was in the Dwina the weather was beautiful, the thermometer registering over 70° in the shade, and at midnight the temperature was not much lower. Bees hummed through the rigging of the Barents, and butterflies lighted on her decks; while the mosquitoes were actively engaged in every corner of the ship.

Capt. M. S. Healy, of the United States steamer Corwin, detached Ensign G. M. Stoney on an expedition to explore a large river reported by the natives to debouch into Hotham's inlet, Alaska Territory. A dinghy, with two men armed and equipped with ten days' rations, was placed under Ensign Stoney's command. Proceeding some twenty-three miles along the northwestern shore of the inlet, Stoney at length struck the mouth of a river of considerable size. Ascending this in a southeasterly direction for two days, he struck the main stream, which proved to be a river three quarters of a mile in width, having nowhere less than two and a half fathoms of water. He ascended the river fifty miles from its mouth. The banks were generally thickly timbered with birch, alder, and spruce, some of the trees attaining a height of forty feet, with twelve inches diameter at the base. The natives re-

ported that the river held its depth of not less than two fathoms and its width of half a mile for not less than 300 miles beyond where Mr. Stoney turned back. They further reported that, by making a small portage near the head of this river, they could reach another stream flowing northward into the Polar Sea. The natives, many of whom had evidently never seen a white man before, were kind and harmless.

Baron Nordenskjöld sailed in May for Greenland, with the intention of exploring the interior in order to test a theory of his that, after crossing a belt of ice which skirts the coast, he would find an open country possibly mountainous, and probably covered with forests. He also hoped to find the remains of the ancient colony of Österbygden on the coast east of Cape Farewell, founded by Norwegians in the middle ages. These theories were generally considered chimerical, the interior of Greenland having been found to be covered with one great glacier, and all reports of a plateau free of ice having been considered mere Esquimau wonder-tales, while the eastern coast is not now habitable, and there is no reason to suppose that there has been any considerable change in its climate during historic times. Baron Nordenskjöld's party was admirably equipped, and included two Esquimaux and a missionary who served as interpreter. The first attempt of his vessel, the Sophia, to reach the east coast through the sounds north of Cape Farewell, Ikek, and Ikernsak, failed. She was obliged to put to sea and skirt the outer edge of the great ice-pack which borders the east coast and makes approach almost impossible. For a long time the Baron sought in vain for an opening, but on the 4th of September, being then abreast of Cape Dan, under whose shelter he thought the ice likely to be less closely packed, he resolved to make an effort to work his way through. The belt was two or three miles broad, but happily there was no current, and the Sophia succeeded in pushing her way through and reached an anchorage in a fiord free from ice-floes, about latitude 65°. This they named Auleitsivik Fiord and made the starting-point of the expedition. At first their progress was slow, not over two and a half miles a day, but they gradually increased their rate of travel to six or eight miles a day. For a time the land rose in height very rapidly, so that on the ninth day they found themselves 2,400 feet above the level of the sea. From this point the ascent was so gradual that it could be discovered only by means of the barometer. On the eighteenth day an altitude of 4,600 feet was reached. Here Nordenskjöld determined to turn back, but he remained in camp and sent his Esquimaux farther into the interior. They were gone fifty-eight hours and on their return said they had explored a distance of seventy-two miles, and reached an elevation of 6,600 feet. They had seen no trace of land above the surface of the ice, nothing but an unbroken expanse of ice covered four feet deep with snow. Nordenskjöld now admits that no ice-free land, no vegetation, and no moraine, exist in the interior, at least between 68° and 69°. The absence of protecting coast-ranges, and the gradual rise of the land to a plateau, would be sure to produce an interior covered with ice. Nordenskjöld was equally unfortunate in his archæological researches. The scientific world long supposed that of the two villages founded by the Norsemen, the Vesterbygd was on the west coast and the Österbygd on the east. Modern research, particularly that of Graah's expedition about fifty years ago, demonstrated that this was an error due to the imperfect reading of the Sagas, and that both bygds were on the west coast, the one a little farther east of the other. Nordenskjöld had refused to accept this later opinion, but the result of his journey confirms it. Such ruins as he found were entirely of Esquimau villages, and there was no evidence of any other habitations east of Cape Farewell. The expedition was, however, in many respects successful. It reached a part of the coast of Greenland which has not been approached since the days of Eric the Red, for, though north of the Arctic Circle the coast has been often visited, between 62° and 69° it has been so ice-locked as to be unattainable. The observations made during the journey over the ice of the interior have an important bearing on the glacial theories of the geologists, and fine collections were made in geology, paleontology, zoölogy, and botany. In many of the cavities in the ice Nordenskjöld found a muddy sediment which he called kryokonite. He believed it to be formed of dust brought by the wind over the ice, and mixed with a metallic substance which he is convinced is metallic dust from cosmical space. In this kryokonite a kind of fungoid vegetation found a holding-ground. After a very dangerous passage out through the ice-belt, the Sophia attempted to reach land again in a higher latitude, but the pressure of the ice was so strong that Nordenskjöld thought the risk too great and shaped his course for Reykjavik. It is considered that a properly-built ship would be able in most years to anchor on the southeast coast, but she would have to seek her place and opportunity with great care, and would not be likely to find a regular "land-water" within the ice-pack. This conclusion is the same as that arrived at by Graah, and more recently by Mourier, and is supported by other Danish settlers and explorers.

South America.—A pass across that part of the Andes that divides Chili from the Argentine Republic has recently been discovered, and is likely to become of great military importance. Hitherto the only practicable passes known have been the Patos and the Cumbre, those farther north being very difficult of ascent, and in most cases approached over barren regions. The Cumbre is the more accessible, but is so narrow and winding as to make it impas-

sable if held by a very small opposing force. Yet the Andes extend over a thousand miles between Chili and the Argentine Republic, with an average elevation of 13,000 feet. Any war between these countries would have to be carried on by sea. The newly-discovered Barilochi Pass is near Lake Nahuelhaspi, where the continent narrows and forms the peninsula of Patagonia, and is easily approached, while the mountains at this point are not more than half the height of the same range a few miles farther north. Its commercial importance is of the highest. Railroad communication from the Atlantic to the Pacific has long been needed, and a road between Buenos Ayres and Santiago is already in progress, designed to run through one of the difficult passes already mentioned. A road from the Gulf of San Matias, across northern Patagonia, through the Barilochi Pass, would be only half as long, and would traverse a temperate region, where rain takes the place of the snows of the north. The exact height of the pass is not yet known, but the civil engineers will doubtless soon give the results of their investigations.

Asia.—A new route to Central Asia has been officially opened during the year by Col. Alexandroff and Gen. Tchernaieff, of the Russian army. The route was discovered by a fish-merchant named Varnishin, who several times crossed it with his caravan. It begins at the Bay Yaman Aurakti, in the Caspian Sea, passes through Khiva, Bokhara, and the Yarafshan, and so reaches Kungrad, a distance of 295 miles. The new route runs through well-populated regions instead of the barren steppes traversed by the old, and except for thirty miles' distance is well watered. Gen. Tchernaieff intends to sink wells along this part of the course. The road-bed is gravelly and firm. It is suggested that a railroad may some time be made along this new route.

Prof. Ed. Sachan has published the results of his journey in Syria and Mesopotamia, undertaken at the request of the German Emperor. From Beirut Prof. Sachan went by way of Damascus and Palmyra, Aleppo and Biredjik, on the Euphrates, to Urfa, thence to Mosul and finally to Alexandrette. An expedition, under the direction of the Palestine Exploration Society, left England in October with the intention of exploring the Wadi-el-Arabah and the basin of the Dead Sea, and the Jordan valley as far as the Sea of Galilee.

Africa.—The Congo river region has been commanding more and more attention since Stanley began his explorations. The past year has seen additions to our knowledge of its inhabitants and resources, and also very eager discussions as to what nations the protectorate of its commerce belongs to. Merchant-steamers of 5,000 tons can now ascend the river as far as the falls, a distance of 120 miles, and a considerable trade is carried on by English, French, Dutch, and Belgians. Beyond these Falls of Yellala, Stanley discovered the river to be again navigable, and constructed a hundred miles of road around them. Over this road he has transported three steamers and more than two thousand packages to the middle and upper Congo. In one of these steamers he ascended the Quango, one of the tributaries of the Congo, for a distance of two hundred miles. He has this year gone as far as the equator, and established two more stations. He has also discovered another lake, which he calls Lake Mantumba, and explored the Malundu river for a distance of a hundred miles. He finds it a deep, broad, and navigable stream, draining a country rich in gums, rubber, camphor, ivory, and many other articles of high commercial value. He reports a dense population, very enterprising and industrious. Mr. Stanley mediated successfully between some of the warlike tribes, and received the title of "Father and Mother of the country."

M. de Brazza left Bordeaux on the 23d of March, stopped for a day or two in Senegambia, and reached the Bay of Loango, north of the mouth of the Congo. The Bay of Punta Negra was already in possession of the advance division of his party. The Loango anchorage is considered to be one of the best between the Gaboon and Congo, but De Brazza had hoped to be able to land near the mouth of the Konilon, by means of which communication could be kept open between the French possessions on the Gaboon and territory on the Congo granted by King Makoko. He found Mr. Stanley's agents established there, and was therefore obliged to change his plan. However, instructions had been given the latter that friendly relations were to be maintained with the French, and as yet no difficulty has arisen between the rival parties.

The German explorer, Lieut. Wissmann, has been investigating a region lying south of that traversed by Stanley, but watered by numerous southern tributaries of the Congo. He crossed the continent, starting from St. Paul de Loando and passing through the empire of the Muato-Janvo, a portion of country which is fertile and densely inhabited. The account of these tribes, when published, is expected to prove a valuable contribution to African ethnology.

Mr. Joseph Thompson is engaged in exploring the country from Mombosa to the southeast coast of Victoria Nyanza. He is to include Mt. Kilimanjaro, a peak of great height covered with snow, and Mt. Kenia. To the westward of these mountains, toward the Victoria Nyanza, stretch great plains inhabited by the Masai, a warlike people who are constantly committing depredations upon the peaceful negroes of the coast. Mr. Thompson at latest accounts had fallen upon the track of Dr. Fischer, a German traveler who had roused the hostility of the natives to such a point that Mr. Thompson was compelled to turn back to Taveta. He is in the service of the Royal Geographical Society.

Dr. Emile Riedeck, well known to the scientific world as a traveler and collector, is fitting out an expedition for Northern Africa. It is to be commanded by Herr Gottlob Adolf Krause, an accomplished linguist, and its object is to be the investigation of the languages and social state of the peoples about the Niger, Berne, and Lake Tchad. Herr Krause has spent much time in Africa, and understands languages and dialects spoken between Sehan and the upper Senegal. He intends to follow the Niger to a distance of three hundred miles, and then choose some locality as the center of his base of operations. His explorations will include the east and central territory of the Felata Fulbe, and that of the Haussa Musuk tribes.

Diligent explorations in the Welle region are being carried on by travelers of various nationalities. Lupton Bey, an Englishman occupying the post of Egyptian governor of the Bahr-Gayal district, has reported the discovery of a great lake which he believes to be the basin of the Welle; and Dr. Yunker, a Russian, is exploring the course of the same stream. The Welle was long supposed to be a tributary of the Congo, and to pour its waters into Lake Tchad. This is now supposed to have been an error, and it is surmised that some great discovery will soon reform our geographical notions of that part of Africa. The Royal Geographical Society reports constant explorings of the unknown central parts of the continent farther south and east. The Belgians have a station at Karema on Lake Tanganyika, and travelers from the east coast are constantly arriving there. An exploring party of Germans are at work between Karema and Tabora, and the French are equally busy on Lake Bangweolo. Mr. James Stewart has constructed a road between Lakes Nyassa and Tanganyika, and a steamer in sections is already on its way to these lakes. Mr. Johnson and Mr. O'Neill are making maps of the region between the Mozambique coast and Nyassa. Capt. Paiva de Andrada is surveying the districts about the lower Zambesi, and Mr. Selons is similarly engaged between the Zambesi and the settlement of the Matabele, while Lord Mayo is engaged with the country between Mossamedes and Ovampo Land.

Count Antonelli, a nephew of the late cardinal, has returned from his adventurous trip to Assab and Shoa, and has given his country an honorable rank among the many nations pushing forward the work of discovery and exploration. Antonelli set out from Yeila, a port eighty or ninety miles south of the Straits of Bab-el-Mandeb, his first object being to reach the Italian traveler, Cecchi, then a prisoner in Shoa. He traveled by way of Irya Somali and the Darakil country, making a long *détour* northward on the Blue Nile. He determined to make an effort to open a new route to Ankober by way of Assab and Aussa, an undertaking which has cost several explorers their lives, the native tribes being fiercely hostile. In spite of this hostility, Antonelli succeeded in making friends with the Sultan of Aussa, Mohammed Aufari, and obtained a passport to the good-will of the nomad tribes in the shape of a walking-stick, the mere sight of which procured from the Darakils mules, guides, and provisions. He accomplished the journey—a distance of five hundred miles—in three months and seventeen days. At Ankober he was kindly received by the king, Menelik, whom he found to be greatly influenced by the Italian bishop Massaia. Menelik sent to King Humbert a parcel containing specimens of the products of Shoa—seeds, ivory, berries, etc. Count Antonelli is of the opinion that Shoa is a better field for commerce than Abyssinia, it being the key to districts which are very rich in coffee, sugar, spices, and ivory. He is already planning another expedition to this important region.

Dr. Lenz has given the following description of the commerce of Western Africa: Morocco, which is a land richly endowed by nature but kept poor by misgovernment, has no export trade with Europe, because the export of grain, horses, cattle, and cork-bark, articles produced in abundance, is forbidden. The large importations of sugar and candles from Marseilles, and of green tea and dry goods, are balanced by the re-export of the same commodities to the Soudan. A caravan-journey to Timbuctoo takes three months. The caravans bring back mostly slaves, which find a market along the Barbary coast. Timbuctoo, the emporium of the Soudan trade, is visited by from 40,000 to 50,000 loaded camels yearly. The principal standard of value there is salt, which is brought in uniform cakes, weighing sixty pounds, from the Sahara. They have, however, a gold coin, and also Spanish dollars. For small change they use cowries, at the rate of 3,000 or 4,000 to the dollar. The money comes from the French stations on the Senegal and is exchanged mostly for India-rubber, which is obtained in the vast mimosa-forests. The French possessions in the interior are confined to a series of forts on one bank of the Senegal, garrisoned with Algerian and recently also with native soldiery, composed of purchased slaves, who are liberated after six years of service, after which they usually hire out to traders. The Senegal is navigable only as far as the military station Médine, sixty miles from the mouth, where rapids block the passage. A line of forts has recently been established from Médine in the direction of the Niger, and would be carried farther but for the hostility of the negro kingdom of Segou, which has been not long converted to Islam. The forts are all connected by telegraph with St. Louis, at the mouth of the Senegal, and work has been begun on a railroad from Médine to the Niger. The trade of St. Louis consists chiefly of India-rubber and peanuts. From the latter oil is extracted in Bordeaux and Marseilles,

which is sold in immense quantities as olive-oil. The English control the trade of the Gambia and the countries to the southeast. The republic of Liberia is described by Dr. Lenz as corrupt in its government, and extremely modernized in its social conditions. It is rich in coffee. Here begin the gold-diggings, which farther east have lately begun to be exploited with the newest appliances by a number of joint-stock companies. The Gold Coast has already a large export trade in palm-oil, of which Lagos is the center.

Madagascar.—The latest explorer in Madagascar is Audebert, a German zoölogist, who was sent out by the Zoölogical Museum at Leyden, and, after the five years of his contract expired, remained two more on his own account, returning in 1882. During his sojourn on the island the Englishmen, Gerard and Grossley, the Frenchmen, Humblot and Majastre, and the Germans, Rutenberg and Hildebrandt, died there from hardships and fever. The Hovas he found treacherous and jealous, and the inland tribes hostile and savage. He was once poisoned, and was attacked five times, and his hut was fired thrice. He was deserted by his porters in the midst of a forest, and twice he rescued his life only by swimming. Besides his discoveries in natural history, comprising seventeen new species, Audebert enlarged the ethnological knowledge of the island. While searching for a mysterious animal—an ass with long, hanging ears—which he was told lived in the north by the people in the south, and in the south by those in the north, he came upon the Voilakertras, a tribe hitherto unknown. They are a bellicose and predatory people, of whose ferocious qualities he was warned on all sides, but whom he found to be superior to their lying, indolent, and cowardly neighbors. They are excellent husbandmen, but constant wars interfere with their prosperity. He was received cordially by their king, Lambohazi, and would have staid longer if a war which was going on did not render his situation precarious. They dwell in the upper valley of the Manambato. The Valaves, another undescribed tribe, possess all the evil qualities attributed to the Voilakertras. Another tribe unknown to Europeans is the Safzoras, a branch of the Taifasy family in the southeast.

GEORGIA. State Government.—The following were the State officers during the year: Governor, Alexander H. Stephens, succeeded by James S. Boynton and Henry D. McDaniel, Democrats; Secretary of State, N. C. Burnett; Treasurer, D. N. Speer; Comptroller-General, William A. Wright; Attorney-General, Clifford Anderson; Superintendent of Public Instruction, G. J. Orr; Commissioner of Agriculture, J. T. Henderson; Railroad Commissioners, J. M. Smith, Campbell Wallace, and L. N. Trammell. Judiciary, Supreme Court: Chief-Justice, James Jackson; Associate Justices, Martin J. Crawford and Samuel Hall.

Gubernatorial Succession.—Gov. Stephens died on the 4th of March, and on the 5th James S. Boynton, President of the Senate, took the oath of office as his successor.

The law provides that, after the death of the Governor, the President of the Senate, acting as Governor, shall order an election for Governor, to fill the unexpired term.

Gov. Boynton immediately ordered an election for the 24th of April, and convened the Legislature for the 9th of May. The Democratic State Convention met in Atlanta on the 10th of April, and after a session of several days nominated Henry D. McDaniel, his chief competitors having been Gov. Boynton and A. O. Bacon. Mr. McDaniel was elected by a light vote, without opposition, the figures being 23,680 for McDaniel and 334 for others. The Legislature having convened, pursuant to the call, Gov. Boynton transmitted a message reciting the death of Gov. Stephens, and his action in the premises, and giving the following information:

The resolution of the General Assembly, authorizing the sale of the $160,000 of United States registered bonds received by the State from the purchasers of the Macon and Brunswick railroad, has been enforced, and a most advantageous sale was made by the Treasurer in New York. The bonds brought $180,-200, or a premium of $20,200 on the bonds for the benefit of the State. The cost of the sale was only $100 brokerage and the treasurer's expenses less than $100. This money will be devoted to paying the public debt. In addition to this, $114,000 of bonds not yet due, paid by the purchasers of the Macon and Brunswick railroad, have been canceled and warrant given for the same. This included $74,500 of the 7 per cent. bonds issued by Gov. Jenkins to rehabilitate the State road, due in 1886, and $39,500 of 6 per cent. State indorsed bonds of the Savannah and Gulf railroad due in 1886, 1887, and 1889. The reports of the Treasurer show that in addition to these items the sum of $367,971 of the public debt of the State, principal and interest, has been paid in the last few months, steadily reducing the State's debt, and demonstrating the solid integrity of the State's credit, as well as the advancing value of her securities.

On the 10th of May Gov. McDaniel was inaugurated, and the Legislature adjourned.

Legislative Session.—The Legislature met in adjourned session on the 4th of July, and adjourned on the 26th of September. From the message of Gov. McDaniel to this session the following extracts are taken:

I regret to inform you that the Treasury Department of the United States has declined to pay the sum of $35,555.42 appropriated by Congress in the act approved March 3, 1883, "to refund to the State of Georgia certain money expended by said State for the common defense in 1777." The First Comptroller of the Treasury has decided that this sum shall be credited on account of what is claimed to be due for the quota of direct taxes, apportioned to the State by the direct tax act of Aug. 5, 1861. This decision is, in my judgment, erroneous; and I have notified the Secretary of the Treasury that the State does not acquiesce in it. If the taxes claimed are due, the obligation is upon the citizen, and not upon the State, which has never assumed the payment of the taxes, and can not be justly charged with them. All proper means will be used to secure the payment of the sum appropriated for the benefit of the State.

An embarrassing question has arisen in the taxation

of personal property of railroads located partly within this State and partly in another State. The realty and the personalty located in this State must, of necessity, be taxed in this State. But much of the personal property of such railroads is located in this, or another State, only by reason of the rule of law which fixes the *situs* of personalty at the domicile of the owner; or in case of a railroad, where its principal office is located. In practice a difficulty arises, because adjoining States claim the right to tax such proportion of the entire personalty as the number of miles of railroad located within their limits bears to the whole number of miles in both States. This would seem to be the rule of convenience, as well as of justice, and I recommend its adoption.

The subject of taxation can not engage too much of your attention. Equality and uniformity are substantially secured, in theory, under our system. But experience proves that our laws for ascertaining the property liable for taxation, and its value, are defective; its aggregate value being largely in excess of the annual returns. . . . We collect from the people of Georgia, for State and county purposes annually, less than one dollar and twenty-five cents per capita.

There were passed at this session an act to redistrict the State for congressional purposes, and an act prohibiting the running of Sunday excursion-trains. Among bills which failed to pass were those providing for tax-assessors, establishing a school of technology, and the general dog law. The general temperance bill failed to pass, but more than seventy special temperance bills passed. The congressional districts consist of the following counties:

1. Chatham, Effingham, Scriven, Emanuel, Bullock, Bryan, Tatnall, Liberty, McIntosh, Glynn, Wayne, Appling, Pierce, Camden, Charlton, Ware, Clinch, Echols.
2. Baker, Berrien, Brooks, Calhoun, Clay, Colquitt, Decatur, Dougherty, Early, Lowndes, Miller, Mitchell, Quitman, Randolph, Terrell, Thomas, Worth.
3. Coffee, Dodge, Dooly, Irwin, Telfair, Montgomery, Laurens, Pulaski, Wilcox, Houston, Macon, Sumter, Schley, Webster, Stewart, Lee.
4. Taylor, Talbot, Marion, Chattahoochee, Muscogee, Harris, Heard, Troup, Meriwether, Coweta, Carroll.
5. Clayton, De Kalb, Fayette, Fulton, Henry, Newton, Rockdale, Spalding, Walton, Campbell, Douglas.
6. Bibb, Crawford, Upson, Pike, Monroe, Twiggs, Wilkinson, Jones, Baldwin, Butts, Jasper.
7. Bartow, Catoosa, Chattooga, Dade, Cobb, Floyd, Gordon, Whitfield, Murray, Polk, Paulding, Haralson, Walker.
8. Hancock, Putnam, Greene, Morgan, Oconee, Clarke, Oglethorpe, Wilkes, Elbert, Madison, Hart, Franklin.
9. Banks, Cherokee, Dawson, Fannin, Forsyth, Gilmer, Gwinnett, Hall, Habersham, Jackson, Lumpkin, Milton, Pickens, Rabun, Towns, Union, White.
10. Johnson, Jefferson, Burke, Glasscock, McDuffie, Richmond, Columbia, Lincoln, Washington, Warren, Taliaferro.

Acts were also passed as follow:

Appropriating money for completing and furnishing the State Lunatic Asylum; providing for the erection of a State Capitol building; providing that all property owned by any railroad corporation of the State not used by it in carrying on its usual and ordinary business, shall be taxable by the counties and municipal corporations in which such property is situated; providing that all railroad companies operating railroads lying partly in Georgia and partly in other States shall be taxed on so much of the whole value of the rolling-stock and other personal property appurtenant thereto as is proportional to the length of the railroad in Georgia; and providing a more correct and efficient mode of taking the enumeration of the school population.

Finances.—Following are the receipts and disbursements from Sept. 5, 1882, to Sept. 6, 1883:

Balance in Treasury Sept. 5, 1882	$782,472 67
Paid in last quarter of 1881	727,506 48
Paid in first quarter of 1882	683,202 27
Paid in second quarter of 1882	144,869 20
Paid in third quarter of 1882	158,699 36
Paid in fourth quarter of 1882	683,825 22
Paid in first quarter of 1883	365,217 54
Paid in second quarter of 1883	175,764 90
Paid in fractional third quarter of 1883	106,805 95
Total	$3,754,363 49
Paid out last quarter of 1881	$589,490 81
Paid out first quarter of 1882	122,765 08
Paid out second quarter of 1882	731,417 16
Paid out third quarter of 1882	387,804 68
Paid out fourth quarter of 1882	117,188 41
Paid out first quarter of 1883	500,916 45
Paid out second quarter of 1883	558,505 89
Paid out fractional third quarter of 1883	100,855 50
Total	$3,054,944 02
Sept. 6, 1883—Balance in Treasury on this date	$699,419 47

The increase in the taxable property in the State is very marked. This increase in 1882, over 1881, was more than $16,250,000. The increase in 1883 over 1882 was $19,535,488. The total taxable value in 1883 was $306,784,891. The increase in railroad property was $3,284,187.

The most notable increase in any section of the State is in the three most prominent truck-growing counties, Lowndes, Burke, and Thomas, their gain aggregating $775,000.

The total recognized bonded debt of the State is $9,445,500. The bonds bear interest at the rates as follow: $6,547,500 bear interest at the rate of 7 per cent.; $2,598,000 bear interest at the rate of 6 per cent.; and $300,000 bear interest at the rate of 8 per cent.

The principal of the debt falls due as follows: 1886, $4,000,000; 1889, $2,298,000; 1890, $2,098,000; 1892, $307,500; 1896, $342,000; 1884, $100,000; 1885, $100,000. Of the Nutting or 8 per cent. bonds but $300,000 remain to be paid. Of this amount $100,000 matures yearly—and the interest on the public debt is yearly diminished by the interest on $100,000—$8,000, to and including the year 1886, when the last of these bonds mature.

Agriculture.—In 1882 the State yielded, according to the estimates of its Department of Agriculture, the following leading products, with the following value:

Cotton, 941,866 bales, worth for the lint $40,000,000, and for the 500,000 tons of seed $4,000,000.

Oats, 11,643,482 bushels at 57 cents a bushel, worth $6,632,000.

Wheat, 3,500,000 bushels at $1.25, worth $4,375,000.

Corn, 36,963,940 bushels at 66 cents, worth $24,396,000.

During the truck-season of 1883, Georgia raised about 6,250,000 melons, of which there were sent to market all but 1,000,000, which were consumed on the farms, fed to stock, or wasted. This crop, supplemented by the vegetable crop, paid the farmers about $250,000, which may be considered a surplus above the

staple crops. Much of the truck-land was used for cotton and corn, after the truck-crops.

State University.—The sum of $50,000 offered to the State University by Senator Brown in 1882, upon certain conditions, which were not accepted by the Legislature (see "Annual Cyclopædia" for 1882), was this year given by him to the institution, and accepted by it.

Oglethorpe Celebration.—On the 13th of February, the one hundred and fiftieth anniversary of the landing of the first colonists under Oglethorpe, the founding of the city of Savannah, and the birth of the State of Georgia, were celebrated in Savannah. Thousands of people from all sections of the country were present. Gov. Stephens delivered an address on Georgia's history, and a poem, written by Paul Hayne, was read by Gen. Jackson.

Education.—In all cities and counties there was paid, in 1882, as follows: To teachers of white schools, $381,586.16; to teachers of colored schools, $151,428.26; total, $533,014.42. The poll-tax paid by white tax-payers in 1882 amounted to $123,518, and that paid by colored tax-payers was $59,405. The school-taxes obtained from rental of the Western and Atlantic road, from inspection of fertilizers, from shows, from liquor-dealers, from hire of convicts, etc., in all of which the negroes pay a large proportion, amount to $125,953.36. There are 1,100 negroes and 100 white men in the penitentiary. Hence eleven twelfths of the hire of convicts comes out of the negroes. Fees for inspecting fertilizers are really paid by farmers, and the custom now is to make negro farm-laborers pay their part of the expenses of fertilizers. A recapitulation of what negroes contribute to the public-school fund stands: Poll-tax, $59,405; proportion of taxes from other sources, $65,722.70; total, $125,127.70. Taking this aggregate from $151,428.26, the amount paid to teachers of colored schools, there remains $26,300.56 as the entire amount contributed by white tax-payers for the education of colored children. "This," says the commissioner, "was certainly no great burden to property-holders. The negroes returned property to the value of $6,589,876. The State tax on this property amounted to $19,769.62. Add this to $125,127.70, the sum paid by them to the support of their schools, and we have $144,897.32, nearly as much as their schools cost. It is thus shown that the white people, who really hold all the power of the State government, allowed the negroes for the support of their schools more than the whole amount paid by them for all purposes, and then took upon themselves all other expenses of government. The number of pupils in colored schools was 95,055, in white, 161,384. This gives a per capita for colored children of $1.59, and for white, $2.36."

GERMANY, an empire in Europe, formed by the union of the German states, consummated on May 4, 1871, when the Constitution of the German Empire replaced the articles of confederation between the North German states and the treaties by which the Grand Duchies of Baden and Hesse and the Kingdoms of Bavaria and Würtemberg entered the League during the Franco-Prussian War. King Wilhelm I was proclaimed German Emperor from Versailles on the 18th of January, 1871, upon the successful termination of the war with France. He was born March 22, 1797, and ascended the Prussian throne on the death of his brother, Jan. 2, 1861. The heir-apparent, Friedrich Wilhelm, was born Oct. 18, 1831.

The sovereign powers of the confederation of states forming the empire are vested in the Prussian crown and the Federal Council, but the concurrence of the Parliament, or Reichstag, elected by universal suffrage, is necessary to the exercise of certain functions. The popular assembly possesses, also, certain rights of control over the acts of the Government. To declare war, if not merely defensive, the Emperor must have the consent of the Bundesrath, or Federal Council, in which body, conjointly with the Reichstag, or Diet of the Realm, are vested the legislative functions of the empire. The Bundesrath represents the individual states, and the Reichstag the German nation. The members of the Bundesrath, 62 in number, are appointed by the governments of the individual states for each session, while the members of the Reichstag, 397 in number, are elected by universal suffrage and by ballot, for the term of three years. The Bundesrath is presided over by the Chancellor of the Empire, who, as representative of the Bundesrath, has a right to interpose in the deliberations of the Reichstag. Both bodies meet annually, called together by the Emperor. All imperial laws must receive the votes of a majority in both houses. The assent of the Emperor, which must be countersigned by the Chancellor, is necessary to give them effect.

The Chancellor of the Empire, Prince Otto von Bismarck, fills the posts of President of the Council of Ministers, Minister of Foreign Affairs, and Prussian Minister of Commerce. In the office of Foreign Affairs his chief subordinate is Count von Hatzfeldt, Secretary of State, who is also Minister of State in Prussia. The Secretary of State for the Interior is Minister von Bötticher. The Chief of the Admiralty is Lieut.-Gen. von Capsivi, who succeeded Admiral von Stosch, on his retirement, March 8, 1883. The Secretary of State for Justice is Dr. von Schelling; Financial Secretary of State, Von Burchard; Chief of the Post-Office, Dr. Stephan; Minister of Railroads and Prussian Minister of Public Works, Dr. Maybach.

The Prussian ministry is composed as follows: President, Prince Bismarck, Minister of Foreign Affairs and of Commerce; Vice-President, Von Puttkamer, Minister of the Interior; Public Works, Maybach; Agriculture and Domains and Forests, Dr. Lucius; Justice, Dr.

Friedberg; Ecclesiastical Affairs and Public Education, Von Gossler; Finance, Von Scholtz; War, Lieut.-Gen. Bronsart von Schellendorff, who succeeded Gen. von Kameke, retired March 5, 1883; without portfolios, Von Bötticher and Count von Hatzfeldt.

Area and Population.—The area of Germany is 212,091 square miles. The total population of the empire returned in the census of Dec. 1, 1880, was 45,234,061, of whom 22.185,433 were males and 23,048,628 females. The number of foreigners was 275,856, of whom 117,574 were born in Austria-Hungary, 28,244 in Switzerland, 23,593 in Denmark, 17,393 in the Netherlands, 17,393 in France, 15,107 in Russia, 11,155 in Great Britain and Ireland, 10,326 in the United States.

The preliminary results of the enumeration of the population with reference to professions and employments, conducted June 5, 1882, were as follow, with the proportion of each class to the total in that year and in 1871, not taking account of the different method of classification:

DEPENDENT ON	Number.	Percentage, 1882.	Percentage, 1871.
Agriculture, stock-raising, and gardening	18,888,658	42·5	29.8
Forestry, hunting, and fishing	884,5.8		
Mining industry and works of construction	16,054,291	35·5	32·7
Commerce and transportation	4,529,780	10·0	8·9
Labor for hire and domestic service	988,143	2·1	17·2
Public service, ecclesiastical and liberal professions	2,228,184	4·9	5·5
Without profession or employment	2,245,257	5·0	5·9
Total	45,218,901	100·0	100·0

The population was divided, as to religious belief at the time of the census, as follows:

CREEDS.	Number.	Per cent.
Evangelical	28,318,592	62·6
Catholic	16,229,290	35·9
Other Christian	98,894	0·2
Jewish	561,612	1·2
Other	30,673	0·1
Total	45,234,061	100·0

There were 47,720 emigrants who renounced German nationality in 1881, against 28,780 in 1880. The number of foreigners naturalized in 1881 was 4,635. The number of emigrants in 1882, as compared with the number in 1881, and the countries of their destination, were as follow:

DESTINATION.	1882.	1881.
United States	189,878	206,189
Brazil	1,286	2,102
Other American countries	1,588	1,162
Australia	1,065	745
Africa	835	814
Asia	40	35
Total emigrants	193,687	210,547

The total emigration from 1820 to the end of 1882 was in the neighborhood of 4,000,000, of which number about 3,250,000 emigrated to the United States.

The population of the cities with over 100,000 in 1880 was as follows:

CITIES.	Population.	CITIES.	Population.
Berlin	1,122,330	Frankfort-on-the-Main†	136,819
Hamburg*	289,859	Hanover‡	122,843
Breslau	272,912	Stuttgart	117,308
Munich	230,023	Bremen	112,418
Dresden	220,818	Dantzic	108,551
Leipsic	149,081	Strasburg	104,471
Cologne	144.772		
Königsberg	140,909		

Education.—Education is compulsory in all the German states. The elementary schools are supported by the communes. According to the returns of 1878, all recruits of the army could read and write, though in Bavaria and some other parts of South Germany there was a small percentage of them who were deficient in schooling.

In Freiburg, Munich, Münster, and Würzburg, Roman Catholic theology is taught, and in Bonn, Breslau, and Tübingen, both Catholic and Protestant; all the other universities are Protestant. There are, besides the students for degrees, non-matriculated students, who in Berlin numbered 1,219.

Commerce.—The values of the main classes of imports and exports in 1881 were as follow, in millions of marks and tenths of millions:

CLASSES.	Imports.	Exports.
Articles of consumption	1,046·2	592·2
Raw materials	934·6	540·5
Manufactured articles	514·2	1,526·6
Miscellaneous	466·9	315·3
Total	2,961·9	2,974·6

The imports of cereals were 372, exports 96 millions; imports of fermented liquors 43, exports 75½ millions; imports of live animals and animal products 330⅔, exports 186¾ millions. The exports of manufactured products were nearly 90,000,000 marks more than in 1880. There was an increase in pottery and glass, metals, and metal manufactures, machines, leather manufactures, textiles and dress manufactures, and in all other articles except yarns.

The effects of the introduction of protective duties on the iron industry were investigated by the Iron and Steel Manufacturers' Association of Germany. In January, 1879, 325 private firms and joint-stock companies employed 158,979 hands, and paid in wages 9,383,396 marks monthly; in January, 1883, they gave employment to 206,150 laborers, an increase of 33·9 per cent., and paid in wages 14,754,350 marks monthly, an increase of 57·2 per cent. The net earnings of the 107 joint-stock companies were 5·16 per cent. in 1882, against 1·99 per cent. in 1879.

Navigation.—The movement of shipping in German ports in 1881 was as follows:

* Including suburbs, 410,127.
† Including faubourgs, 164,697.
‡ With Linden, 145,227.

FLAG.	Tonnage entered.	Tonnage cleared.
German	3,672,568	3,733,566
Foreign	3,960,763	4,043,122
Total	7,633,331	7,776,688
Steam	5,145,116	5,211,339

The total number of vessels engaged in maritime commerce, and the number of steamships among them, which composed the German merchant marine on Jan. 1, 1882, with their aggregate tonnage and the number of men employed, as compared with the same date of the preceding year, were as follow:

YEAR.	Vessels.	Tonnage.	Crews.	Steamers.	Tonnage.	Crews.
1882	4 509	1,194,407	89,109	458	251,648	9,516
1881	4,660	1,181,525	89,660	414	215,753	8,657

Railroads.—The railroads in operation in the larger states, and the total mileage of the empire on May 10, 1883, were as follow, in kilometres:

STATES.	STATE LINES.		ADMINISTERED BY STATE.		ADMINISTERED BY COMPANIES.		Total.
	Principal.	Local.	Principal.	Local.	Principal.	Local.	
Prussia	13,118	1,969	2,188	361	3,134	885	21,605
Bavaria	3,809	420	...	...	578	51	4,918
Saxony	1,796	316	27	58	...	...	2,192
Würtemberg	1,471	70	...	..	6	11	1,558
Alsace-Lorraine	1,103	167	...	5	...	4	1,279
Baden	1,111	111	57	48	...	...	1,327
Hesse	225	...	...	...	...	...	....
Other states	429	79	...	24	1,688	181	2,621
Total	23,122	3,132	2,272	491	5,401	1,032	35,500

Of the 30,795 kilometres of principal lines, 10,285 kilometres have double and 35 triple or quadruple tracks. Not included in the above are 1,252 kilometres of industrial railroads.

By the purchase of the Berlin and Hamburg, and Kiel and Altona, the Oder right-shore line, and the Upper Silesian railways, with some minor roads, the Prussian Government system of railways is completed. The aggregate length of the new acquisitions, authorized by a bill passed just before the close of the Landtag, is about 3,000 kilometres. By previous purchases the state owned 15,909 kilometres. It administered besides 2,236 kilometres of private roads. The principle of the government management of railroads was recognized in Prussia from the beginning. It was expressed in the railroad law of 1838, but the Government, before 1848, did nothing beyond extending financial support to the companies. In 1849 Minister von der Heydt carried a measure providing for the construction of a number of railroads by the Government. This policy was not carried out in the succeeding period, and in default of state construction every encouragement was given to the building of railroads by private enterprise. Hanover, Hesse, and Nassau, when annexed to Prussia, brought well-developed systems of state railways into the possession of the Government. After the French war the policy of state railroads was resumed, but the Central Government was unable to overcome the opposition of the middle states to a unified system of railroads under the control of the imperial authorities. The railroads in these states were mostly public property. Prussia immediately after the war constructed the Berlin-Wetzler-Metz line, connecting the capital with the western part of the monarchy and the new imperial province, and pending the issue of the controversy over the plan of an imperial system of railroads, began to acquire possession of the Prussian roads, standing ready to hand them over to the national Government, according to an enactment of June 4, 1876, whenever the empire would engage to purchase the remaining private lines. The political opposition to the scheme of a unified imperial system, which had withstood the raising of the tariff on freight and other coercive measures, and the efforts of the Imperial Railway Office, created by the Reichstag in 1873, was not weakened by this offer. Left to accomplish the work of nationalization alone, the Prussian Government made preparations to bring all the railroads in the monarchy under state management. It began the series of purchases in 1879, in which year the state net-work embraced 6,198 kilometres, besides 3,525 kilometres controlled by the state but owned by private persons. The task was completed by the purchase of the last six lines in 1883. The capital invested by the Government in its railroad net-work is 1,327,983,000 marks, raised by the issue of bonds to the amount of 1,867,339,885 marks.

The length of telegraph lines in 1882 was 74,312 kilometres; of wires, 265,058 kilometres. The number of dispatches was 18,362,173, of which 5,426,494 were foreign. The receipts of the postal and telegraphic service in 1882 were 164,259,372 marks; expenses, 140,733,520 marks. The Imperial Post-Office carried 681,976,350 letters, 168,929,480 postcards, 14,013,710 patterns, 154,496,960 stamped wrappers, and 453,602,400 newspapers, in the year 1881. The number of post-offices at the end of 1881 was 11,088; telegraphic stations, 10,308; persons employed, 78,502.

Army and Navy.—The effective of the army on the peace footing in 1883 was as follows:

BRANCHES OF SERVICE.	Officers.	Men.	Horses.
Staff	2,082	4	....
Line	9,529	278,822	....
Jaegers	424	11,120	....
Landwehr cadres	326	4,764	....
Cavalry	2,358	64,699	62,550
Field artillery	*1,801	84,817	16,091
Fortress artillery	729	16,849	....
Engineers	406	10,840	....
Train	200	4,905	2,457
Palace guards, etc	312	954	....
Total	18,118	427,274	81,598

The war effective, not including the Landsturm and special formations, was as follows:

DIVISIONS.	Officers.	Men.	Horses.	Guns.
Field army	19,891	744,081	242,415	2,040
Depot troops	4,796	296,614	31,373	444
Garrison troops	11,240	416,082	38,943	324
Total	35,427	1,456,677	312,731	2,808

The navy in 1883 comprised 7 iron-clad frigates, with 85 guns ranging from 12 to 26 tons, an aggregate displacement of 50,224 tons, engines of 43,100 horse-power, and armor of 10, 8½, and 5 inches thickness; 5 iron-clad corvettes, with 32 guns, 22 tons on all except one, 8 inches of armor, 25,400 horse-power, and 33,210 tons displacement; 27 cruisers, armed with 271 guns; 13 coast-guards, with 18 guns, besides 15 torpedo-boats; and 22 dispatch-boats, transports, and school-ships. There were under construction 1 iron-clad and 8 other corvettes, a gunboat on the Albatross system, and 2 armored gunboats.

The plans for a German navy were adopted in 1873, and the term of ten years was set for the completion of the new fleet. A new type of iron-clad corvettes was one of the first improvements carried out. This was the Sachsen class, intended for defending the coast and offensive action in German waters and the neighboring seas. They were designed to take the place of the previously adopted Hansa model, which was considered too weak for a battle-ship and too slow for a cruiser. The Sachsen corvettes are of shallow enough draught to run into the other North Sea ports as well as Kiel, and are exceedingly manageable and provided with rams and torpedoes. On this model were built the Sachsen, Baden, Bayern, and Würtemberg. A reform which was taken up at about the same time was the substitution of iron-clad gunboats for the projected monitors, which in view of the development of torpedoes were deemed too uncontrollable and less valuable for local coast-defense than smaller vessels which could protect the lines of sunken torpedoes and move about in the shallow waters of the German coast, firing upon approaching iron-clads from a safe position, and, when these are obliged to move slowly and cautiously in difficult channels, even assuming the offensive, which their heavy guns enable them to do. Eleven of these gunboats were finished and two in process of construction in the spring of 1883. The new cruisers of the first class were designed for a speed of 15 knots. Since wooden vessels were not firm enough to stand the agitation, they were made of iron and covered with copper to keep the bottom clean, which was separated from the iron hull, so that no galvanic action could take place, by two layers of teak. These vessels of the Leipsic class are armed with ringed cannon of from 12 to 17 centimetres caliber, and provided with tackling and equipments which would enable them to remain at sea for months. The cruisers of the second class, known as the Bismarck type, of which the Bismarck, the Blücher, the Moltke, the Stosch, the Gneisenau, and the Stein, are the representatives, are like the others in design and armament, but of smaller size and of a calculated speed of 13 knots an hour. Among the cruisers of the third class the four corvettes—Carola, Olga, Marie, and Sophie—form a separate class. They have a speed of 14 knots and carry 10 guns. Their chief purpose is to protect merchant-ships in distant waters and guard remote portions of the coast. The Whitehead fish-torpedo was adopted in 1876. It was at first intended to construct 28 torpedo-vessels; then it was proposed to fit out the regular war-ships with apparatus for firing torpedoes; and finally, for the better economy of these projectiles, costing about $2,500 each, it was decided to employ also specially designed torpedo-boats. It was also expected that a flotilla of torpedo-boats would keep a hostile fleet at a distance and oblige it to keep under steam, and that it could dash into and cause damage and consternation to a blockading squadron. In 1881 the ships began to be armed with torpedoes or provided with the appliances for firing torpedoes either from the deck or under water. In a short time 64 vessels were thus equipped. The construction of torpedo-boats was begun at the same time. Eight were completed in 1883, and it was the intention of the Government to add to this number as rapidly as possible, to keep pace with other countries which are rapidly building torpedo-boats.

Finance.—The budget of the empire for the year 1883–'84, adopted March 2, 1883, calls for 537,297,305 marks for ordinary and 53,259,329 marks for extraordinary expenses.

The budget of 1884–'85 was voted July 2, 1883. It estimates the produce of customs duties at 196,450,000 marks; excise duty on sugar, 46,865,000 marks; on salt, 37,262,600 marks; on tobacco, 18,940,920 marks; on spirits, 35,925,900 marks; on malt, 15,791,000 marks; the net receipts of posts and telegraphs, 25,832,193 marks; of railroads, 16,690,600 marks; stamp duties, 19,436,680 marks; receipts of the invalid funds, 28,665,120 marks; surplus of the budget of 1882–'83, 15,825,000 marks; extraordinary receipts (from construction fund for fortifications, 10,400,000; for Parliament-house, 2,000,000; from loan for extraordinary pur-

* Number of batteries, 341; of guns, 1,374.

poses, 22,192,720 marks), 34,592,720 marks. leave The above and receipts from minor sources 83,702,768 marks to be provided by the matricular quota-shares of the states to make up the total budget of 590,819,344 marks, of which the appropriations were as follow:

EXPENDITURES.	Current.	Extraordinary.
Legislature	407,670	.....
Chancery	126,970	.....
Foreign affairs and consulates	6,825,415	30,000
Interior Department	2,871,788	2,173,975
Posts and telegraphs	.....	2,695,725
Military administration	339,872,490	26,762,678
Naval administration	26,908,396	10,125,900
Administration of Justice	1,824,267	.....
Treasury of the Empire	99,898,408	4,458,200
Office of Railroads	310,865	.....
Debts of the Empire	15,927,500	.....
Control	529,078	.....
Railroad administration	.....	250,000
Pensions	20,160,404	.....
Invalid fund	28,665,120	.....
Total, 1884-'85	544,827,866	46,491,478

The different loans authorized by the Reichstag, and the dates of the laws authorizing them, are as follow:

DATE.	Marks.
June 14, 1877	77,731,821
June 14, 1878	97,484,865
March 15, 1879	68,021,071
October 13, 1880	87,627,203
April 5 and December 12, 1881	64,912,885
February 15, 1882	29,674,405
July 2, 1883	18,192,720

Of the amount authorized prior to April 1, 1882, there had been issued at that date 319,239,000 marks. The amount of bank-notes of the empire in circulation at the same date was 153,164,210.

Rescript of the Emperor.—On April 14th the Reichstag, after having made no progress with the socialist laws, was stirred again by a rescript from the Emperor, less provocative, however, than that of the previous one. The aged monarch declared that he deemed it one of the first of his duties as Emperor to address his care and attention to the improvement of the condition of the laboring-class, and urged the Reichstag to grant a biennial budget, out of consideration for his declining years, in order that the autumn session might be devoted to the plans of social reform which he had at heart, and the hope be fulfilled before his death of the development and realization throughout the empire of the reforms begun by his father in the beginning of the century. The Emperor expressed the conviction that since the issue of the anti-socialist law, legislation should not be confined to police and penal measures, but should seek to remedy or alleviate the cause of evils combated in the penal code. Gratified at the first success of his endeavors, in the remission of the two lowest grades of the class-tax in Prussia, he hoped to see the accident-insurance bill, presented in an amended form at the beginning of the session, with the supplementary project of sick-funds under corporative administration, embodied in laws before the separation of the Reichstag, and the attention of the Reichstag devoted in the ensuing winter session to a further proposal to provide for the maintenance of superannuated and invalided laborers.

The stubborn determination of Prince Bismarck was as plainly indicated in the message as were the wishes of the Emperor. The Liberal majority gave vehement expression to their indignation, and referred the proposition to the budget committee, a form of indefinite postponement. Yet before they separated in June they voted the biennial budget, a procedure which they had repeatedly refused to follow, consoling themselves with the argument that the fiscal year was ended, and that it was therefore not a violation of the constitutional principle which they upheld.

Prince Bismarck's State Socialism.—After even the Progressists had ceased declaiming on theoretical grounds against the Chancellor's projects for the alleviation of the condition of the working-classes, and after the conciliatory overtures of the Government toward the Vatican, and the subsequent amendment of the Falk laws, had rendered the Ultramontanes, if not close allies, at least no longer obstructive opponents, Prince Bismarck was able to make better progress in his comprehensive scheme for the fiscal and social consolidation of the imperial power than at any time since the adoption of the protective policy and of the measures for the nationalization of the Prussian railroads. The aims which the Chancellor set before him in the organization of the finances of the empire involved the entire course of constitutional evolution. In following them he disrupted the great National-Liberal party which enabled him to unite Germany and thwarted the development of parliamentary government. Prussian officialism naturally prevailed over the more liberal systems of the smaller states, but to secure its acceptance by the thinking part of the population whose hopes were set on parliamentarism it was necessary to hold up the new ideal of socialism. The spread of the socialistic doctrines in two years by the help of the press has been remarkable. The measures proposed by Prince Bismarck all have an immediate practical object, and are supported on the ground of expediency by many who disapprove of their principle and tendency. The projects for the relief of the working-classes are expedient for the sake of enabling the people to sustain the burden of the military system, diminishing emigration, and counteracting the agitation of democratic and revolutionary socialism. The adoption of the system of indirect taxation accomplished the diverse objects of rendering the Imperial Government to a large extent independent of the matricular contributions of the states, of increasing the resources to meet the augmenting requirements of the military establishment, and, by allowing the states to share in the customs revenue, of enabling them to reduce burdensome direct taxes. The tobacco-monopoly scheme had the

same objects. This, like the bill empowering the Imperial Government to acquire all the German railroads, was rejected; the Reichstag objecting to them because they would greatly increase the patronage of the Government and its influence in elections; also, because these monopolies would place under the control of the executive the machinery for raising a large part of the revenue, and the power of increasing it at will; although its expenditure would still depend on the vote of the Reichstag, the effect would be to free the Government still more from parliamentary control. The Government would, moreover, by the control of the railway system, have power to favor or coerce individuals, towns, and districts. The command of the Prussian railroads already places it in the power of the central authorities to bring pressure on the other lines, and, as the Prussian budget makes an excellent showing for state management, there is a prospect of the eventual accomplishment of the railroad scheme. In the session of 1883 Prince Bismarck asked for an accession to the sources of revenue in the shape of timber-duties. It was opposed by the wood-working industries, and after an excited contest the bill was rejected, only by the temporary defection of the Polish deputies from the Center.

A favorite scheme of the German Chancellor for rendering the Government finances in a measure independent of the exigencies of party politics was to induce the Reichstag to vote the budget biennially. The Liberal Opposition has been weakened and divided by his parliamentary policy to such an extent that there was not the material in the present Reichstag to resist the Emperor's appeal. To escape the necessity of voting the budget for two years, and yet show becoming respect for the wishes of the Emperor, the deputies took up the sick and accident insurance bills. But in the end, by the aid of the Clericals, who were conciliated by the modification of the May laws, the supplies for two years were submissively granted. As soon as the budget was forced through, the Emperor closed the session, June 12th. It was the longest on record, having opened April 27, 1882.

The first fruit of the high tariff, in the way of relief for the poorer classes, was the abolition of the two lowest categories of the class-tax in Prussia. The Prussian Diet declined to grant Prince Bismarck's demand for an augmentation of the excise duties, which he declared necessary in default of the tobacco monopoly, and for the exemption of all incomes below $300, but abolished the class-tax on incomes below $215, whereas previously all households whose annual incomes exceeded $100 were liable to the class-tax—that is, the tax on incomes between $100 and $750. Nearly 3,750,000 persons, or about one fifth of those subject to this tax, were relieved.*

The accident and sickness insurance bill, in the form in which it was first laid before the Reichstag in the previous session, proposed that the Imperial Government should insure the work-people, and the employers and communes provide the premiums. The existing law of employers' liability required masters to provide the means for caring for employés injured in their service without fault of their own. It was ineffective, on account of the difficulty of proving that an accident is not due to a workman's own negligence. The insurance companies were accused of overcharging and defrauding the working-people. The bill was opposed by a large majority of the Reichstag, on the grounds that Government insurance would ruin the existing companies, that it would reduce the working-men to the condition of pensioners and destroy their independence, and that it would place great powers of coercion and interference in the hands of the agents of the Government. The bills were withdrawn and remolded, and when again laid before the Reichstag in the session of 1882–'83, were freed of the feature of Government administration. The new bills proposed that insurance should be undertaken by the existing companies, trade-guilds, and communal institutions. It was proposed that the state should furnish part of the premiums. This share was to be one fourth, another fourth was to be assessed on the employers and presumably paid out of their profits, and the remaining one half was to be estopped from the wages of the workmen and likewise collected from the employers. Accident-insurance was made obligatory on all employed in mines, factories, and other industrial establishments, on railroads, and by steamship companies. In the case of an accident, the workman was to be a charge on the sick-insurance fund for the first three months, and then, if the disability continued, the charge would be transferred to the accident-insurance fund. There was bitter opposition to both bills. The clauses making insurance compulsory and laying part of the burden on the Imperial Government, were especially obnoxious to the believers in the traditional doctrines of political economy. The scruples of those who were alarmed at the socialistic features of the project were met by the argument that the bills form part of a series of projects which would take the place of all other pauper legislation. It was a matter of imperial concern to legislate for the extinction of pauperism, which is usually the result of sickness or accident. By helping to tide the workman over periods of incapacity, and enabling him to retain his position as a self-supporting member of society, the state would relieve the communes which have already to support the indigent and helpless by the poor-rates. In support of

* According to the returns of 1881, 80 per cent. of the population of Prussia had less than $100 of annual income, nearly 68 per cent. belonged to households with incomes falling within the class-tax, and only 2½ per cent. had over $750 income.

the clause compelling employers to provide a part of the premium, the preventive effect of such a provision was urged. It would impel employers, whose neglect is the frequent cause of accident and sickness, to employ precautions for the safety and health of their employés. The alternative proposal of voluntary insurance would fail altogether, because the working-people could not save the premiums out of their wages, and the employers would not voluntarily contribute. By the opponents of the bills it was argued that the effect of the state subsidy and assessment on the employers would simply be to reduce wages by so much. The fate of the measures depended on the course which the Center party would take. With them the objections against the accident insurance bill prevailed, and the subsidy provision was stricken out. The bill was consequently withdrawn, to be presented again in the following session. The sick-insurance bill received their support, and was carried by a majority rarely got together in the present divided and distracted state of the popular representation, showing the cogency of the various motives which actuate the different parties to approve legislation for the benefit of the "poor man." The vote was 216 to 99, the two Conservative fractions, the Center, the National-Liberals, the People's party, and eleven Secessionists, voting in the affirmative, and the Progressists, most of the members of the Liberal Union, and the Social-Democrats, in the negative. The Liberals accuse the Chancellor of venting his antipathy against the trading and manufacturing classes in his legislative programme, which imposes many new burdens on them, while it relieves the land-owning and farming classes of a part of their burdens. They made it a condition of their adherence to the sick-insurance project that its provisions should be extended to agricultural laborers. An amendment to this effect was added, but at the last hour it was rejected, and the bill passed in almost the original shape.

Cabinet Changes.—Surprise and a degree of dissatisfaction were felt at the removals, within a few days of each other, of the chiefs of the war and naval ministries, who had held their posts for ten years. The retirement of Gen. von Kameke was due to a difference between him and the Emperor. The Progressist deputies would only agree to an augmentation of military pensions on the condition that officers should be subject to direct taxation the same as civilians. The Minister of War was willing to accept the compromise, but the Emperor William insisted on perpetuating the invidious privilege. A disagreement with the Chancellor is said to have led to the resignation of Baron von Stosch. It was expected that the place would be filled this time by a naval officer, but the Emperor's predilection for the military profession had again to be gratified by the appointment of an infantry general to the direction of the navy.

Retirement of Parliamentary Leaders.—During the debates on the church bill Herr von Bennigsen, leader of the National-Liberal party from its foundation, discouraged by the manner in which Prince Bismarck treated him and his party after he lost their support and by differences with the remnant of the great party who still followed his lead, resigned his seats in the Reichstag and Prussian Landtag and retired from political life. Only a few months before, Eduard Lasker, the other great Liberal leader, had laid down his mandate and permanently retired.

Prussia and the Vatican.—Just before the close of the session the Prussian Minister of Worship, Von Gossler, introduced in the Landtag a bill relaxing the May laws, which embodied the concessions that the Government was willing to make for the relief of the spiritual deprivations of the Catholic population. The bill, which was passed by a majority of 224 Conservatives and Clericals to 107 Liberals and Free Conservatives, fell short of the demands of the Vatican, but in the minds of the Liberals imported nothing less than the penitential pilgrimage to Canossa. In the negotiations with the Curia since the re-establishment of diplomatic relations, the fundamentally different principles of the Prussian state and the Papacy could not be harmonized so as to afford the basis of an agreement, but a *modus vivendi* was equally desired on both sides. On Dec. 3d, 1882, the Pope wrote to the Emperor William, expressing his satisfaction at the reopening of diplomatic intercourse by the return of the Prussian legation to Rome. The Emperor's reply, sent December 22d, expressed the hope that such a conciliatory step would be met by concessions showing a like disposition on the Pope's part, and intimated that, if the Vatican would agree to notify the civil authorities of ecclesiastical appointments, the Government would feel encouraged to move in the matter of recasting the legislation which is necessary to protect the rights of the state which are assailed when it has to sustain a contest with the Church. The Pope replied, January 30th, offering a concession, viz., that the bishops should thenceforward be permitted to give notice to the Prussian Government of new appointments of cures, without waiting for the revision of the ecclesiastical laws, imposing, however, the condition that the revision should be extended to the laws which impede the exercise of ecclesiastical duties and the training of the clergy. The immediate object of the negotiations was to supply pastors to the numerous parishes which had long been bereft of all cure of souls, an evil and a scandal which the Government had stronger motives for remedying than the Pope. The points in controversy involved the three main provisions of the Falk laws, which formed the subject-matter of the three principal acts: 1. That the ecclesiastical dignitaries should advise the provincial authorities of all appointments to eccle-

siastical posts. 2. That disciplinary authority over priests should be exercised solely by Germans. 3. That education in a German school and university and a state examination were essential to qualify a person for the discharge of clerical functions. A note from Cardinal Jacobini to Herr von Schlözer, Prussian envoy to the Vatican, explained the position taken by the Curia. The Prussian Government in reply, May 5th, expressed willingness to agree to the appointment of vicars without notification, while requiring it for the priests who are appointed to a parish connected with a benefice, so that the Church would be enabled to provide for the reading of the mass and the administration of the sacraments independently of the Government, the only requirements being that the officiating priests should be native Germans who have received the legally prescribed education. The Government promised a revision of the May laws, and agreed to renounce the right to forbid the appointment of priests, but insisted that the Pontiff should first concede the right of notification, deeming it a point of honor that he should grant the right which is conceded to other governments. The only answer made to the demand of the Pope to have the education of young priests placed under the direction of the bishops was that the Government had already shown much compliance with regard to state examinations of candidates and the opening of priests' seminaries. The Vatican returned an unfavorable answer. The Government, instead of pursuing the negotiations in which it continually lost ground, seized the opportunity to execute one of the sudden strokes for which Prince Bismarck is famous, interrupting the negotiations by the proposal in the Diet of the new ecclesiastical law, and thus endeavoring to cover its retreat by an assumption of independence. The bill embodied larger concessions than were offered in the note of May 5th. The parishes of which the patronage was in the hands of the Government were already provided with priests under the laws of July 14, 1880, and May 31, 1882. The present act removed all responsibility from the Government for the lack of spiritual ministrations in the remaining parishes of which the bishops have the patronage. The bill consisted of six clauses:

The first and most important clause enacts that the bishops shall no longer be required to notify to the Government authorities the names of those candidates for the priestly office whose appointments can unconditionally be canceled, or who are only appointed as substitutes or delegates. The bishops will thus be enabled at once to provide the vacant parishes with chaplains, vicars, adjuncts, etc., without any previous notification to the Government. By clause 2, however, this concession is not to extend to the cases of those priests who are intrusted with the administration of parishes.

Clause 3 declares that the Ecclesiastical Court is no longer the highest tribunal of appeal for the clergy against the decisions of the Government authorities in matters regarding the appointment of candidates, the discipline in clerical seminaries, or episcopal rights in vacant dioceses.

Clause 4 provides that the Government authorities shall continue to be entitled to oppose the appointment of any candidate who shall appear to be unfit for an ecclesiastical office on account of his civil or political position, or whose education has not been completed according to the prescribed laws. The reasons for opposing the appointment of a candidate are always to be given, and the Church authorities will be allowed to appeal against this decision to the Minister of Public Worship, who represents the highest Court of Appeal.

Clause 5 enacts that the holy sacraments can be administered by missionary priests in all vacant parishes, as well as in those where the priests have been forbidden to conduct religious services, under the May laws.

And clause 6 repeals all former legislation which is contrary to the above five clauses.

The bill was passed with the exception of the fourth clause. The ecclesiastical courts which administered the veto power over ecclesiastical appointments had been the subject of continual reproaches from the Clericals. The transfer of its jurisdiction to the Ministry of Worship was not, however, looked upon in the light of a concession by the adherents of the Vatican, though satisfaction was expressed with regard to the main provisions of the act.

The Pork Question.—The prohibition of American pork products raised a subject of dissatisfaction and controversy between Germany and the United States. (See PORK, PROHIBITION OF AMERICAN.) In April the Chancellor chose to take offense at a dispatch from Minister Sargent to the Government at Washington, in which the motive for the interdict was stated to be, not fear of trichinosis, but the protection of German hog-growers. Reflections were made also on the lack of harmony between German public opinion and the Government. This confidential dispatch was reproduced from a New York paper in the "North-German Gazette," and the American minister was angrily attacked. An apology was afterward offered, with comments on the indiscretion of the American Government in publishing confidential dispatches.

Spanish Treaty.—In the latter part of August the members of the Reichstag were startled by a summons to an extraordinary session. When they assembled on August 29th, it was explained to be for the purpose of ratifying the treaty of commerce with Spain. The Emperor had signed it provisionally, expecting to ask from Parliament, when it met regularly, an act of indemnity for this divergence from constitutional forms. But organs of the press called in question the right of the Government to act as it had done, and the applicability of the principle of indemnity recognized in other states to the Imperial Constitution. The Progressists assailed the Government for the violation of the Constitution, but the majority simply approved the treaty and the fisheries convention, and the Reichstag was then prorogued. The treaty runs until June 30, 1887.

The most important concession made by Germany is the reduction of her dock dues from forty to ten marks, and of her customs duties on southern fruits, fresh grapes, olive-oil, choc-

raisins, etc. She has further promised raise her duties on wine, with one exye, and other articles. Spain defi- l her duties on several articles of pecially spirituous liquors and spirits, steel wire, and rails.

Copyright Treaty.—A copyright treaty between France and Germany was concluded April 19th. This convention replaces the former ones between France and single German states. An author obtains under this treaty all the rights of native authors, except as to the duration of the copyright, which must not exceed that accorded in his own country. Manuscripts, as well as published works, are protected. Publishers can obtain copyrights. The rights extend to musical compositions, works of art, etc., and can be secured by the heirs, assigns, and legal representatives of the author. Copyrighted literary productions can be drawn from in the preparation of school-books or of works of a scientific character. The restriction of the reproduction of articles from newspapers and periodicals to publications of the same class and the obligation to cite the source of a reproduction are not continued in the new treaty. According to French law, every use of a melody without the permission of the composer is illegal, but the German principle was retained in the treaty, which requires only that a composition should have distinguishing characteristics, though an unauthorized arrangement of an air is forbidden. Public presentations of musical or dramatic compositions without authority are made actionable. An author preserves the right of translation for ten years if he has a translation published in either country within three years, otherwise he can not restrain the publication of a translation in the other country. Authors of musical and dramatic productions also retain exclusive rights of translation for the same periods. No registration or other formality is required to secure authors' rights. The convention is binding on both governments for six years, and then remains in force until one year after a notice of repeal has been received from either party.

Relations with France.—The continuance of the Austro-German alliance, which was said to be in danger of breaking off, was confirmed by the annual meeting of the Emperors at Ischl, and by other convincing signs. The influence of Prince Bismarck was seen to prevail in Europe to an extent which excited the susceptibilities of the French. Not only was Italy's understanding with the allied empires admitted by the Italian Minister of the Exterior and the Hungarian Premier in public announcements, but the Spanish commercial treaty, the visit of King Alfonso to the Emperor, and the return visit of the Crown Prince, showed that Spain also had gravitated toward the league of peace. In September the German Chancellor, in the "North-German Gazette," the official organ, raised a warning cry against France as the disturbing influence in Europe. Like similar notes of alarm on the same subject, one of which was uttered earlier in the year, immediately after Signor Mancini's announcement of the triple alliance in the Italian Parliament, the time was chosen when there seemed to be the least occasion for it. It had the appearance, therefore, of a menace, and did not fail to give offense to the sensitive French people. The appointment of King Alfonso to the honorary colonelcy of the regiment garrisoned in Strasburg excited the Parisians to the demonstrations at the station which Alfonso was subjected to on his return from Germany. The German press called upon the Government to take up the insult, but Prince Bismarck was careful not to provoke the French popular temper too far. The attendance of King Alfonso of Spain, and King Milan of Servia, besides the King of Saxony, the Crown Prince of Portugal, and the Prince of Wales, as the guests of the Emperor at the autumn manœuvres, which began September 14th, was among the indications of the supreme influence of Bismarck and his peace policy in Europe.

Alsace-Lorraine.—The imperial province was agitated more than usual, in 1883, by the language question. The deputies in the Reichstag kept up their attitude of opposition. In August, the lieutenant-general, Marshal Manteuffel, called forth indignant protests by refusing permission to one of them, M. Antoine, to start a French journal in Metz. The order that discussions in municipal councils should be conducted in German was followed a few months after by an attempt to banish French from the schools. The four hours a week which were devoted to the teaching of French were reduced to two.

Inundations.—In November and December, 1882, the Rhine and its tributaries, the Main and the Moselle, rose above the highest floodmark recorded in the century. Between Cologne and Coblenz the plains were entirely submerged, and many towns and villages inundated, among them the city of Coblenz. Below that place many houses crumbled down. The waters subsided about the middle of December, but a week or two later heavy rains fell and the waters rose to a higher point than before. The rise was so rapid as to cause a large loss of life. Nearly all the towns and villages on the lowlands of the Rhine valley were under water. In seven villages alone 400 buildings fell in. Near Carlsruhe a bridge fell, precipitating 20 persons into the river, and on the Baden state railroad a derailed train plunged into the water, drowning several passengers. A boat capsized and drowned 28 peasants who had just been rescued from their houses. In Mayence, soldiers were employed night and day in constructing protective embankments, and bridges for the escape of the citizens in case these gave way. A lake, five miles broad, formed between Wesel and Emmerich. In Frankenthal, 6,000 people were driven from their homes. The distress was

GERMAN NATIONAL MONUMENT ON THE NIEDERWALD.

pitiful, although aid flowed in with promptness and liberality from all parts of Germany. The Emperor subscribed $150,000, and the Reichstag granted $750,000. The German-Americans displayed even greater generosity than the sufferers' own fellow-countrymen. Their gifts of money drew forth from the German press and Government warm expressions of kindness and appreciation. Of about $150,000 distributed nearly the whole was raised in America.

Minor Events.—Celebrations and festivals succeeded one another through the year. On September 28th the Emperor unveiled the national monument on the Niederwald, near Rudesheim, designed by Prof. Schilling, of Dresden, and erected in commemoration of the victories over the French in 1870–'71. A Hygienic Exhibition was held in Berlin in April, and in July an International Art Exhibition in Munich.

GORDON, Major-General Charles George, English traveler and soldier, was born in 1830, and is a younger son of Lieutenant-General H. E. Gordon. He entered the military service as Lieutenant of Engineers in 1852, and took part in the Crimean War, in which he was wounded before Sebastopol. At the conclusion of the war he was appointed on the commission intrusted with the delimitation of the boundary between Turkey and Russia in Asia. After serving in the expedition to China, he remained in that country, and toward the end of 1861 undertook an exploring expedition to the Chotow and Kalgan gates in the Great Wall across Shensi, passing through the hitherto unknown capital of that province, Tiaynen. On his return to Peking he was appointed by the Emperor in March, 1863, commander-in-chief of the army sent to put down the Taiping rebellion. Mainly through his efforts the rebellion was suppressed in two years. In the English army he was promoted to be lieutenant-colonel in 1864, and in December of the same year decorated with the order of the Bath. He was vice-consul in the delta of the Danube from 1871 to 1873. He then undertook an expedition to Central Africa under the auspices of the Viceroy of Egypt, who appointed him Military Governor of the Equatorial Provinces. He ascended the Nile in a steamboat to the Albert Nyanza, combated the slave-trade, and in April, 1875, annexed Darfour to the dominions of the Khedive. The Khedive bestowed on him the title of pasha. He returned to Cairo in 1876, and refused to undertake another expedition to the Soudan, on account of the insufficiency of the military force placed at his disposal, and also of a disagreement with the Egyptian authorities. In 1877 he returned to the Upper Nile as Governor-General of the Soudan. He went around through all the provinces that year and succeeded in pacifying the natives in a measure by dismissing extortionate officials and striking the rebellious elements with fear by the rapidity of his movements and his energy of character. A formidable rebellion in Darfour was quickly subdued. A long and tedious war with Abyssinia was brought to an end; but his efforts to establish a permanent good understanding with that country were unavailing. He captured hundreds of slave-caravans, and

General Charles G. Gordon. (From pen-and ink drawing.)

cut off the source of the supply of slaves to a considerable extent; yet, through the lack of co-operation on the part of the Egyptian officials, he was unable to stop the traffic completely. In January, 1880, he retired from the governorship of the Soudan. He accepted the post of secretary to the Marquis of Ripon, Viceroy of India, but resigned upon reaching Bombay, in June of that year. He took command of the Royal Engineers in Mauritius in May, 1881, and retired from active service the same year, with the rank of major-general. The Cape Government, in March, 1882, commissioned him to settle the Basuto question. He had reached an understanding with the Basutos, when

the Cape ministry, disliking his conciliatory proposals, interfered to modify the terms, and General Gordon resigned in October, 1882. He was about to start for Central Africa, at the invitation of the King of the Belgians, to carry on and extend the work begun on the Congo by Stanley, when, after the destruction of the army of Hicks Pasha, the English and Egyptian Governments urged him to undertake a mission to the Soudan as plenipotentiary to conclude the transfer of the western provinces of the Soudan to the native rulers, and arrange a peace with the Mahdi and the revolted provinces, on the basis of the retirement of the Egyptian officials and military, and the abandonment of sovereign rights. In the winter of 1883–'84 he crossed the Nubian Desert without escort, and on his arrival at Khartoum issued a proclamation announcing the terms of peace, and promising that the institution of slavery would not be interfered with.

GORTCHAKOFF, Alexander Mikhailowitch, Prince, a Russian statesman, born July 16, 1798; died March 11, 1883. He came of a princely family, and was educated at the celebrated Lyceum of Tzarskoye-Selo. The famous poet, Pushkin, whose widow he subsequently married, was one of his fellow-pupils. Immediately after his graduation he became private secretary to Count Nesselrode, Minister of Foreign Affairs, and was present at the Congress of Laybach and that of Verona. In 1824 he was appointed secretary to the Russian legation in London; in 1830 *chargé d'affaires* at Florence; and in 1833 first secretary to the Russian legation in Vienna, where the illness and death of his chief left him as acting head. In 1841, as embassador extraordinary at Stuttgart, he negotiated a marriage between the Crown Prince of Würtemberg and the Princess Olga, sister of the Emperor Nicholas. This was a very considerable diplomatic triumph, and he was rewarded with the dignity of privy councilor. In 1850 he was appointed minister at the German Diet, where he became the friend of Bismarck, the Prussian representative, and where he was the center of all opposition to revolution.

Hitherto Russia had represented the policy of conservatism in Europe, and had been ready to crush the spirit of progress wherever it might appear. Though Gortchakoff was not in full accord with his master's ambitions, he was supposed to be more ductile than some of the older statesmen. Accordingly, in 1854, during the Crimean War, he succeeded Meyerdorff as embassador in Vienna, discharged his difficult duties with skill and courage, and played an important part in the negotiations which preceded the Treaty of Paris. He ceded only positions which were irrevocably lost, such as the exclusive protectorate of the Danubian provinces and the oversight of the mouths of the Danube, and inspired his adversaries with a high idea of Russia's powers of resistance even in the face of defeat.

In 1856 he was chosen by the new Emperor, Alexander, to succeed Nesselrode as Minister of Foreign Affairs, and this post he held for more than twenty-five years. Heretofore the Russian foreign ministers had been little known at home, and were considered as mere clerks of the Emperor, but Gortchakoff was highly popular as the inveterate enemy of Austria. From this time his one object was the aggrandizement of Russia, and his policy non-interference in the affairs of other countries. In 1856 he issued a circular denouncing France and England if they attempted to interfere with the administration of government in the Two Sicilies. An expression in this circular has become historical: "Russia does not pout—she meditates." For the most part she kept this attitude of meditation and recuperation many years. Gortchakoff rejoiced in the overthrow of his enemy, Austria, at Magenta and Solferino; and he acquiesced in French intervention in Syria in 1861 as a blow struck at Ottoman independence. A year later he energetically opposed any interference by France and England with the civil war in the United States. He was at that time engaged in repressing the Polish insurrection, and in replying haughtily to the notes addressed to him by the various European powers, remonstrating with him for his severities. He had been appointed vice-chancellor in 1862, and in 1863, to the delight of the Russian people, he became chancellor. Gortchakoff kept his attitude of absolute neutrality during the struggle of 1866 between Prussia and Austria; but in 1870, when Paris was besieged and Victor Emmanuel was entering Rome, he seized the opportunity to propose a revision of the treaty of 1856. In the London Conference that followed, he secured for Russia the right of having her war-ships in the Black sea—which was a great victory for Russian policy—and he was rewarded by the Emperor with the hereditary title of Serene Highness.

From this time until the Turko-Russian War, Gortchakoff was occupied in strengthening Russian influence in the East and bringing about an alliance between the Emperors of Russia, Germany, and Austria, and stood at the height of his power and influence. But after the Russian army crossed the Danube he was compelled to yield in importance to generals and engineers. When Europe refused to sanction the Treaty of San Stefano, Gortchakoff was discredited, as well as Gen. Ignatieff. At the Berlin Congress Schouvaloff played a more important part than he. He never forgave Bismarck and Beaconsfield for thwarting all his designs at this congress, and his resentment toward Bismarck led to a coldness between Berlin and St. Petersburg. He had ceased to be a prime factor in European or even Russian politics before Alexander II was assassinated, and long before he was superseded by M. de Giers as Minister for Foreign Affairs. He lived to a time when Russia could no longer play off

one state against another, and the theory of a balance of power became untenable; yet he could not adapt himself to a new policy. Russia came to need a great Minister of the Interior more than the most skillful of foreign diplomatists; but Gortchakoff had studied Europe more closely than his own country, took no interest in the problems of finance, of industry, or of Nihilism, and even bore no part whatever in the great revolution by which the serfs were freed.

He was a classical scholar, a master of the French language, and an enlightened patron of the arts. His diplomatic circulars were models of clear diction, ingenious argument, and a logic which always seemed to attain its object by putting his adversary in the wrong. He left two sons, Prince Michel and Prince Constantin, both of whom are in the diplomatic service.

GREAT BRITAIN AND IRELAND (UNITED KINGDOM OF), a constitutional monarchy of Western Europe. The supreme legislative power resides in Parliament, which must be convoked annually, as supplies are only voted, and the mutiny act renewed, from year to year. During the past three reigns little has remained of the royal authority but the forms. During the same period the hereditary senate of the Peers has been driven to relinquish practically its share of the legislative authority, while the basis of representation in the House of Commons, or elective assembly, has been extended. By the Reform Bill of 1867–'68 the franchise was conferred upon all rate-payers and occupants of real estate of £10 annual value in the towns and cities, and £12 in the country. The executive authority and the initiative in legislation are, practically, concentrated in the hands of the Prime Minister, who is appointed as the leader of the dominant party, and who selects his associates to preside over the departments and to prepare with him the schemes of legislation to be brought forward in Parliament. Prorogation is the legal death of Parliament; and legislation which is not finally enacted at the close therefore goes for naught. There are no constitutional limits to the power of Parliament. Victoria I, Queen of Great Britain and Ireland, and Empress of India, was born May 24, 1819, and succeeded her uncle, William IV, June 20, 1837. The heir-apparent is Albert Edward, born in 1841. The present House of Commons first met in April, 1880. It is the twenty-second since the union, and the tenth of the reign of Victoria. Unless previously dissolved it will last until 1887. The House of Commons consists of 652 members. In 1882 writs were suspended in thirteen constituencies, so that the number of representatives was 639. At the beginning of the term the House was divided as to parties between 203 Conservatives and 286 Liberals from England, 8 Conservatives and 52 liberals from Scotland, and 24 Conservatives, 19 Liberals, and 60 Home-Rulers from Ireland; together, 235 Conservatives, 357 Liberals, and 60 Home-Rulers.

The House of Lords is composed of the hereditary nobles of England, new English peers created by royal patent, the English bishops who are peers *ex officio*, 28 Irish peers elected for life, and 16 Scottish representative peers elected for each succeeding Parliament. No new peerage can be created in Scotland, and in Ireland none until three existing peerages have become extinct; but in England peerages can be created for life or in perpetuity in any number. The House of Peers consisted in 1882 of 516 members, of whom 5 were peers of the blood royal, 2 archbishops, 22 dukes, 19 marquesses, 117 earls, 26 viscounts, 24 bishops, 257 barons, 16 Scottish representative peers, and 28 Irish representative peers. Only 37 of the peerages are older than the seventeenth century, and 315 are not older than the present century, no fewer than 166 having been created during the reign of Queen Victoria.

The Government.—The Prime Minister, W. E. Gladstone, on forming his ministry in 1880, took the office of Chancellor of the Exchequer in addition to his regular duties as First Lord of the Treasury. After the close of the extra session in the autumn of 1882, the Cabinet was reconstituted. Lord Derby entered the Cabinet as Secretary for the Colonies, Lord Kimberley taking Lord Hartington's place in the India Office, and the latter Mr. Childers's place as Secretary of War, while Childers received the Chancellorship of the Exchequer, relinquished by Gladstone. Sir Charles Dilke obtained a seat in the Cabinet as President of the Local Government Board, Mr. Dodson becoming Chancellor of the Duchy of Lancaster. The Cabinet consisted in 1883 of the following fourteen members:

William Ewart Gladstone, First Lord of the Treasury; Lord Selborne, Lord High Chancellor; Earl Spencer, Lord President of the Council; Baron Carlingford, Lord Privy Seal; Hugh C. E. Childers, Chancellor of the Exchequer; Sir William Harcourt, Secretary of State for the Home Department; Earl Granville, Secretary of State for Foreign Affairs; the Earl of Derby, Secretary of State for the Colonies; Early Kimberley, Secretary of State for India; the Marquis of Hartington, Secretary of State for War; Lord Northbrook, First Lord of the Admiralty; Joseph G. Dodson, Chancellor of the Duchy of Lancaster; Joseph Chamberlain, President of the Board of Trade; Sir Charles W. Dilke, President of the Local Government Board.

The Lord Lieutenant of Ireland is Earl Spencer, who succeeded Earl Cowper May 3, 1882. The Secretary of State for Ireland is G. O. Trevelyan, who has not a seat in the Cabinet, as the Viceroy holds a Cabinet office.

The Committee of the Privy Council for Education has Anthony J. Mundella for vice-president. A new department of the Govern-

ment, the Committee of the Privy Council for Agriculture, was created in 1883, with the Chancellor of the Duchy of Lancaster for its first vice-president.

Area and Population.—The total area of the British Empire is 7,774,657 square miles; the population, according to the census of 1881, 249,259,832. The area of the British Islands is 121,483 square miles, and the population, as returned by the census of April 4, 1881, is 35,172,976, distributed as follows:

UNITED KINGDOM.	Square kilometres.	Males.	Females.	Total population.
England	131,628	11,961,842	12,652,084	24,613,926
Wales.....	19,069	678,060	682,458	1,360,518
Scotland.....	78,895	1,797,565	1,936,805	3,734,370
Ireland.....	84,253	2,533,277	2,641,559	5,174,836
Isle of Man....	588	26,291	27,798	54,089
Channel Islands	196	40,321	47,381	87,702
Soldiers and sailors abroad	....	147,540	.....	147,540
Total.....	314,628	17,184,896	17,988,080	35,172,976

The increase in England and Wales between 1871 and 1881 was 14·36 per cent., which was higher than in any decennium since 1831–'41; the increase in fifty years was 86·9 per cent.

The natural movement of population in the three kingdoms in 1882 was as follows:

UNITED KINGDOM.	Marriages.	Births.	Deaths.	Excess of births.
England.....	203,907	388,940	516,783	372,157
Scotland.....	26,574	126,182	72,966	53,216
Ireland	22,058	122,715	88,737	33,978

The natural increment of the population of England is about 1·45 per cent. per annum.

The total number of males returned by the census of 1881 as engaged in some definite occupation was 7,783,646, or 71·5 per cent. of all aged five years and upward; of females, 3,403,918, or 29·4 per cent. The civil service employed 50,245 persons, and the police 32,508. The number of soldiers in England and Wales at the date of the census (including yeomanry and militia) was 87,168, and of men in the Royal Navy (excluding 8,910 pensioners) 20,732. The number in the clerical profession was 35,823, including nearly 24,000 clergy of the Established Church; in the legal profession, 17,386; the medical profession, 22,936; engaged in educational work, 72 per cent., of whom were women, 171,831; actors and actresses, 4,565. The number of photographers increased from 4,715 in 1871 to 6,661 in 1881.

The population of Ireland was divided in respect to religion, according to the census of 1881, as follows: Roman Catholics, 3,960,891; Anglicans, 639,574; Presbyterians, 470,734; Methodists, 48,839; other denominations, 54,268; not determined, 530. The number of adherents to the different creeds in England was estimated in 1871 as follows: Anglicans, 17,781,000; Dissenters, 3,971,000; Roman Catholics, 1,058,000; Israelites, 39,000. In Scotland: Church of Scotland, 1,473,000; Dissenters, 1,486,000; Catholics, 320,000; Church of England, 73,200.

The total emigration from Great Britain and Ireland, from 1815 to 1882, amounted to 10,047,835 persons, of whom 6,608,035 went to the United States, 1,712,020 to British North America, 1,364,226 to Australia and New Zealand, and 363,554 to other countries. The emigration in 1882 from British ports was divided, in respect to origin and destination, as follows:

EMIGRANTS.	United States.	Canada.	Australia.	Other countries.	Total.
English	94,599	27,768	24,345	16,285	162,997
Scotch	19,004	4,640	6,240	2,368	32,242
Irish.....	63,300	8,048	6,704	1,080	84,132
Foreigners....	112,709	13,034	1,307	2,979	130,029
Unknown....	927	.....	8	2,958	3,893
Total.....	295,539	53,475	38,604	25,670	413,288

The immigration into the United Kingdom was 78,268 in 1882, 77,105 in 1881, 68,316 in 1880, and 53,973 in 1879.

The emigration from Ireland from 1856 to 1860 was at the average rate of about 100,000 persons a year; in the next five years, from 1860 to 1865, about 140,000 annually; from 1866 to 1870 about 130,000; from 1870 to 1875 about 70,000. In the year 1880 the number was about 93,000; in 1881 about 100,000. Nearly all the emigrants were furnished the means for the voyage to the United States or other points of destination by friends who had preceded them. In all, about £1,500,000 was remitted to Ireland in this way. This emigration did not proceed from the congested districts in the west of Ireland as much as from some other parts of the country.

The population of British cities of over 100,000 inhabitants was returned in 1881 as follows:

CITIES.	Population.	CITIES.	Population.
London*.....	3,814,571	Hull.....	154,240
Liverpool.....	552,508	Stoke-upon-Trent ..	152,894
Glasgow.....	511,582	} Newcastle.....	145,359
Birmingham	400,774	} Gateshead.....	63,808
} Manchester.....	341,414	Dundee.....	142,454
} Salford.....	176,235	West Ham‡...	128,692
Leeds	309,119	Portsmouth.....	127,989
Sheffield	284,508	Leicester.....	122,376
Dublin†.....	249,602	Sunderland.....	116,512
} Edinburgh.....	228,190	Oldham.....	111,343
} Leith	61,168	Brighton.....	107,546
Belfast.....	208,122	Bolton.....	105,414
Bristol	206,874	Aberdeen	105,054
Nottingham.....	186,575	Blackburn.....	104,014
Bradford.....	183,032		

The number of municipal boroughs in England and Wales in 1881 was 243, with an aggregate population of 8,412,121, or 32·4 per cent. of the total population of the kingdom. The population of London increased in the decade 1871–'81 17·3 per cent.; that of nineteen other large towns 16·5 per cent.

Postal Savings-Banks.—The deposits in the

* The Metropolitan District. The Police District contains 4,764,312 inhabitants.

† The Metropolitan Police District contains 349,648 inhabitants.

‡ The towns of West Ham, Croydon, and Tottenham form part of the London Police District.

Post-Office savings-banks on Dec. 31, 1882, amounted to £39,037,821, an increase of £2,848,326 over the amount of the previous year. In the Irish banks there was an increase of £90,503, which was more than the average increase of ten years. The number of depositors in the postal-banks was 2,858,976.

Education.—The act of 1870 provided that there shall be established in every school district public elementary schools with sufficient accommodation for all children whose education is not otherwise provided for. Children whose parents are unable to pay the school-fees have their expenses defrayed from the local rates. The public schools are under the supervision of district school boards, who, with their other powers, have authority to compel parents to provide for the education of their children between the ages of five and thirteen. The percentage of persons who were unable to sign their names to the marriage register in the five years from 1875 to 1880 was 14·8 among the men and 20 among the women. In 1879 14 per cent. of the men and 20 of the women married signed with marks in England, 9 per cent. of the men and 18 of the women in Scotland, and 31 per cent. of the men and 38 of the women in Ireland. The parliamentary grants to primary schools amounted to only £40,000 in 1840. Since the school act they have been increased from £914,721 in 1870 to £2,749,868 in 1882 and £2,938,930 in 1883. The number of schools inspected in Great Britain was 13,954 in 1873 and 21,136 in 1881. The average attendance increased from 1,783,730 to 3,273,501. In the vote for public education in 1883 allowance was made for 3,245,046 children.

Pauperism and Crime.—The number of paupers, exclusive of vagrants and casual poor, relieved in the poor-law unions and parishes of England and Wales in 1882 was 797,614, against 803,126 in 1881, 837,940 in 1880, 800,426 in 1879, 815,587 in 1875, and 1,079,391 in 1870. The number of able-bodied adult paupers included in the above was 106,280 in 1882, 111,169 in 1881, and 126,228 in 1880. The number of registered paupers and their dependents in Scotland in 1881 was 97,787, against 98,608 in 1880. The number of in-door and out-door paupers in Ireland, and the total, including others in asylums, was, for the five years, 1878–'82, as follows:

YEAR.	In-door.	Out-door.	Total.
1878	49,365	35,500	84,865
1879	51,764	39,335	91,099
1880	57,455	42,735	100,190
1881	55,304	53,688	109,655
1882	53,731	58,858	112,829

The number of criminal offenders convicted in 1881 was 11,353 in England and Wales, 1,832 in Scotland, and 2,698 in Ireland. In England and in Scotland there was a considerable decrease in ten years. In Ireland the number remained almost stationary. The substitution for penal colonies of a system of convict prisons, which has been gradually improved under the efforts of scientific prison reformers, has been attended with a gradual diminution of crime. In the ten or fifteen years previous to 1872 the practice of deporting convicts was gradually abandoned in obedience to the wishes of the colonists, who preferred a scarcity of labor to having it supplied by the criminal outcasts of the mother-country. In the five years ending in 1874 the number of sentences to penal servitude in England and Wales averaged 1,622 per annum; in the five years ending in 1879 it was 1,633; in the year 1881 the number was 1,525. As compared with the five years ending 1859, when the population was 20 per cent. less, the convictions in 1881 showed a decrease of almost one half. The number of convictions for short terms showed a corresponding improvement, being 9,266 in 1881, against an average of 9,848 in the five years ending in 1874, and of 12,058 in the five years ending in 1869. The average length of the terms to which convicts were sentenced has increased, and the population of the prisons has remained almost stationary, being 10,221 on March 31, 1882, against 10,160 at the end of 1871. Under the British prison system the convict is kept in solitary confinement, but at hard labor, during the first nine months of his imprisonment. During a second period he sleeps and eats in his cell, but works in company with his fellow-prisoners. At the end of this period, which is of variable duration, he is conditionally released on ticket-of-leave, under police supervision. The dread of the term of isolation, of the spare diet and the severe labor, has a greater deterrent effect than the prison discipline had in the times when it was less inflexible. The system of marks enables a prisoner to shorten his term of imprisonment by one fourth, and to earn money to be paid on his release. The illiterate are taught reading and writing, and trades are taught to those who have none. Of 9,107 prisoners in custody on July 1, 1882, 3,235 learned their trades in prison. The estimated value of convict-labor, exclusive of the portion utilized in the service of the prison, was, for the year ending with March, 1882, £217,274. There are a number of Prisoners' Aid Societies which encourage discharged convicts to lead honest lives. Of 1,582 male prisoners liberated in the year ending March 31, 1882, 954 were assisted by these benevolent societies; of 249 female prisoners, 34 received aid of this kind, and 144 were received in refuges. An important reform in prison management is the separation of prisoners hardened in crime from the rest. This was adopted in 1877–'78, and two years later the idea was further developed by the separation of novices in crime from the body of the prisoners. Cruelty on the part of jailers is not likely to occur, but the persecution of ex-convicts by the police under the system of surveillance has sometimes been complained of.

Commerce.—The total values of imports and exports in 1882 and the six preceding years

were, in thousands of pounds sterling, as follow:

YEAR.	Total imports.	Domestic exports.	Foreign exports.	Total exports.	Total commerce.
1882	413,020	241,467	65,193	306,660	719,680
1881	397,022	234,023	63,060	297,063	694,105
1880	411,230	223,060	63,354	286,414	697,644
1879	362,992	191,582	57,259	248,788	611,775
1878	368,771	192,849	52,635	245,484	614,255
1877	394,420	198,893	53,453	252,346	646,766
1876	375,155	200,639	56,137	256,776	631,931

The declared values of specie and bullion imported and exported in 1882 and the three preceding years were as follow, in thousands of pounds:

YEAR.	GOLD.		SILVER.		TOTAL.	
	Import.	Export.	Import.	Export.	Import.	Export.
1882..	14,376	12,024	9,243	8,965	23,619	20,989
1881..	9,963	15,499	6,901	7,004	16,864	22,503
1880..	9,455	11,829	6,799	7,061	16,254	18,890
1879..	13,369	17,579	10,787	11,006	24,156	28,585

The import and export commerce with the principal commercial nations in 1882, as compared with 1881, was as follows, in thousands of pounds:

COUNTRIES.	IMPORTS.		EXPORTS.	
	1881.	1882.	1881.	1882.
United States	103,208	88,353	29,796	30,970
India	32,629	39,921	29,244	29,059
France	39,984	39,090	16,970	17,421
Australia and New Zealand	26,975	25,175	21,878	25,365
Germany	23,650	25,571	17,481	18,518
Netherlands	23,023	25,321	8,900	9,380
Russia	14,053	21,048	6,165	5,772
Belgium	11,510	14,933	7,075	8,080
British North America	11,301	10,399	8,411	9,700
Sweden and Norway	10,054	11,759	3,361	3,623
China	10,704	9,936	5,965	4,613
Spain	10,023	11,488	3,655	3,670
British South Africa	5,413	6,275	7,073	7,496
Brazil	6,340	6,489	6,656	6,876
Turkey	4,170	4,932	6,879	6,423
Egypt	9,318	7,796	3,168	2,451
Italy	3,275	3,481	6,681	6,480

The import commerce with Europe and the Levant amounted, in 1882, to £183,306,000, against £163,552,000 in 1881; the export commerce to £88,834,000, against £87,621,000; import commerce with countries of North and South America in 1882, £108,707,000; in 1881, £120,962,000; exports in 1882 to American countries, £54,528,000; in 1881, £51,740,000; imports from all other foreign countries in 1882, £21,576,000; in 1881, £20,969,000; exports in 1882, £13,280,000; in 1881, £15,297,000; total imports from foreign countries in 1882, £313,589,000; in 1881, £305,483,000; total exports to foreign countries in 1882, £156,642,000; in 1881, £154,658,000; imports from British possessions in 1882, £99,431,000; in 1881, £91,539,000; exports to British possessions in 1882, £84,825,000; in 1881, £79,365,000.

The values imported and exported of the general classes of merchandise in 1882 were as follow:

CLASSES OF MERCHANDISE.	Imports.	Exports.
Articles of consumption	£183,460,000	£9,725,000
Raw materials	132,188,000	48,177,000
Manufactured articles	28,758,000	152,862,000
Miscellaneous	68,664,000	30,703,000
Total merchandise	£413,020,000	£241,467,000

The imports of cereals were £67,834,000; of fermented drinks, £8,066,000; exports, £2,635,000; of colonial produce, £43,034,000; of tobacco, £2,551,000; of animals and animal food-products, £44,155,000; of textile materials £85,199,000; of timber, etc., £18,042,000; of hides, etc., £14,154,000; exports of coal, £9,565,000; of metals, £35,484,000; imports, £12,278,000; of textile fabrics and dress manufactures, £102,786,000; imports, £18,365,000; of yarns, £18,410,000; imports, £3,311,000; of leather manufactures, etc., £3,488,000; imports, £1,928,000; of vessels, machinery, locomotives, etc., £13,621,000; of other metal manufactures, £7,268,000; imports, £2,642,000; of glass and pottery, £3,395,000; imports, £1,679,000; of paper manufactures, £1,305,000; of wood and straw manufactures, £1,419,000; of books, etc., £1,170,000; imports of works of art, £501,000; imports of drugs, dyes, and chemicals, £6,636,000; exports, £6,603,000; imports of resins, fats, and oils, £13,222,000; of fertilizers and waste products, £1,848,000.

The quantity of wheat imported from the United States in 1882 was 8,180,578 quarters; from Russia, 3,233,238; from India, 1,978,078; from Germany, 719,581; from Canada, 626,460; from Australasia, 577,530; from Chili, 386,484; from Turkey, 122,836; from Roumania, 45,404; from Egypt, 40,801; from other countries, 47,124; total, including flour, 16,860,084 quarters of 480 pounds, value £44,869,032. The large supplies which unexpectedly arrived from Russia and India had the effect of keeping down the prices, and of forcing the hands of the holders of grain in the United States.

The aggregate tonnage of sailing-vessels, with cargoes, engaged in foreign trade, which was entered at British ports in 1882, was 17,810,380 under the British, and 7,004,669 under foreign flags; total, 24,815,049, against 23,224,708 in 1881, and 10,054,981 in 1860; tonnage cleared, 20,392,626 British and 7,306,237 foreign; total, 27,698,863; steam tonnage entered, 17,477,111 British and 3,854,333 foreign; total, 21,331,444, against 19,268,327 in 1881, and 2,549,000 in 1860; steam tonnage cleared, 17,926,004 British and 3,987,910 foreign; total, 21,914,814; total tonnage entered, 30,318,938; cleared, 31,172,317. The aggregate tonnage of coasting-vessels entered in 1882, not including repeated voyages, was 41,535,274; cleared, 35,353,775.

The following table exhibits the number of vessels constituting the merchant marine of Great Britain and the aggregate number composing the merchant fleets of the colonies, with their registered tonnage in thousands of tons in 1881 and 1882:

MERCHANT MARINE.		SAILING-VESSELS.		STEAMERS.		TOTAL.	
		Number.	Tonnage.	Number.	Tonnage.	Number.	Tonnage.
United Kingdom..	1881.	18,780	3,640	5,492	3,001	24,272	6,641
	1882.	18,368	3,577	5,795	3,332	24,163	6,909
Colonies..	1881.	12,735	1,696	1,745	238	14,480	1,934
	1882.	12,813	1,649	1,820	239	14,633	1,888

The number and tonnage, in thousands of tons, of vessels employed in the home trade, i. e., between ports of the United Kingdom and on the coast of the British Channel and the North Sea from Brest to the mouth of the Elbe, partly in the home and partly in the foreign trade, and in the foreign trade of 1882, were as follow:

ENGAGED IN	SAILING-VESSELS.		STEAMERS.		TOTAL.	
	Number.	Tonnage.	Number.	Tonnage.	Number.	Tonnage.
Home trade.....	10,048	656	1,432	254	11,480	910
Home and foreign.	824	116	323	151	1,147	267
Foreign trade....	3,713	2,653	2,626	2,885	6,339	5,538
Total.....	14,585	3,425	4,381	3,290	18,966	6,715

Railroads, Posts, and Telegraphs.—The number of miles of railroads in operation in 1882, their aggregate cost of construction, and the gross and net receipts, compared with the totals for the United Kingdom in 1881, were as follow:

UNITED KINGDOM.	Miles.	Cost of construction.	Gross receipts.	Net receipts.
England and Wales.....	13,000	£635,186,000	£59,106,000	£28,178,000
Scotland.....	2,940	97,750,000	7,473,000	3,773,000
Ireland.....	2,465	34,963,000	2,811,000	1,268,000
Total 1882.	18,405	£767,899,000	£69,390,000	£33,219,000
Total 1881.	18,175	745,528,000	67,155,000	32,255,000

A considerable proportion of the street railroads laid down in recent years have been constructed by the municipal authorities under the tramway act of 1870, which gives local governments provisional authority to build, own, and control tramways. Of a total length of 564 miles in operation in the United Kingdom in June, 1882, 150 miles were the property of municipalities. This plan of building them at the expense of the municipal corporations insures a system of urban communication better adapted to the wants of the public than private companies would supply, besides preventing the monopoly of the streets for the profit of individuals. The roads thus constructed are usually leased under stringent contracts to private persons.

The number of post-offices in the United Kingdom in 1882–'83 was 15,406; persons employed, 44,600, including 2,500 females. The number of letters carried by the post in 1882–'83 was 1,078,000,000 in England and Wales, 117,000,000 in Scotland, and 86,000,000 in Ireland—total, 1,281,000,000; total postal-cards, 144,000,000; newspapers, etc., 429,000,000; post-office orders, 16,200,000; total value, £26,995,000. The receipts of the post-office in the year 1880–'81 were £6,733,427; expenses, £4,135,659. The number of letters per head of the population in the United Kingdom was 36, as compared with 21 in the United States, 15 in France, 13 in Germany, 6 in Italy, and 5 in Spain.

The telegraphs were transferred to the state in 1870. The length of the lines in 1882 was 26,465 miles; of wires, 121,720 miles. The number of dispatches sent was in England and Wales 26,928,722; in Scotland, 3,244.202; in Ireland, 1,919,102; total, 32,092,026. The number of offices in 1881 was 5,443. The receipts for the year 1880–'81 amounted to £1,633,884; expenses, £1,305,006. A resolution was carried against the Government in the House of Commons calling for a reduction in the rate for messages of twenty words or less from 1*s.* to 6*d.* The Government in its financial plans made arrangements for the speedy introduction of this reform, which has been discussed for fifteen years.

Colonies.—The British colonial possessions, covering about one seventh of the land-surface of the earth, are grouped into forty administrative divisions, some of them embracing a number of formerly separate colonies. Those containing a large and preponderant European population have all been endowed with self-government, the home Government retaining merely a veto on legislation, which is exercised only in matters of imperial concern. They possess representative institutions, modeled after the English Constitution, designated responsible government. The crown appoints the chief executive officer, called the Governor-General in Canada and the Governor in Newfoundland, Cape Colony, and the Australian colonies. Western Australia, Natal, Ceylon, and the Bahama, Bermuda, Windward, and Leeward islands, are governed by representative bodies, subject only to the veto right of the crown, but all the administrative officers are appointed and controlled by the home Government. The remaining possessions have neither responsible nor representative government, but are governed absolutely by the English Government and its representatives. Of this class is the Empire of India, ruled by a Governor-General under directions from the British Government, which has a special ministry for Indian Affairs. The affairs of the colonies are regulated by another department, the Colonial Office. The crown colonies are Gibraltar, Heligoland, Malta, Falkland islands, Guiana, Trinidad, Ascension, Mauritius, St. Helena, Sierra Leone, Aden and Perim, Cyprus, Hong-Kong, Labuan, Straits Settlements, Feejee islands, and Rotumah, in which the executive head is called a Governor; Jamaica, with Turks islands, where he is designated Captain-General; and Gambia, the Gold Coast, and Lagos, in which the delegate of the crown authority is termed Administrator. The annual cost of the colonies to the British Government

is something over £2,000,000, chiefly for military and naval expenses, and mainly disbursed in the nine military and naval stations of Gibraltar, Malta, Cape Colony and Natal, Mauritius, Bermuda, St. Helena, Cyprus, and Hong-Kong.

The following table gives the area and population of the colonies, dependencies, and military and naval stations composing the British colonial empire, with the statistics of commerce and finance in 1881 of most of the colonies:

POSSESSIONS.	Area, sq. miles.	Population.	THOUSANDS OF POUNDS STERLING.					Navigation, thousands of tons.
			Revenue.	Disbursements.	Debt.	Imports.	Exports.	
Heligoland	5¼	2,001	..	..	..	..	..	..
Gibraltar	1¼	18,881	46	45	..	..	..	7,633
Malta	119	149,782	186	188	846	19,097	17,820	7,705
Total Europe	126½	170,164						
Cyprus	4,200	186,064	..	..	..	..	..	..
India	877,959	198,508,723	72,560	76,604	157,389	62,114	75,995	6,469
Ceylon	24,702	2,758,529	1,288	1,269	1,942	4,418	3,393	3,070
Straits Settlements	1,445	423,884	456	442	77	15,862	13,074	5,101
Hong-Kong	32	160,402	276	204	..	..	..	5,686
Labuan	30	6,298	5	7	..	133	195	22
North Borneo	22,009	150,000	..	..	..	..	..	..
Aden	12	34,860	..	..	..	..	..	..
Perim	5	50	..	..	..	..	..	..
Total Asia*	930,394	202,228,400						
New South Wales	309,175	781,265						
Victoria	87,884	882,282						
Queensland	668,224	226,968						
South Australia	903,425	295,767	20,604	19,141	95,966	52,709	48,369	9,504
Western Australia	975,920	30,018						
Tasmania	26,375	118,928						
New Zealand	104,403	500,210						
Feejee islands	8,084	128,511	81	91	210	186	230	66
Rotumah	14	2,680	..	..	..	..	..	..
Total Australasia†	3,088,454	3,066,866						
Cape Colony, etc	221,950	1,249,924	4,835	5,472	13,262	9,737	4,424	1,849
Natal	18,750	418,167	440	395	1,632	1,918	768	441
Sierra Leone	468	60,546	70	72	73	374	366	326
Gambia	69	14,150	24	22	..	143	140	135
Gold Coast	600	408,070	120	87	..	337	482	341
Lagos	73	75,270	42	45	1	334	460	333
St. Helena	47	5,059	12	13	10	81	80	130
Mauritius	718	377,373	781	760	837	2,506	2,572	544
Ascension	34	27	..	..	..	..	..	..
Total Africa‡	243,104	2,603,486						
Dominion of Canada	3,470,392	4,324,810	6,174	7,016	32,374	21,944	20,477	8,104
Newfoundland	40,200	179,509	218	217	281	1,430	1,629	644
Bermudas	19	13,948	32	32	9	266	88	224
Honduras	7,562	27,452	44	41	..	202	247	149
Bahamas	5,390	43,521	41	44	58	168	114	220
Turks islands	169	4,732	8	7	..	27	26	157
Caicos islands	213	1,873	..	..	..	..	..	..
Jamaica	4,193	580,804	563	679	921	1,393	1,179	794
Cayman islands	225	2,400	..	..	..	..	..	..
Leeward islands	703	119,896	112	111	75	450	615	776
Windward islands	830	311,413	250	250	47	1,567	1,665	1,016
Trinidad	1,754	153,123	465	500	501	2,226	2,099	834
British Guiana	76,000	253,186	403	421	422	1,784	2,597	590
Falkland islands	6,500	1,553	7	7	..	34	89	54
Total America	3,614,160	6,017,160						
Total British possessions	7,849,575	214,086,850						

* Not including the Kuria Muria islands, Mosha, Kamaran, and Keeling islands, the total area of which is less than one hundred square miles.

† Not including the Chatham islands, Norfolk island, and the islands of Auckland, Lord Howe, Caroline, Starbuck, Malden, and Fanning. The natives of Australia, estimated at 55,000, and the Maoris of New Zealand, numbering 44,000, are not included.

‡ Not including Whale Bay, Tristan da Cunha, New Amsterdam, and St. Paul.

The railroad mileage in operation in British colonies at the beginning of 1882 was as follows:

COLONIES.	Miles.
British India	9,875
Canada	7,260
Australia, etc	5,426
Cape Colony	959
Ceylon	178
Natal	98½
Mauritius	82
Trinidad	38½
Jamaica	25
Guiana	21
Total	23,962½

The telegraph lines of India, Ceylon, Australasia, and Cape Colony, had an aggregate length of 58,156 miles.

The Army.—The army estimates for 1883–'84 provide for the following forces, constituting the peace establishment of the British imperial army:

PEACE FOOTING.	Officers and men.
Cavalry	16,998
Artillery	34,044
Engineers	5,732
Infantry	132,004
Colonial corps	2,475
Administrative troops	8,025
Total regular army	199,278
Regular-army reserve	43,000
Yeomanry and militia	151,793
Volunteers	246,180
Indian native army	120,882
Total	761,133

The distribution of the regular army, as proposed in the army estimates, is as follows:

STATIONED IN—	Number.
The United Kingdom	111,058
India	61,641
Gibraltar	5 193
Malta	5,932
South Africa	3,343
Halifax	2,268
Antilles	2,367
Bermudas	1,594
Hong-Kong	1,214
Ceylon	1,286
Singapore	1,028
Other colonies	2,404
Total regular army	199,278

The total number of troops with the colors, on Feb. 23, 1883, was 196,232.

There is a force of military police, 14,000 strong, not provided for in the army estimates; also, a native military police in India, numbering 190,000 men, the superior officers of which are English. Most of the colonies have militia and volunteer organizations.

The scarlet uniform, which has for many generations been worn by British troops, is about to be discarded, in accordance with the report of a committee of military and scientific experts, notwithstanding the sentimental attachment of a large portion of the public to the traditional color of conservative military circles, represented by the Duke of Cambridge, who, during the discussion, discoursed with effusive feeling of the "thin red line" of the British army in the field. Out of consideration for this sentiment, and for the attractiveness of the bright colors to recruits, the committee recommended that the red uniforms, with pipe-clayed belts, together with the blue uniforms of the marines and green ones of the rifle corps, be retained for full dress. The committee found a dark shade of the *khakee*, or earth-color, in use in the Indian army, and a darkish gray, equally invisible at long distances; but recommended that the gray be adopted as the uniform color, with brown for the belts and haversacks, since it proved a more permanent dye than the *khakee*.

The Navy.—The *personnel* of the navy, according to the navy estimates of 1883–'84, is as follows:

TROOPS AND CREWS.	Number.
Seamen	40,554
Boys	4,804
Marines (one half afloat)	12,400
Royal naval reserve	21,750
Total	79,508

Of the 240 vessels constituting the active navy in September, 1883, 128 were stationed in British waters, viz., 6 ironclads constituting the Channel fleet, and 9 constituting, with 6 other steamers, the first reserve; 27 vessels in port service, 39 school-ships, 4 royal yachts, 1 steamer on hydrographic service, 28 sailing-vessels, forming with the first reserve the coast-guard, and 8 vessels out of commission; 20 constituted the Mediterranean fleet, but this was temporarily increased by vessels detailed from the home station and elsewhere to 13 ironclads and 31 other vessels, together 44; 2 ironclads, 14 other steamers, and 1 sailing-vessel were stationed on the east coast of America; 1 ironclad, 6 steamers, and 1 sailing-vessel on the west coast of America; 8 vessels in Southern and Western Africa; 13 in India and Eastern Africa; 20, including 1 ironclad, in Chinese waters; 6, including 1 ironclad, on the Australian station; 5 were employed in hydrographic service, 5 were on the return voyage, and the remaining 10 were transports.

The armor-clad fleet numbered 3 iron-, 8 steel-plated, and 2 turret-ships of 10,000 tons and over; 8 iron- and 3 steel-plated frigates, 2 of the latter unfinished, and 6 iron- and 2 steel-clad turret-ships of between 8,000 and 10,000 tons; 14 ironclads, 2 building, in steel, and 1 ram of special construction of from 6,000 to 8,000 tons; 4 battle-ships, 1 turret-ship, and 2 rams of from 4,000 to 6,000 tons; and 7 turreted and 3 other ironclads of less than 4,000 tons' displacement, fit only for coast and harbor defense. Of the large vessels 12 are too lightly armored, and carry guns too small for ocean warfare, though most of them are swift and efficient as cruisers. Besides the vessels enumerated above, which make an efficient iron-clad fleet of 61 vessels, there are 9 which are relegated to the harbor service and 3 small ironclads which were built for colonial defense. Of the efficient navy 11 are turret and barbette ships of the heaviest armor and guns, among the strongest in the world, and 9 are smaller battle-ships of equally modern construction.

Finance. — The net revenues from various sources are stated in the finance accounts for the year ending March 31, 1883, as follow:

SOURCES OF REVENUE.	Amount.
Customs	£19,657,000
Excise	26,930,000
Stamps	11,841,000
Land and house taxes	2,800,000
Property and income tax	11,900,000
Post-Office	7,300,000
Telegraph service	1,710,000
Domains	380,000
Interest on local advances and Suez shares	1,218,845
Miscellaneous receipts	5,267,611
Total receipts, 1882–'83	£89,004,456

The expenditures under the various heads are given as follow:

BRANCHES OF EXPENDITURE.	Amount.
Public debt	£29,679,097
Civil list	408,541
Courts of justice	502,680
Other charges on the consolidated fund	680,778
Public works	1,824,616
Civil departments	2,390,402
Justice, police, and prisons	6,642,145
Public instruction, science, and arts	4,581,867
Foreign affairs	673,312
Other civil-service expenses	1,218,659
Army	15,502,351
Charges on account of troops in India	1,100,000
Navy	10,408,904
Grant to India for Afghan war	500,000
Armed forces in the Mediterranean	2,300,000
Egyptian expedition	1,595,500
South African military expenses	14,000
Customs and inland-revenue service	2,870,201
Post-Office	8,328,500
Telegraphs	1,510,000
Packet service	719,625
Total expenditure, 1882-'83	£38,906,278

The revenue per head of the population was £2 9*s.*, as compared with £2 8*s.* 7*d.* in 1881, £2 7*s.* 10*d.* for the five years 1876-'80, £2 6*s.* 10*d.* for 1871-'76, and £2 6*s.* 3*d.* for 1866-'70.

There have been many reductions in the rates of taxation within twenty years. The change of the malt duties and brewers' license-tax in 1881 to a beer duty and publicans' licenses effected an increase in the revenue from these sources from £8,444,401 to £9,095,040. The probate duties imposed in 1881 yielded £700,000, and the increase in the income-tax £1,800,000. The repeal of legacy duties and reduction of the income-tax in 1882 lessened the revenues by £2,624,000, which was partly made good by the £654,500 produced by the additional probate duties. Before 1877, incomes above £100 paid income-tax. In that year exemption was extended to incomes not exceeding £150, with £120 abatement on those below £400. The gross amount of incomes assessed in 1880 was £576,896,901. The rate of the tax is altered almost yearly, according to the exigencies of the treasury. The amount produced by the tax varied from £4,109,000 in 1876, when the rate was 2*d.* in the pound, to £10,650,000 in 1881, when it was 6*d.*, or 2½ per cent.

The state of the public debt on the 31st of March, 1883, was as follows:

Consolidated debt	£712,698,994
Terminable annuities	29,492,125
Unfunded debt	14,185,400
Total	£756,876,519

Adding the deficits due to savings-banks (£1,804,417), and deducting the approximate value of the Suez Canal shares (£32,491,600), the actual debt amounted to £725,689,336. The amount to be applied to the interest and reduction of the debt was fixed by the act of 1875 at £28,000,000, to be maintained by annual votes of Parliament.

In 1885 annuities, £5,200,000 in amount, expire, freeing so much of the revenue, which could be applied either to the reduction of taxes or to the amortization of the national debt. The Government determined to devote the entire annual sum to this latter purpose, and obtained the authorization of Parliament to replace the expiring annuities with new terminable annuities, which will reduce the capital of the debt £173,000,000 in twenty years. The operation will not be transacted in the open market, but through the medium of the Court of Chancery, which has its funds, amounting to £40,000,000, invested in consols, and of the National Debt Commissioners, who hold national debt stock on account of the Savings-Bank. The £40,000,000 of Chancery stock is to be canceled and replaced by an annuity of £2,674,168, running twenty years; of the Savings-Bank stock, £30,244,000 will be canceled at once and converted into three annuities of £1,200,000 each, for five, ten, and fifteen years respectively, which on expiration will be renewed, and increased by amounts representing the interest of the canceled stock, and equivalent amounts of consols canceled, the entire sum being £133,019,208. The annual sum of £28,000,000 established as the annual debt charge is thus continued. The reduction proceeding through the operation of the unexpired life and terminable annuities, and the new and old sinking funds, is not interfered with. If the extinction of capital stock effected through the new annuities causes 3 per cent. consols to rise above par, the advisability of an operation for the reduction of the rate of interest might become a subject for practical consideration.

The receipts of the local administrations of the three kingdoms, for the year 1880-'81, were as follow:

LOCAL RECEIPTS.	England and Wales.	Scotland.	Ireland.	United Kingdom.
	Pounds.	Pounds.	Pounds.	Pounds.
Rates	23,818,914	2,831,000	2,657,432	32,307,346
Tolls, dues, etc.	5,018,227	1,059,000	454,370	6,531,597
Public property	1,017,544	292,000	69,640	1,379,184
Government contributions	2,708,328	546,000	114,857	3,369,185
Loans	12,937,528	905,000	401,504	14,244,032
Miscellaneous	5,366,502	414,000	174,446	5,954,948
Total	53,867,043	6,047,000	3,872,249	63,786,292

The total expenditures by local and municipal administrations were as follow:

LOCAL EXPENDITURES.	England and Wales.	Scotland.	Ireland.	United Kingdom.
	Pounds.	Pounds.	Pounds.	Pounds.
Public charity	9,058,019	922,348	1,129,581	11,109,948
Municipal government, police, and public health	35,020,941	2,665,000	2,070,415	39,756,356
Other expenditures	9,318,346	2,353,796	737,837	12,409,979
Total	53,397,306	5,941,144	3,937,833	63,276,283

Session of Parliament.—The fourth session of the present Parliament, the tenth of the reign of Queen Victoria, was opened by commission February 15th. The Queen's speech expressed gratitude to the army and navy for the suppression of "a formidable rebellion in Egypt," and said that the arrangements for the reconstitution of the Government of Egypt would

be submitted to the consideration of the Sultan and the powers. The restoration of Cetewayo was justified as a guarantee of peace and order. Continued improvement in the social condition of Ireland was shown in the sensible diminution of agrarian crime and the regular enforcement of the law; at the same time, the existence of dangerous secret societies called for unremitting vigilance on the part of the Executive. The legislative programme embraced bills on the subjects of a criminal code, criminal appeal, bankruptcy, patents, corrupt practices, perpetuation of the ballot act, etc. The establishment of municipal government in the metropolis was promised, and reforms of local government in other parts of the United Kingdom, if time permitted. Other measures, to conciliate the neglected constituencies of Great Britain, were bills relating to police and universities in Scotland, and to education in Wales; while, as a peace-offering to the Irish, some of their legislative wants, not yet provided for, were to be dealt with. To the tenant-farmers of England and Scotland was extended the promise of compensation for agricultural improvements.

The fourth session is usually regarded as a critical period in the life of a ministry. The Government had provided itself with a new machinery of legislative procedure, in order to redeem the pledges and bring up arrears of legislation. A debate on the Queen's address, extending over eleven sittings, eight of which were taken up with the discussion of Irish affairs, followed by a long wrangle over the question of admission to Parliament, the free ventilation of Irish grievances, questions without end, attacks from the skirmishing "fourth party," and the resort to more obstructive and troublesome tactics by members of the regular Opposition, unchecked by Sir Stafford Northcote, were in a measure the result of cutting loose from the traditions of the House, and introducing stringent disciplinary regulations. Yet the Government was afraid to apply the *clôture*, though out-of-doors the ministers complained of obstruction.

The novelty of grand committees worked clumsily. Frequent changes in the order of business made by the Government provoked discussion and opposition, and the concurrent activity of the grand committees and the House confused the work of legislation. The procedure of the committees was intended to be more business-like than the forms of the House, but in the end the committees developed into a mere duplication of the House of Commons. The committee-room is provided with benches for the members of the two parties on each side, from which they rise to speak and address the Chair. The experiment of "devolution" was hardly successful. Of the four bills referred to the grand committees, three were sent back to the House of Commons, of which two afterward became law; but, owing to the pressure of other business, not one had been considered on report at the close of July, while the House of Lords had not received any of those or other ministerial measures of the first rank. In August, the legislation of the session was rushed through the thin and dwindling House with a precipitant hurry that furnished, in the speeches of the Opposition during the recess, one of the chief points in their arraignment of the Government. The London municipality, criminal code, river conservancy, ballot perpetuation, and criminal appeal bills fell to the ground. The Government sustained several remarkable defeats, such as the resolutions in favor of the reduction of local taxation and of restrictions on cattle-importation on account of foot-and-mouth disease, which were distinctly Conservative proposals, and notably the rejection of the affirmation bill; also the motion in favor of sixpenny telegrams, the rejection of Mr. Childers's plan for collection of the income-tax, and the abandonment of the Suez Canal agreement on account of the public hostility it provoked. The explosives, affirmation, national debt, and Scotch local government board bills interrupted the regular programme announced in the address. The more important of the positive fruits of the session were the agricultural-holdings bill for England and Scotland, the corrupt-practices bill, the bankruptcy bill, the patents bill, and the national-debt bill.

The Affirmation Bill.—On the first day of the session the Speaker read a letter from Mr. Bradlaugh, announcing that he would present himself to take the oath. Lord Hartington gave an assurance that the Attorney-General would at once bring in an affirmation bill. Mr. Labouchere, the junior member for Northampton, engaged that his colleague would take no further step till the fate of the bill was decided. A bill to amend the law relating to parliamentary oaths was accordingly introduced, allowing any member who objected to the oath to substitute for it a simple affirmation. Notice of opposition was given, though on former occasions Sir Stafford Northcote had called upon the Government to settle the question by legislation. The chief obstacle to the bill was that it was supposed to be extorted by Mr. Bradlaugh's menaces. Public feeling in the constituencies caused many among the ministerial majority to abstain from voting, and a certain number to vote against the bill. The motion for the second reading was defeated in a very full House, 292 against 289. On the following day Mr. Bradlaugh again wrote to the Speaker, claiming his right to take the oath. The Speaker asked instructions, and then Sir Stafford Northcote moved that "Mr. Bradlaugh be not permitted to go through the form of repeating the words of the oath." Mr. Bradlaugh pleaded his cause from before the bar. The motion was carried by a large majority.

On Mr. Bradlaugh's announcement that he

considered the action of the House invalid, the order to the Sergeant-at-Arms to exclude him was revived. He then, after an attempt to enter the House, brought an action against the Sergeant-at-Arms, as a means of having his status determined by the courts. On the 9th of April, in the case brought against Mr. Bradlaugh to recover penalties for unlawfully sitting and voting in the House of Commons, it was finally decided that only the crown, not a common informer, could sue for the penalties. In December, Mr. Bradlaugh won his suit against the Sergeant-at-Arms for unlawfully ejecting him from the House on August 8d; for, though, the authority of the House is absolute, it has provided no ordinance to protect its officers in carrying out such of its orders as contravene the common law.

Act against Corrupt Practices at Elections.—The bill against corrupt and illegal practices at elections contains stringent provisions to check treating, bribery, undue influence, and personation. The detection of corrupt practices disqualifies the candidate for sitting in Parliament, voting, or holding an office, for seven years, and for ever representing the constituency in which the offense is committed. Bribery, treating, and undue influence, are misdemeanors, punishable with a year's imprisonment. Mr. Parnell and his friends raised unavailing objections to the elastic character of the latter offense. Personation is made a felony. A maximum sum is set, beyond which election expenses can not be incurred. The legitimate expenses of election are minutely regulated. Conveying voters to the polls in vehicles is forbidden. Excessive payments, employment, and hiring are prohibited in careful terms. Mr. Broadhurst, the working-men's representative, proposed to have election expenses defrayed out of the rates, but Mr. Gladstone refused, on the ground that it would be a breach of faith with the Opposition. The expected effect of the measure is to reduce the cost of a general election from £2,500,000 to £800,000.

Compensation for Tenants' Improvements.—The agricultural-holdings bills encountered the opposition of the land-owning interest and of the liberal advocates of free contract. Several organizations for the remedy of defects in the landlord and tenant laws pressed the subject on the attention of the Government, notably the Farmers' Alliance. Compensation for tenants' improvements was recognized as a right inalienable in ordinary cases by contract; the measure was to be the value of the improvement to the incoming tenant. For the execution of permanent improvements the landlord's consent was required; temporary improvements could be carried out without consent, although for drainage-works the tenant was required to give notice to the landlord, with the option to the latter of executing the work himself and charging interest on the outlay. The Duke of Richmond's amendment, excluding from the value of improvements to be assessed whatever is due to the "inherent qualities of the soil," was accepted. The Marquis of Salisbury only yielded the last day of the session on an amendment depriving tenants of compensation for improvements undertaken for the implied consideration of a reduction of rent. The power of distress was limited by the act to one year's rent, with exemption of breeding-stock, etc.

Bankruptcy Bill.—The distinctive feature of Mr. Chamberlain's bankruptcy bill is the official examination of the circumstances of insolvency. There are sixty official receivers, created for the purpose of inquiring into the conduct of the bankrupt, and exercising a supervision over the collection and division of the assets, so as to insure fair treatment to all the parties concerned.

Patent Law.—For many years, unfavorable comparisons with the American patent laws have been common, and demands made for measures better calculated to encourage invention. The new patent law, going into operation Jan. 1, 1884, reduces the charges from £25 for three years to £4 for four years. For the full term of fourteen years, however, the fees amount to £154. Instead of making seven different visits to the patent-office, the inventor need only file his declaration and provisional specification, and then within nine months the definite specification. The documents, with £1 stamp attached to the first and £8 to the second, may be sent by post. The preliminary specifications are officially examined as to priority and patentability, and the complete specifications are made public, and rival claims must be brought in before two months; otherwise the patent is issued. After the lapse of the term of fourteen years, an extension for seven or fourteen years may be obtained. Foreigners can take out patents in their own names. The jurisdiction of the Lord Chancellor, Master of Rolls, and Attorney-General, who as Commissioners of Patents had the direction of the department, is abolished, except in appeals on legal points. The business is intrusted instead to a Controller-General of Patents, subordinated to the Board of Trade. If a patentee is unwilling to work his invention, the President of the Board of Trade can issue licenses to other parties, who remunerate the inventor at rates assessed by valuers. A patent can be annulled on the establishment of priority by another, but the contestant, in case his suit fails, is liable for damages. A patent can cover only a single invention.

The patent law contains provisions for the protection of designs, models, and trade-marks. Protection for designs lasts five years from the date of registration. A design which is in use in a foreign country must be registered in Great Britain within six months to obtain protection. No distinction is made between ornamental and useful designs; but such of the latter as consist in a mechanical action must be patented.

The protection of registered trade-marks lasts fourteen years. Firm-names, when printed or stamped in peculiar and distinctive characters, monograms, and fanciful words, are subjects of protection as trade-marks.

Labor Legislation.—The success of the British working-men in obtaining legislation to correct particular abuses, through their powerful trades-unions and their representatives in Parliament, deters them from engaging in the discontented agitations for sweeping theoretical reforms which are rife in other countries, and formerly were in England. The measures for their benefit and protection are gained only by contests with equally powerful and vigilant organizations which claim vested interests in prescriptive practices. Even the law against paying wages in public-houses, which was carried by the efforts of the trades-unionists, though not needed for themselves, since they insist on wages being paid on the premises, encountered vigorous opposition from the Liberty and Property Defense League and the Licensed Victuallers' Association. An act prohibiting girls under fourteen years of age from working at forges was opposed by the Government and rejected, in spite of the earnest representations of the trades-union representatives. Regulations for the sanitary protection of workers in white-lead factories and bake-houses were enacted, though contested warmly, as undue legislative interference. The provisions of the bankruptcy act were also extended in a limited way to workmen, who can secure a discharge in bankruptcy and have £20 worth of tools and household goods exempt; but the tradesmen's associations secured a provision authorizing the judge to issue an order against future wages. The same act gives the workman a preferred claim against a bankrupt employer's estate for £50, or four months' wages, instead of two months' wages as formerly, thus placing him on the same footing as clerks. A fishing-boats' act protects apprentices from cruelties as revolting as any in the records of slavery, and was suggested by heinous instances recently come to light. The employers' liability act does not work, yet the efforts of the trades-unionists to procure its amendment were futile. The number of cases decided under the act was greater in the second year of its operation than in 1881, 320 against 126; of these not quite half were won by the plaintiff, or settled out of court.

Criminal Code Bill.—The bill to codify the laws of criminal procedure was loaded with amendments, and finally dropped in committee. It was a significant measure, embodying among the recommendations of the royal commission on procedure some of the remarkable innovations, borrowed from the practice of Continental countries, which were already introduced in the extraordinary legislation for Ireland. They were suggested by the discovery of explosives at Birmingham, and other evidences of conspiracy in England. One section allowed magistrates to hold inquiries where no one was accused of crime. The Continental system of examining suspected persons was introduced, and trial before a special jury against the will of the prisoner was proposed. The doctrine of constructive criminality was extended.

Minor Legislation.—The explosives act, introduced after the dynamite discoveries in Birmingham, was brought in on the 9th of April, and passed through all its stages in both Houses the same day. In the bills granting pensions to Lords Wolseley and Alcester the Radicals and Land-Leaguers forced the Government to substitute lump sums of £25,000 for annuities. Sir Wilfrid Lawson's annual resolution in favor of local option received for the first time the formal approval of the Government and was carried. The long-decried contagious diseases acts were finally rescinded, some members of the Government declining to support them. The regular motion in favor of woman suffrage found this year 114 supporters to 183 opponents. A bill to suppress pigeon-shooting passed the lower House but was thrown out in the House of Lords. The bill to allow marriage with a deceased wife's sister was defeated in the House of Lords by parliamentary strategy. The committee of ten, one half from each House, appointed to consider the advisability of sanctioning the Channel tunnel, reported, July 10th, against the scheme on strategic grounds.

Irish Legislation.—By skillful and cautious tactics, allying themselves as far as was consistent with the Conservatives in their assaults on the Government, and by utilizing every point of agreement on Irish affairs with any of the sections of the Liberal and Conservative parties, and the desire of the Government to avoid a collision, the Irish party succeeded in having the Irish legislation of the year largely modified to suit their views, though the Government refused to entertain their proposals to reopen the questions assumed to be settled by the land act, to repeal the land act, and to relieve the distress in the west by public improvements and migration. They arrested the passage of the criminal code bill, and of Irish Sunday-closing and police bills. An Irish registration bill, opposed by the Conservatives as a measure for extending the franchise, was accepted by the Government; it was crowded out, but pledges were given to reintroduce it in the next session. Although the principle of relief-works was ostensibly rejected by the ministry, it was embodied in two Irish bills. One of these, the tramways bill, for constructing, with the aid of a state guarantee, tramways and light railways and for other purposes, embraced a proposal for state-aided emigration. This was vigorously opposed by the Irish members, who forced the Government to make a state grant for the trial of their alternative scheme of migration. The other bill provides for the improvement of fisheries on the Irish coast by the construction of piers and harbors with funds

advanced from the Irish Church surplus. T. P. O'Connor's laborers' bill enables the rural sanitary authorities to provide dwellings for laborers through the medium of the Board of Works by treasury loans.

A section of the Liberal party showed a desire to give a wide extension to the principle of local self-government.

The Conservatives pressed for the amendment of the Bright or purchase clauses of the land act, asking to have the Government extend more liberal loans and otherwise encourage the peasants to buy their holdings before they become further depreciated.

The amendments offered by the Land League proposed to make judicial rent run from the date of application, to give the court power to suspend proceedings for ejectment pending the determination of a fair rent, and to declare improvements to be by presumption the tenant's property. Mr. Parnell proposed furthermore to admit to the benefit of the act the leaseholders, 100,000 of the flower of the Irish tenantry, who are now for the most part rack-rented.

Foreign and Colonial Policy.—Egyptian affairs were made the subject of pertinacious inquiry in Parliament, rather than of direct attacks, except by Irish and independent members.

On July 10th the agreement made provisionally with M. de Lesseps, recognizing the exclusive right to build a canal on the isthmus, was communicated to Parliament. The storm which it excited raged more violently outside the House of Commons than inside. (See SUEZ CANAL.) The South African policy of the Government was more vigorously assailed than the Egyptian policy, in which it was credited with having carried out Lord Beaconsfield's ideas, and, as being in some sense still "under fire," was not to be closely criticised, provided Egypt were not relinquished. (See CAPE COLONY.)

Of the questions raised regarding French action in Tonquin, on the Congo, and in Madagascar, the ministry treated that of Mr. Shaw's arrest only as a matter of direct concern. Reparation was secured in the form of an indemnity to the missionary. In all questions of foreign policy great care was taken to avoid wounding French susceptibilities. The Ilbert bill aroused in and out of Parliament the most intense and resolute opposition of any part of the Government's policy. The Government adhered obstinately to the measure until the end of the year, but only to yield at last and offer a compromise, which was still not acceptable. (See INDIA.)

Political Parties.—The tendency of the Ministerial party in 1883 was to follow more and more the counsels of the advanced and stalwart section, particularly of Mr. Joseph Chamberlain, who conducted the most difficult and important legislation of the session. The plan of closer party co-operation in the constituencies has worked better since the novelty wore off, and the organizations assumed a less artificial form. The Conservatives, who at first loudly decried the "caucus," and predicted the demoralization and "Americanization" of politics, imitated it themselves by founding Conservative clubs. The Radical section of the Liberals was ready with a programme for the session of 1884 soon after Parliament. It was the assimilation of the borough and county franchise first, and a London municipality next.

The Conservatives continued to be led by the Marquis of Salisbury in the House of Lords, and by Sir Stafford Northcote in the House of Commons. Commotion in political circles was created by a letter from the pen of Lord Randolph Churchill, printed in the "Times" in April, calling upon the party to decide on one of these or on Lord Cairns for its leader, and advocating the claims of Lord Salisbury. The latter, without assuming such pre-eminence, was more strenuous and active than ever, and rallied about him the more vigorous spirits of the party. Sir Stafford Northcote, after the close of Parliament, attempted a Mid-Lothian compaign in Belfast, but only succeeded in arousing dangerous political and religious passions, and stirring the fires of hereditary strife in Ulster. The party suffered from the ill-health of its leader in the popular House. Conservative successes in some of the by-elections indicated dissatisfaction with the course of the Government in some particulars, but were not sufficiently marked to presage a return to Conservative guidance. The Marquis of Salisbury's gloomy warnings of the destruction of the Constitution, confiscation and communism, and Americanization of British institutions, met with no popular response. His party offered no positive programme, no constructive ideas with which they could appeal to the constituencies. The scheme of tenement-house reform, the propositions to lighten local taxation, and vague and immature projects to protect the British farmer, are the principal bids for popular support.

The Irish National Party.—The conflict between the Government and the Irish leaders was not renewed in 1883. The latter ceased their agrarian agitation, because the farmers were in a measure satisfied with the advantages secured under the land act. Warned by the revelations of conspiracy and the hideous crimes, for which the Land League was made answerable, they perceived that the active agitation of the national question would appeal chiefly to the desperate revolutionary minority, and result in the relentless destruction of their organization by the English Government. The land act embodied the principles on which they proposed to settle the land question.

The most remarkable incident of the debates was the controversy between Mr. Forster and Mr. Parnell in the debate on the address. The ex-Chief Secretary for Ireland, on February 22d, rose to explain the motives for his resignation. The main reason he declared to be his inability to obtain the powers he desired.

He suspected the Land League of a connection with agrarian crimes. The Government called upon him to release the imprisoned leaders without requiring a public promise, which he expected, if given, would have the effect of detaching the violent section from the Land League, and of shutting off the contributions from America. Sheridan, whom the Land-Leaguers proposed to employ to pacify the west of Ireland peasants, he knew to be a conspirator in secret societies. Mr. Forster now reiterated his suspicions of the Land-Leaguers, charging Mr. Parnell with either conniving at outrages, or, when warned and informed by facts, deliberately remaining in ignorance, and taking no pains to ascertain what was going on. He renewed the charge that the faint expressions of disapproval on the part of the Land-League orators operated as an encouragement to murder and outrage. Mr. Parnell replied in a contemptuous tone, prefacing his explanation by saying that he did not expect to make any impression on the opinion of the House, or English public opinion, and only desired to set himself right before the people of Ireland. He said that, since the passage of the crimes act, he had taken very little part in Irish politics, because such a state of affairs was created by the act that, between the Government and the secret societies, it was impossible for a constitutional agitation to exist.

In October, 1882, the "Irish World" declared the Land-League fund to be closed, and stated the amount sent to Mr. Egan at $342,548. This organ of the Irish Nationalists of America henceforth attacked Mr. Parnell and his party for not adopting the views of Michael Davitt and Henry George. It frequently called for an accounting from the treasurer of the League. Charges of misappropriation were echoed by Lady Florence Dixie, who, some time later, March 17th, puzzled the English police by a sensational account of a desperate attempt to assassinate her at her country residence near Windsor. Patrick Egan declared, in a letter to the "Irish World," at the beginning of January, that the total sum expended out of the Land-League funds for election expenses was £2,550.

When Parliament met, Mr. Healy was still in prison, and became the subject of earnest protests from his fellow-partisans. An ancient precedent was brought forward, which excludes refusal to give sureties to keep the peace, as well as treason and felony, from the privilege of Parliament. On the 4th of June he was released, together with Messrs. Davitt and Quin. Henceforward Mr. Healy took the lead of the aggressive section of the Irish party in Parliament, and in stinging taunts and embarrassing tactics showed himself a master.

The influence of the Irish party was shown in the elections, and by other signs, to have extended until it was no longer possible to question their claim to be the representatives of the Irish people. In the County Monaghan, previously represented by Liberals, Mr. Healy won a memorable victory, coming out at the head of the poll, July 2d. His former constituency, Wexford, returned Mr. Redmond by a large majority over the O'Connor Don. Even in Ulster the majority of the tenantry had gone over to Parnell.

On May 22d the "Kerry Sentinel," in the office of which a printer had prepared a handbill adjudged to be seditious, was confiscated under the crimes act, and the editor, Mr. Edward Harrington, was sentenced to six months' imprisonment.

The friends of Mr. Parnell raised by subscription a fund to be handed over for his own use, as a national testimonial. In May a papal circular was issued, discountenancing the collection, an action in which the Pope was declared by the Irish party to have been influenced by the English Government through Mr. Errington. The admonition had but a slight effect in discouraging subscriptions. When the fund was finally delivered to Mr. Parnell, December 11th, it amounted to £38,000.

The Nationalist orators, in stumping the country after the close of the session, met with manifestations of confidence and enthusiasm more general than were exhibited during the heat of the land-conflict. Mr. Davitt was as popular as his former associates, addressing audiences of twenty thousand in Ballybriggan, Waterford, and Cashel. The Castle authorities furnished a fresh subject for invectives by suppressing meetings in County Clare. As the excitement increased, the Executive applied its authority more rigorously, and suppressed League meetings throughout Munster, Leinster, and Connaught; but in Ulster, where the National meetings could not well be suppressed without interdicting at the same time the excited "loyal" demonstrations, the hostile factions were left for a long time to their contentions without interference. The campaign in Ulster was the signal for counter-demonstrations, and was characterized by the familiar riotous collisions between the Orangemen and the adherents of the National cause. It became the systematic practice of the Loyalists to collect mobs and create a riot wherever a Nationalist speaker was announced to make an address, and thus repel the "invasion" of Ulster. At Londonderry, November 2d, a meeting at which the Lord Mayor of Dublin, Mr. Dawson, was the orator, was the occasion for a serious disturbance. The Orangemen were armed, and several shots were fired. The leader of the mob, Lord Rossmore, was struck out of the commission of the peace, but the riot was made the pretext for yielding to the clamor of the English party and forbidding political meetings in Ulster. The suppression of meetings could not stay the general current of sentiment toward home rule. Mr. Healy declared, and his opponents acknowledged, that a general election would give the Nationalists, without any extension of the franchise, as many as seventy

seats in the House of Commons, to about twenty for the Conservatives and eight for the Liberals.

Political Crimes in Ireland. — The crimes act placed more arbitrary powers in the hands of the Irish Executive than any of the repressive acts which had preceded it. Before Lord Spencer and Mr. Trevelyan, juries rarely convicted a person accused of agrarian crime. The Government declared that this was because they were intimidated, while the Irish party asserted that the evidence was never sufficient to warrant a conviction. Under the new act, special juries were selected from a class who were more likely to convict than not. In Dublin, verdicts were brought in against the persons accused of three shocking assassinations. The Irish press denounced the proceedings as judicial murder, declaring that the judge's charge was partial, and that some of the jurors were intoxicated. Judge Lawson and juror Field were pursued by conspirators, and an attempt made to assassinate them on the street. Marines were brought over from England to assist the police in protecting judges and jurymen. For speeches made at this time, Messrs. Biggar, Davitt, and Healy, were summoned into court, and the two latter were required to find securities for their good behavior. This they refused to do, and they were sent to jail. Districts in Tipperary, Limerick, and Cork counties were proclaimed in January on account of agrarian outrages, and a Land-League meeting was interdicted in County Sligo. Further detachments of marines were assigned to police duty in different parts of Ireland. Mr. W. O'Brien, editor of "United Ireland," was committed for trial on account of his accusations against the judges and juries, and two days afterward was elected to Parliament for Mallow by a considerable majority over the Solicitor-General, Mr. Naish. He was discharged February 10th, owing to disagreement of the jury. In January the long list of executions began, with Patrick and Thomas Higgins, and Michael Flynn, at Galway, hanged for the murder of Lord Ardilaun's bailiff at Lough Mask, and Poff and Barrett at Tralee for Thomas Brown's murder. On March 2d twelve men were sentenced to imprisonment for conspiracy to murder and rebel, the specific charge being a plot to murder landlords as a class.

The Government was able to assert in 1883, for the first time in years, that order prevailed, and that the Queen's writs could again run in Ireland. This was sometimes attributed to the operation of the crimes act, and the energy of the Irish Executive, at other times to the beneficent workings of the land act. The suppression of lawlessness, and the breaking-up of secret bands of assassins, were a preventive, but, on the other hand, the exercise of despotic power and the suspension of ancient liberties were provocative of violence. The general cessation of the revolt against rent and of boycotting limited the occasions which were likely to produce breaches of the peace. The Chief-Secretary took credit for the fact that the number of outrages, exclusive of threatening letters, was reduced to 365 for the last six months of 1882, from 1,010 in the first half of the year, and 1,257 in the last half of the preceding year. The peasantry ceased their opposition, which was the latest piece of tactics generally employed against the landlord class. On May 1st the Lord Lieutenant published a list of awards of indemnities assessed on localities for agrarian crimes, some of them several thousand pounds in amount. In July a gang of conspirators in Sligo was detected, after an attempt to blow up a house with dynamite.

The Phœnix-Park Assassins.—The police was placed under the direction of Mr. Jenkinson, an official whose experience had been gained in Indian administration. A crafty detective service was organized. Their clews and purposes were concealed, while, with the help of information, betrayed in the inquisitorial judicial examinations which are allowed under the crimes act, they ferreted out an organized band of political assassins in Dublin, an offshoot of the Fenian Brotherhood. On January 14th seventeen persons were taken into custody, charged with conspiring to murder officials. They were mostly men under thirty, belonging to the artisan class. The most prominent was James Carey, a contractor and builder, who was a member of the Dublin Town Council. In the judicial inquiry one of them, named Farrel, turned state's evidence. Other evidence was collected from Kavanagh, another confederate. Subsequently Carey, who was one of the chief conspirators, induced by promises of immunity, turned informer, and revealed the history and character of the conspiracy. In November, 1881, Carey, who had been a director in the Fenian organization, was introduced by McCaffrey, one of the prisoners, to a man who passed by the name of Walsh. The latter said that he had come from England to establish a branch of a secret society which was to "make history." It was called the Irish Invincibles. The object of the organization was "to remove all tyrants from the country." It would number not over 250 members in the three kingdoms, picked men from the Irish Republican Brotherhood. McCaffrey, Carey, James Mullet, and Daniel Curley, a Fenian center, were sworn as the first members and chiefs of the Dublin branch, which was not to exceed fifty members. They inducted about twenty-five others. The oath was to obey the orders of the Irish Invincibles without inquiring more than was necessary to understand them, on pain of death. P. J. Sheridan, known previously as an influential agent of the Land League, who went disguised as a priest; a man called McCafferty; a woman, supposed to be a Mrs. Byrne, whose husband was secretary to a land confederation in England; and later a man supposed to be the chief of the organization, who was known only as

"No. 1," held communication with them, and furnished them with weapons and liberal gifts of money. Mr. Forster and Lord Cowper were designated as the persons first to be removed, and next Mr. Burke. The Invincibles, under orders from "No. 1," lay in wait for Mr. Forster several days in the early part of March, 1882. Joseph Brady, a stone-cutter; Timothy Kelly, a coach-builder; Thomas Caffrey; and Patrick Delaney, who shortly before the trial had been sentenced to ten years' imprisonment for another political crime—the assault on Judge Lawson—were the four occupants of the car in Phœnix Park on May 6th. They were driven by a professional car-driver, Fitzharris, *alias* "Skin the Goat." Carey signaled from another vehicle, and Curley had the direction of the arrangements. It was intended only to kill Mr. Burke, and Brady struck the blow; but, when Lord Frederick Cavendish struck him with his umbrella and called him a ruffian, Brady followed after and stabbed him also.

Frank Byrne was apprehended in Paris, February 27th. The English Government sought his extradition, on the charge of complicity in the Phœnix-Park murders, and then on a new charge of complicity in the attempts on Justice Lawson and Mr. Field. The procureur examined him, and on March 8th released him from custody. He then went to the United States, where Sheridan had found a refuge, and whither John Walsh, thought to be the "No. 1" of Carey's revelations, followed, after being arrested at Havre, and set at liberty. Applications made to the United States Government for the arrest and extradition of Sheridan were not entertained.

The trials of the prisoners began with that of Brady, on the 9th of April. He and Curley, and the youth Timothy Kelly, who, with Brady, struck the fatal blows, preserved a bold demeanor. With the evidence of Carey and seven other informers the proofs were complete; though Kelly was held up as a martyr who died rather than betray his companions. The three named, with Caffrey, Fagan, and Delaney, were sentenced to death; Fitzharris to penal servitude for life, to which penalty Delaney's sentence was commuted; Joseph Mullet, for the attack on Justice Field, was sentenced to the same; James Mullet, Daniel Delaney, McCaffrey, O'Brien, and Moroney were sentenced for ten years, and Thomas Doyle for five. True bills for murder were found against Walsh, Sheridan, and Tynan. The latter was identified as the mysterious "No. 1." Brady was executed on May 14th, Curley on the 18th, Fagan on the 28th, Caffrey on the 2d of June, and Kelly on the 9th.

Dynamite Plots.—The secret orders of Irish revolutionists, disappointed at the peaceful issue of the Land-League agitation, and exasperated by the rigorous repressive measures adopted by the English Government in Ireland, were more active in 1883 than they had been for years. Bands of conspirators formed in the United States as well as in the British Islands. Since Ireland was too well guarded, they made England the scene of their plots, the object of which was to terrorize the English people and Government, and keep alive in Ireland the cause of national independence. O'Donovan Rossa, in New York, had for a year or more proclaimed the "gospel of dynamite," and threatened the destruction of British ships and public buildings. On January 20th a tin box was found in Glasgow, which exploded and injured five persons. An attempt was made to blow up the gas-works in that city. On March 20th a terrific explosion occurred in the Local Government Board office in London. The explosive substance was placed on a window-sill. The effect was simply to make a hole in the massive stone wall of the building. A can of dynamite was placed against the "Times" office, but was accidentally overturned before it exploded; an analysis showed it to be identical in composition with that found in Glasgow. After this all the public buildings in London were guarded by night and day.

In April the organization which perpetrated the dynamite outrages was unearthed, and several of the most active agents of the conspiracy were arrested. The evidence obtained left it no longer a mere suspicion that the crimes were connected with the threats uttered in one of the American organs of the Irish revolutionists, and that the plots were partly concocted in the United States and the pecuniary means largely supplied from thence. Infernal machines had been known to be imported from America. This time the explosives were produced in England. A man named Whitehead rented a shop in Birmingham, where he ostensibly carried on the business of a paper-hanger and oil-merchant. Large consignments of chemicals sent to him by neighboring manufacturers excited the suspicions of a police officer. He bought glycerine in great quantities from one firm, and strong acids from others. The glycerine he said he sold to hairdressers and others. When the police ascertained that his purchases consisted of the constituents of nitro-glycerine, and saw that he did no business in his shop, they first examined the premises in his absence, and then arrested him for making and keeping an explosive substance with intent to commit a felony. From Whitehead's shop the detectives traced a young man to London, and learned who were his associates. He was arrested with a box in his possession containing 200 pounds of dynamite, which he had brought the day before from Birmingham. He described himself as William James Norman, a medical student. A man named Gallagher, who had in his possession nearly £900 in English and American notes, was next arrested, with four others in London, and Gallagher's brother in Glasgow. In Whitehead's place

were found many carboys of acids and cans of glycerine, with large quantities of dynamite in various stages of manufacture. These discoveries and arrests created a panic throughout England. The people of Birmingham left the city almost deserted. Sir William Harcourt framed the explosives act, and Parliament passed it with an expedition not paralleled since the suspension of *habeas corpus* in 1866. Within a few days Norman, whose true name was William Joseph Lynch, made a full confession. He was born in New York city, and was a carriage-maker. He joined a secret oath-bound society which met in the Bowery in New York, and had for its object the achievement of the freedom of Ireland by physical force. The society seemed to be divided into small groups, like the Russian Nihilists, and the members of each group knew each other by numbers. He heard frequent mention of "the old man," whom he understood to be Rossa. He was summoned to go on a mission for the society, and was directed to Gallagher. The latter was a young physician in Williamsburgh. Gallagher furnished him liberally with money, and ordered him to take passage for England. In London he met him again, and after several days of preparation sent him to Whitehead for the first package of dynamite, which was found in his room when he was arrested the night after his return. In their walks about London Dr. Gallagher pointed out to him the Parliament House and other buildings which would have to "come down." The prisoners were tried for treason-felony in June: Dr. Thomas Gallagher, Henry Wilson, Whitehead, and John Curtin were convicted and sentenced to hard labor for life; the rest were acquitted.

Murder of Carey.—The informer Carey was so generally execrated that the British Government did not venture to bestow on him a liberal public reward, such as was granted to the other informers and persons who were instrumental in bringing the murderers to justice. He displayed at the trial and later, with no lack of knowledge and natural intelligence, a character of singular baseness. The impulsive Irish people, who had been shocked at the Phœnix-Park assassinations, after witnessing the fortitude with which the condemned men had met their deaths, and the cowardice and heartlessness of their chief who had escaped, now turned upon him as the real criminal, and regarded them by comparison as misguided but devoted patriots. The English authorities consequently desired to get Carey out of sight and memory as soon as possible, and particularly to prevent vengeance being taken upon him by any of the many Irishmen who stood ready. The police kept him concealed, and, while avengers were looking for his arrival at American and Australian ports, got him safely embarked in the Kinfauns Castle for Cape Town. The vessel sailed from London July 4th. Carey was smuggled on board at Dartmouth, with his wife and seven children, under the name of Power. On the same steamer was a passenger who went by the name of Macdonald. He was Patrick O'Donnell, a California miner and naturalized citizen of the United States, forty-eight years of age, a man of resolute and adventurous spirit, who had lived in various parts of the world, and was probably connected with the Irish revolutionary societies. O'Donnell associated familiarly with Carey, and made sure that he was the informer. Carey's destination was the diamond-fields. At Cape Town they both changed to the Melrose Castle for Natal. When not far from port, on July 29th, while they were conversing in the cabin, O'Donnell suddenly called Carey by his right name, and drawing a revolver fired at him three times, in the presence of his wife, in whose arms he died in half an hour. O'Donnell was taken back to London, where the juries could better be depended upon than in South Africa. In Ireland and America he was extolled as a hero. Among the Irish of the United States over $50,000 was contributed for his defense; and Roger A. Pryor and A. M. Sullivan were retained to assist the English counsel; but they did not seek to take part in the pleadings in view of the probable futility of the request, particularly in opposition to the advice of the English advocates, who thought that it would prejudice their client's case. The defense was, that Carey, when addressed in his own name, first drew a pistol. O'Donnell was convicted December 1st. Congressman Finnerty, President of the Irish National League of America, was joined by many other politicians in his efforts to induce the American Government to intercede, and a resolution was carried in Congress, in accordance with which the President requested a delay in the execution, in order to allow the prisoner's counsel to show points of error in the trial. The British Government listened to the representations of the counsel, and then returned an answer forthwith to Minister Lowell that there was no ground for postponement and reopening of the case. O'Donnell was accordingly hanged on the appointed day.

Condition of Ireland.—Throughout the year a controversy regarding the relief of distress in Ireland engaged public attention. The Government had taken the position that, as the distress was local, being confined mostly to the western counties, and as the laws and traditions of the empire made public charity a local charge, the boards of guardians must carry out the work, and the poor-rates supply the means. The Government also pronounced in favor of the scheme of emigration as the best means of relieving the congested districts, and, in view of the inadequacy of the statutory provisions in such localities, offered to give £5 to the local boards toward the expenses of sending each and every destitute person to a new country. The Irish patriotic party declaimed earnestly against the plan of depopulation as a remedy

for poverty. They advocated the adoption of a central system of relief-works, proposing as suitable and profitable objects the construction of railways, the reclamation of waste lands,* planting of barren districts to forests, and, as most important of all, a system of arterial drainage to cover the whole of Ireland. The Government could lend its credit to this scheme without loss, it was argued, because large areas in the most fertile districts are water-logged.

The scheme of emigration was begun in the spring of 1882, through the efforts of Mr. James L. Tuke, who undertook the task as a private benevolent enterprise, and received contributions which enabled him to settle during that year about 1,300 persons, from Connemara and neighboring districts, in the United States and Canada. The condition of the poorest class of Irish farmers was described by Chief-Secretary Trevelyan as more deplorable than that of any class of people in any civilized country. There are 67,000 farmers of less than five acres, and 160,000 of from five to fifteen, of which, in many cases, only two or two and a half acres are arable. The land has been spaded over and planted to potatoes until it yields only 90 cwt., instead of from six to nine tons. After the failure of the potato-crop in 1879, these people were reduced to the verge of starvation. The Duchess of Marlborough's fund (£130,000), the Mansion-House collections (£174,000), the Land-League relief fund, the "New York Herald" and other American relief funds, and the £1,500,000 from the Irish Church surplus, all but a sixth of which was apportioned out in loans and grants, helped to sustain them during that and the succeeding bad year, until, in the third year, there was an unusually good crop. A large proportion of the tenant-farmers of this class defaulted in their rent in 1881. Nearly 50,000 in the counties of Mayo, Donegal, and Galway resorted to the arrears act, to obtain the advantages of which it is necessary to pay a year's rent. This the new crop failure in 1882 placed beyond the power of very many. There were evidences of the return of acute distress in the winter of 1882–'83. Physicians observed the prevalence of the feebleness and disease resulting from low and unnatural diet, in which sea-weed took the place of more substantial food. The Government could not affect to ignore a state of things in which a large part of the population of the western counties were enduring semi-starvation, and hundreds of families were evicted from their holdings. The fact that the work-houses were only half full was but a specious excuse, as the work-houses could accommodate no more than a fraction of the suffering, and as it was known from experience that, owing to the strength of household ties and their reluctance to leave their land uncared for, the work-house system is inoperative for the relief of want among the Irish peasantry. Out-door relief, which under the English poor-law system is lavishly bestowed, is practically prohibited by the poor-law regulations of Ireland.

Besides the scheme of public works to furnish employment, and the relaxation of the work-house test in the administration of public charity, as demanded by the Irish party, and the scheme of assisted emigration, favored by the Government, the improvement of the coast-fisheries and the encouragement of manufactures, were suggested by others as the only hope of permanently relieving the chronic agricultural distress of Ireland, by furnishing the people with other employments. Some believed that capital for industrial undertakings, such as linen-factories, etc., would flow into Ireland if it were not hindered by the agitation and incident disorders. Mr. Trevelyan, in reply to the demands of the Irish party, expressed the unwillingness of the Government further to burden the British tax-payers to assist the Irish. The advances made during the recent distress to furnish seed had been abused by the guardians of certain impoverished unions, who had dealt out the seed-potatoes for food to the people, in the expectation that repayment of the debt would never be required. Irish members denied that the British had ever been taxed for Irish relief. The famine-debt of 1847–'49, amounting to about £10,000,000, was remitted, but the Exchequer, they argued, was reimbursed by the imposition of additional taxes. While the tax on malt was reduced from 2*s.* 8½*d.* per bushel to 6*d.*, that on whisky was more than trebled, producing in Ireland £3,000,000 in 1871 against £900,000 in 1851, and making the burden of imperial taxation equivalent to an income-tax of 5*s.* 3*d.* in the pound, while the taxes collected in England represented only 2*s.* 6½*d.* in the pound of the national income.

A memorial was received by Lord Spencer on the 9th of January from the Roman Catholic bishops of the west of Ireland. They stated that one half of the potato-crop and from one third to one half of the oat-crop had been lost; that the portion harvested was generally of inferior quality; that the rains had prevented the gathering of turf, causing a scarcity of fuel; and that the destitute, comprising from one fifth to one third of the population, had generally parted with their money and their stock to pay rent and arrears, and were in debt to the shopkeepers, who would give no more credit. The bishops proposed as a remedy for the distress, which would increase every week of the ensuing six months, unless relieved, that the Government should extend loans for the improvement of the holdings, rather than furnish employment on public works, which they considered demoralizing. The loans to the amount of five years' rent

* In 1842 a scheme contemplating the reclamation of about one million acres was adopted by Parliament, and money voted for the purpose. Only one quarter of that area was reclaimed, consisting of what is now as good arable land as there is in the country. Sir Robert Peel advocated in 1849 the extension of the works.

were to be secured simply by the tenant-right. The refusal of the Government to entertain this proposal elicited a reply from the prelates on the 11th of March, in which they declared it to be the duty of the Government then to provide out-door relief, and condemned the resolution, heartlessly avowed in Parliament, to sweep from the land by starvation, which was preferred by the people to the work-house, or by wholesale emigration, the laborers and small tenants. In Connaught there were nearly 2,000,000 acres of rich pasturage from which the fathers of these men had been evicted in famine-years, that, they thought, ought to be restored to their children, whom it was now proposed to transport in a mass.

On May 1st the time allowed to Irish tenants to take advantage of the arrears act expired. About 136,000 tenants altogether made application. The arrears cleared away amounted to about £2,500,000, toward which the state contributed £810,000.

State-aided Emigration.—At the end of March the first departure of emigrants aided by the state took place from Belmullet, in Mayo; 360 persons were shipped to Boston entirely at the expense of the Government, while additional assistance was furnished by the Tuke fund. After a number of parties were sent, the information was transmitted to the United States that some of the poor-law unions took advantage of the Government grant to ship their paupers to America. The American Irish raised an outcry, and the immigration authorities were prompt to act. One family, which arrived by the City of Richmond at New York in the beginning of July, was sent back. The steamship companies were notified that the law against landing paupers would be strictly enforced. The immigrants who arrived subsequently were thoroughly examined, and all who were unsuitable were returned, until the managers of the Tuke fund and the English officials took the pains to make the investigation before sending them out, and shipped none who could not legally be received.

Famine in Skye and the Western Highlands.—There was destitution in the western Highlands of Scotland, in the Hebrides islands, and on the coast of Ross-shire, attributable, as in Western Ireland, to the paucity of the productions on which the peasantry depend, and to similar agrarian conditions. The potato-crop and the herring-fishery, from which the inhabitants derive the principal part of their subsistence, both failed entirely in 1882. The grain-crops were also destroyed by hurricanes in the late autumn. The Highlanders formerly held the land in common, but the application of the modern English law gave the fee simple to the chiefs. The land has become more profitable for grazing, and even for hunting preserves, than for agriculture. The peasantry have consequently been displaced, and those who did not emigrate crowd each other in these infertile western districts. A croft of from four to seven acres is made to support the increasing family until four or five cotters occupy the original patch.

Unseaworthy Vessels.—The President of the Board of Trade, Mr. Chamberlain, declared his intention of preparing laws to prevent the loss of lives on unseaworthy ships through the culpable negligence of their owners. Of 3,118 lives lost in 1882 from foundering, defective machinery, overloading, etc., not including those on wrecked vessels, he considered that a large proportion was chargeable directly to the owners, who, in order to carry more freight, or save expense in repairing, sent vessels to sea in an unseaworthy condition, risking the lives of all on board, while they were insured against loss. In December, a set of rules which Mr. Chamberlain proposed to embody in legislation, establishing a strict official inspection, was submitted for criticism to the bodies representing the shipping interests.

Blasphemy Trial.—The prosecution of George William Foote, George Ramsay, and H. A. Kemp for blasphemy created excitement in February and March. The charge was founded on a coarse attack on the Christian religion, holding the Saviour up to ridicule, which was published in the Christmas number of the "Freethinker." They were found guilty, and sentenced to prison for twelve, nine, and three months respectively.

Rifle-Match at Wimbledon.—The annual volunteer rifle contests at Wimbledon, opening July 9th, were favored by fine weather, except on the days on which the international match was contested by twelve picked marksmen of the British volunteers and twelve of the national guard of the United States. The British team won by forty-eight points. Their victory was in a measure due to their greater practice at long-distance firing, in which the element of chance largely enters, and to the rainy weather, with which they are more familiar. At the practical military distances the Americans led the score by a few points. The national challenge trophy was won by the Scotch twenty, and the Elcho shield by the Irish team, making the sixth victory for them, to the eleventh for England and the fifth for Scotland.

GREECE, a kingdom of Southern Europe. (For details relating to area, territorial divisions, population, etc., see "Annual Cyclopædia" for 1882.) The present Constitution was elaborated by a Constituent Assembly in 1864. The legislative power is exercised by a single Chamber of Deputies, elected for four years by direct vote. George I, King of the Hellenes, is the second son of the King of Denmark, born Dec. 24, 1845. He was offered the crown by the National Assembly, in accordance with a protocol providing for the annexation of the Ionian isles, signed June 5, 1863, in London, by the three protecting powers, France, England, and Russia, and began his reign October 31st of that year. The number of deputies in the Chamber is 187.

The ministry which was formed March 15, 1882, is composed as follows: President of the Council and Minister of Foreign Affairs, Mr. Tricoupis; Justice, since July 21, 1883, *ad interim*, Mr. Contostavlos; Finance, Mr. Kalligas; Public Worship, Mr. Lombardos; War, Mr. Karaschakis; Navy, Count-Admiral Tombazis, since July 21, 1883, *ad interim*; Interior, Mr. Tricoupis, *ad interim*.

The Consul-General of Greece, at New York, is Mr. D. N. Botassi. The United States Minister Resident and Consul-General at Athens, is Hon. E. Schuyler, and the United States Consul at Patras, Mr. E. Hancock.

Army.—The law of June 21, 1882, has thoroughly reorganized the Greek army. All able-bodied men are required to serve in the army during nineteen consecutive years, of which one is in the active army if the soldier belongs to the infantry, two if belonging to a special arm, eight or seven years in the reserve, and ten in the militia. The army is composed of 29,368 officers and men.

Navy.—The fleet consisted in 1881 of two steam ironclads and thirteen other vessels, besides two torpedo-boats and ten coasting craft; and there are building: two gunboats, thirty-six torpedo-boats, and two sloops with torpedo-boats.

Finances.—The national indebtedness of Greece on Jan. 1, 1883, was as follows:

DATE OF BONDS.	When to be canceled.	Number of outstanding bonds.	Original amount in drachmas or francs.	Present amount in francs.
1863	1896	38,324	5,932,800	8,400,836
1867	1895	70,593	25,000,000	17,648,250
1871	1899	13,261	4,000,000	3,315,250
1874	1918	49,380	26,000,000	24,690,000
1876	1920	28,700	10,000,000	2,000,000
1879	1919	117,390	60,000,000	58,695,000
1880	1924	238,050	120,000,000	119,025,000
		555,698	250,932,800	228,783,336

			Francs.	Francs.
1824-'25 of 100....	£3,513 × 25 francs=		8,782,500	
" 150....	708 × 25 francs=		2,636,250	
" 500....	843 × 25 francs=		10,537,500	
	£5,059		21,956,250	
Not yet ascertained				21,956,250
Loan of 60,000,000 for protecting powers				57,828,000
Circulation bearing interest				17,800
Loan made from the National Bank				64,984,630
Loan made from the Ionian Bank				3,104,050
Due the heirs of King Otho				8,460,800
Total				381,631,866

The 170,000,000 Franc Loan.—By a vote of 110 against 56, the Greek Chamber of Deputies ratified, on Jan. 5, 1884, the agreement which the Government had made with a syndicate of members, who assumed a 5 per cent. loan to the amount of 170,000,000 francs. The price fixed was 68½ per cent. The net proceeds of this loan the Government proposed to spend in canceling its indebtedness to the National Bank and the Ionian Bank, for the purpose of resuming specie payment; to the extent of 12,000,000 francs in subsidizing railroads to be constructed, and various other items. The Government gave as security for the loan the balances due for duties by the larger cities and the proceeds of the stamp and tobacco taxes, the latter estimated to amount to 15,000,000 francs in the future. The syndicate received as an indemnity for its expenses the sum of 230,000 francs.

Petroleum Monopoly.—The Greek Government has discovered that out of 22,000,000 litres of petroleum annually consumed, only 3,500,000 litres actually pay duty, the remainder being smuggled. The extent of coast is such that control is absolutely impossible, hence the Government intends transforming the petroleum-trade into a Government monopoly.

The Latin Union.—As Greece forms one of the European states composing the so-called Latin Union, having bimetallism for its basis instead of the sole gold standard, she has been invited by France to attend a preliminary meeting of representatives in 1884, the compact expiring by limitation in 1886, and France apparently wishing to have the arrangement renewed.

Postal Service.—The number of post-offices in 1880 was 143. These forwarded altogether in that year 3,828,754 letters and postal-cards, 1,206,936 newspapers, and 63,224 sample packages, together 5,098,914 items of mail matter. The postage collected was 646,654 francs, and the expenses were 390,363 francs.

Telegraphs.—There were in operation in 1881 100 offices, the length of line was 5,079 kilometres, and that of wire 6,316. The number of messages forwarded was 433,547. The receipts amounted to 665,036 francs, and the outlay to 949,759 francs.

Railroads.—The only lines in operation in 1883 were the 12 kilometres from Athens to the Piræus, and the 61½ kilometres from Volo to Larissa.

Commerce.—The foreign commerce in 1881 was as follows:

	Imports.	Exports.
	Francs.	Francs.
From and to the United Kingdom	31,810,000	35,486,000
Turkey	17,455,000	2,618,000
Austria	24,752,000	6,717,000
Russia	10,301,000	2,009,000
France	15,155,000	11,519,000
Italy	5,302,000	3,182,000
Germany	.....	2,885,000
Other countries	4,908,000	3,794,000
Total	109,683,000	67,710,000

The chief export articles are currants, olive-oil, goat-skins, lead, figs, gall-nuts, silk, soap, tobacco, and cotton fabrics. The exportations from Greece in 1882 and 1883 were:

DESTINATION.	1883.	1882.
	Tons.	Tons.
To the United Kingdom (inclusive of *in transitu*)	52,005	50,870
To France	10,410	12,270
To the United States	8,175	8,275
To Germany, Holland, and Belgium	6,560	5,300
To Austria	1,740	1,450
To other countries	740	980
Total	79,680	79,145*

* Against 90,480 tons in 1881.

The American trade with Greece was as follows:

FISCAL YEAR.	Imports into the United States from Greece.	Exports of domestic merchandise from the United States to Greece.
1880	$451,379	$145,572
1881	550,638	142,042
1882	899,561	849,467
1883	1,231,580	91,017

Merchant Marine.—There were sailing under the Greek flag, in 1881, 5,180 sea-going and 6,697 coasting vessels, together 11,877 vessels, being manned by 28,034 sailors.

GREELY RELIEF EXPEDITION, THE. In accordance with the plan of the International Geographical Congress at Hamburg, in 1879, for the establishment of a series of circumpolar stations for scientific observation, Lieut. A. W. Greely, of the Fifth Cavalry, United States Army, was sent out, under instructions from the Signal-Service Bureau, to take charge of the American station at Lady Franklin bay. The point selected for this station was the most northerly and the most difficult of access of the series, being at Discovery harbor, lat. 81° 44′ north, and long. 64° 45′ west. Lieut. Greely received his instructions in April, 1881, and a contract was made at St. John's, Newfoundland, with the owners of the Proteus, a vessel that had been used for Arctic navigation, to convey his party to a point on shore from which it could reach its destination by land. His assistant, Lieut. J. B. Lockwood, and other members of the party, left Baltimore about the middle of June, to join Greely at St. John's. On the 18th of August a telegram was received announcing an auspicious beginning of the work of the station. Only a month had been occupied in the passage from Newfoundland to Lady Franklin bay, and Discovery harbor was reached on August 11th. At Littleton island the party had found letters left by English explorers, and at Life-boat Cove a transit instrument of the Polaris. The station was named in honor of Senator Conger, of Michigan, who had been active in promoting its establishment. In January, 1882, letters had been received from Dr. Octave Pavy, who had gone to the Arctic regions with the Gulnare in 1880, and had joined the Greely expedition at Godhaven. These were dated in September, 1881, and contained the last news received from the station. The following is a list of the party:

First-Lieut. A. W. Greely, Fifth Cavalry; Acting Signal-Officer and Assistant—Second-Lieut. Frederick F. Kislingbury, Eleventh Infantry; Acting Signal-Officer—Second-Lieut. James B. Lockwood, Twenty-third Infantry; Acting Signal-Officers—Sergts. Edward Israel, Winfield S. Jewell, George W. Rice, David C. Relator, Hampton S. Gardner, William H. Cross, David L. Brainerd, David Linn; Corporals and privates—Nicholas Salor, Joseph Eliot, Charles B. Henry, Maurice Connell, Jacob Bender, Francis Long, William Whistler, Henry Bierderbeck, Julius Fredericks, and William A. Ellis. Octave Pavy, M. D., of Disco, Greenland, was commissioned as Acting Assistant Surgeon, and accompanied the expedition in that capacity.

It was arranged before Lieut. Greely's departure that in the summers of 1882 and 1883 expeditions should be sent to replenish the stores of the colony, and to afford any relief of which it might stand in need. It was understood that, if they failed to reach Lady Franklin bay, provisions and documents of instruction were to be *cachéd* at the farthest accessible point on the east coast of Grinnell Land, and a depot of supplies established at Littleton island. Lieut. Greely was instructed, if no relief expedition previously arrived, to abandon the station not later than September, 1883, and retreat southward by boat, following closely the east coast of Grinnell Land until he met the relieving vessel or arrived at Littleton island, where it was assumed relief would be surely awaiting him. The relief expedition of 1882 was sent out in the Neptune, in charge of Lieut. Beebe, and set sail in June of that year. It proved an unfavorable season; and after contending with the ice for a month, the vessel only reached the latitude of 71° 20′. Finally, stores were *cachéd* at Littleton island and Cape Sabine, and the Neptune returned.

The second relief expedition, that of 1883, was placed in charge of Lieut. E. A. Garlington, of the Seventh Cavalry, with a party of fourteen men, including a competent ice-pilot and three experienced sailors. The Proteus was again employed to make the trip from St. John's. She was regarded as an exceptionally stanch sailer, and was specially fitted for the service. She was 150 feet long, carried 618 tons, and had compound engines of 110 registered horse-power. Her hull was of oak, sheathed three inches thick over all parts vulnerable by ice. Her equipments and supplies were regarded as complete, and she was furnished with duplicate or triplicate appliances, such as were specially liable to injury. The Proteus was commanded by Capt. Richard Pike, with a crew of twenty-two men. The Yantic, of the United States Navy, under Commander Frank Wildes, was ordered to accompany the Proteus, to render all possible assistance, and to remain at Littleton island until the return of the relief expedition under Lieut. Garlington, in case it should be able to proceed to the station at Fort Conger. Lieut. Garlington received his instructions from the head of the Signal-Service Bureau at Washington. They began as follows:

You are aware of the necessity of reaching Lieut. A. W. Greely and party with the expedition of this year. This necessity can not be overestimated, as Lieut. Greely's supplies will be exhausted during the coming fall, and unless the relief-ship can reach him he will be forced, with his party, to retreat southward by land before winter sets in. Such a retreat will involve hardship and the probable abandonment of much valuable public property, with the possible loss of important records and life. For these and other reasons, which will occur to you, no effort must be spared to push the vessel through to Lady Franklin bay.

In case it should be found impracticable for the Proteus to make its way up Smith's sound, Garlington was instructed to retreat from his advanced position, land his party and stores at Life-boat Cove, discharge the relief-vessel with orders to return to St. John's, and prepare to remain until relieved the following summer. He was then as speedily as possible to endeavor to communicate with Lieut. Greely by means of a sledge expedition under his own personal charge. Such stores were to be left at Cape Sabine as it was practicable to leave there, and thence a smaller party, still under Garlington's personal charge, was to push on as far as possible, or until Greely was met. With regard to the Yantic, it was stated in the instructions that it would accompany the expedition to Littleton island, rendering such aid as might become necessary and as might be "determined by the captain of that ship" and Lieut. Garlington when on the spot.

The Proteus left St. John's on the 29th of June. On the 13th of September the Secretary of the Navy received a dispatch from the same place, signed by Commander Wildes, and announcing the return there of the Yantic, bringing Capt. Pike and crew of the Proteus and Lieut. Garlington and the Greely relief party, with a brief statement of the failure of the expedition. The facts, as subsequently brought out, showed that the Proteus had arrived at Godhaven, Greenland, on the 6th of July. The Yantic did not reach the latter point until the 12th. Lieut. Garlington found that the Danish authorities there had received no instructions in regard to assistance for the expedition, and the skin-clothing and dog-drivers expected were not in readiness. Procuring such supplies as could be obtained on short notice, and taking on board the stores left at Godhaven the previous summer, the Proteus proceeded on the 16th to Disco Fiord, where an Esquimau driver was expected. Near that place the vessel ran aground, but was got off without serious injury. On the 19th she brought up against a solid ice-floe, beyond which one of the islands of the Belgone group was sighted. On the 20th Cape York came in view, and the day following the ship passed to leeward of D. E. Carey island and lay there while Lieut. Garlington landed and examined the depot of provisions left by the Nares expedition in 1875, which he found in fairly good condition. Taking copies of the records found there, he proceeded and rounded Cape Alexander and entered Pandora harbor on the morning of the 22d. The weather was delightful, and no ice was to be seen to the northwest. Garlington therefore decided to push on without stopping at Littleton island, and to make his first *caché* of provisions at Cape Prescott. Before noon, however, he encountered the edge of a pack of ice apparently extending across the sound. While waiting for an opening, he landed and examined the *caché* of provisions at Cape Sabine, which he found in good condition, except that the tarpaulin covering had been torn by bears, and the boats were badly scratched. Later in the afternoon narrow lanes opened in the ice on the western side of the sound, and the Proteus worked her way slowly and with frequent ramming, until the morning of the 23d, when she was within four miles of Cape Albert. The pack had then closed, and an effort was made to work the vessel back to open water in the vicinity of Cape Sabine. At 2.45 P. M. the vessel came to a stand-still within 400 feet of open water, and the ice-pack closed heavily in upon her, smashing the starboard rail, forcing up the deck-planks, and breaking through into the starboard coal-bunkers. The stores on deck and near at hand were hastily thrown over on the ice, but the vessel filled and threatened to sink before the task of getting out her supplies was nearly completed. Two whale-boats and a dinghy were got out, the chronometers, sextants, and records were secured, and at 6.50 P. M. the vessel was abandoned, Lieut. Colwell being the last to leave her, and twenty-five minutes later she sank. A part of the stores were with great difficulty transported to Cape Sabine, and a deposit of 500 rations for Lieut. Greely was made three miles west of that point. Before the stores were all secured, the floe had moved off, so that the remainder could not be obtained.

Lieut. Garlington then decided that it would be impossible to proceed northward with the small boats. He did not believe the Yantic would attempt to cross Melville bay, but, in case she did so, she would find a record of the disaster at Littleton island, and know what course to take. Garlington therefore determined to cross Smith's sound and make his way down the Greenland coast to Upernavik. At Cape York he opened communication with a party of Esquimaux, and learned that nothing had been seen of the Swedish vessel Sophia, which he somewhat expected to encounter. He sent Lieut. Colwell with a lightly loaded boat directly across the bay to Upernavik, while with the rest of the party he made his way around by the trend of the coast. At Browne's island he picked up a record left there in a cairn thirty-five years before by Sir John Ross, and on the 23d of August reached Cape Shackleton, where he met a party of Esquimaux sent to his relief by Commander Wildes, of the Yantic. Ten days later all the survivors of the expedition were gathered upon the Yantic at Upernavik, whence the return was made to St. John's. The Yantic had reached Littleton island on the 8d of August, and, finding Garlington's records, had proceeded southward again, searching the coast and islands until Saunders islands were reached. There the ice-pack closed about the vessel, and it was forced to retreat under the lee of Northumberland island. On August 9th the pack had loosened, and the vessel made its way through, but could not get near the coast. It therefore

proceeded to Upernavik and sent a whale-boat to Cape Shackleton. August 22d she reached Godhaven, where Lieut. Colwell arrived on the 31st, having been thirty-nine days in an open boat. Reaching Upernavik, the Yantic found the whole party, and on the 2d of September set sail for St. John's.

The failure of the expedition was the cause of wide-spread regret, and much criticism was passed upon its conduct. No authentic information had been obtained of the Greely party. An Esquimau story had been picked up by the Yantic at Danish harbor, to the effect that Dr. Pavy had died, but that the rest of the party were well. Another Esquimau report was, that the officers had been murdered by their men, but no credence was given to these stories. The worst aspect of the case was, that no substantial relief had in two years been afforded to Lieut. Greely, and there were grave doubts as to whether he could survive another winter at Lady Franklin bay, or succeed in reaching succor if he left there in pursuance of his instructions, without finding the expected supplies on his way.

Lieut. Garlington was severely criticised for not leaving his stores at Littleton island on his way northward, and Gen. Hazen, chief officer of the Signal-Service Bureau, declared that Garlington had received supplemental orders, just before sailing, to the following effect:

The naval tender is to join the Proteus at St. John's, Newfoundland, and to proceed with her to the neighborhood of Littleton island. The Proteus is to land her stores, except supplies for more northerly stations, at Littleton island on her way north. If she succeeds in reaching Lady Franklin bay she is to pick up the stores, excepting the house and depots, if possible, on her return. The naval tender will await the return of the Proteus at the neighborhood of Littleton island, and on her return steam to the south in her company until she reaches the southern limits of the ice-pack, when the vessels may separate. Should the Proteus be crushed in the ice, her crew will retire on Littleton island, and the tender will bring to St. John's, Newfoundland, the officers and crew of the Proteus, the rest of the party to remain at Littleton island. But should the ice render it dangerous for the tender to remain in the neighborhood of Littleton island until the Proteus returns, or her crew and the expeditionary force succeed in reaching there, the tender may go to the south, leaving full particulars at Littleton island. Signals by flags, heliograph, and guns should be preconcerted, and communication by this means should be maintained between the two vessels as long as possible after they are separated by the passage north of the Proteus. Nothing in the northward movement must be allowed to retard the progress of the Proteus. It is of the utmost importance that she take advantage of every lead to get up to Lady Franklin bay.

Lieut. Garlington, in his own report to the Signal-Service Office, reflected severely upon Capt. Pike and his crew. He said that the Proteus had run past the harbor of Godhaven in consequence of that officer's ignorance of its proximity; that the grounding of the vessel at Disco Fiord was owing to his negligence in not taking soundings; and that when the vessel was "nipped" in the ice above Cape Sabine his crew was unmanageable and stole supplies belonging to his (Garlington's) party. "Force would have been needed," he said, "to compel the observance of the disciplinary regulations necessary to a successful retreat from our perilous position, and more force than I had at my command. I determined, therefore, to keep my men and stores separate and distinct, avoiding, if possible, any unnecessary collision." With regard to the alleged supplemental orders, and the criticism upon his course, Lieut. Garlington said:

I desire to call your attention to the manifest injury done me in the publication of certain statements immediately after the news of the disaster reached here. These statements, purporting to have been authorized from the Signal-Office, were to the effect that I had been furnished with "supplementary instructions" prior to my departure from the United States, which instructions I had positively disobeyed. The only instructions I ever received are the original instructions published at the time. An unsigned written paper was inclosed in the envelope with my instructions. This paper is simply an unauthenticated copy of a memorandum prepared by an officer in your office. I was informed that this memorandum was to have been furnished the Secretary of the Navy, to form the basis of instructions to be given the commander of the vessel ordered to accompany the Proteus. The paper was not addressed or signed. Indeed, it bore no official marks whatever. I have never at any time regarded it as an order, and I was surprised to find the statement published that this paper was the supplementary instructions. When I found it among the papers furnished me, I at once carried it to you and called your attention specially to that clause relating to landing supplies on Littleton island. You said, in substance, you did not know how that had gotten in there, and impressed upon me the necessity of carrying out as far as possible the instructions I had received. These instructions were based upon the letter of Lieut. Greely, and you called my attention to the fact that Lieut. Greely strongly urged that the officer commanding the relief party should have "no latitude of action." The paper was not addressed nor signed; indeed, bore no official marks whatever. I did not then, nor have I at any time since, regarded it as an order, and I was surprised to find the statement published that this paper was the "supplementary instructions."

On the 10th of October the Secretary of the Navy addressed to Commander Wildes, of the Yantic, some inquiries as to his failure to co-operate more efficiently with the Proteus. He said:

Your instructions, under the date of June 9th, were to "proceed to the northward, through Davis straits, in company with the steamer Proteus, if practicable," but not to go beyond Littleton island. It appears that the Yantic and Proteus were together at Disco island on July 15th, when the Proteus sailed northward; but that the Yantic did not finally leave that island until July 20th; the Proteus reached Carey island July 26th; the Yantic not until August 2d; the Proteus passed Littleton island July 22d, and was crushed in the ice July 23d; the Yantic did not reach Littleton island until August 3d. Between July 23d and August 3d, namely, on July 26th and 28th, Lieut. Garlington and the whole party of the Proteus had come to Littleton island and Pandora harbor, and not finding the Yantic, had continued to the south in open boats in search of her, notwithstanding the orders of the War Department, given for such a contingency, to land with their stores at or near Life-boat Cove, in Littleton island, and to prepare for remaining until next year. Had the Yantic, however, been at Littleton island July 28th, instead of being twelve days be-

hind the Proteus, Lieut. Garlington's relief party would have remained at that point, with ample supplies, keeping "their telescopes on Cape Sabine and the land to the northward," and waiting for Lieut. Greely, whose orders required him to endeavor to reach that vicinity not later than September, 1883, and who would not then have found awaiting him, as is now the case, if he has successfully obeyed his orders, neither house nor provisions, but only the record of the complete failure of the mission of the Proteus and the Yantic. . . . Your attention is also called to another point. You had been furnished with copies of the instructions to Lieut. Garlington and were aware that he was ordered, in the event of the failure of the Proteus, to reach Lady Franklin bay, to establish the relief station at Littleton island, and that Lieut. Greely would endeavor to reach that point in September, expecting there to find a relief party, a house, food, and provisions. You were at Littleton island on August 3d, and learned that the Proteus had been crushed, and that Lieut. Garlington and his whole party had gone south, leaving nothing for Greely at Littleton island. You could have readily landed there provisions and supplies, but omitted to do so. You will please explain this omission, and will furnish the department a schedule in detail of the provisions of all kinds which you then had on board the Yantic, and a similar schedule of those you had on hand when you arrived at St. John's on September 13th. In the instructions of the War Department to Lieut. Garlington, dated June 4, 1883, is the following clause: "A ship of the United States Navy, the Yantic, will accompany you as far as Littleton island, rendering you such aid as may become necessary and as may be determined by the captain of that ship and yourself when on the spot." You will inform the department whether or not you had knowledge of this clause. Inclosed you will also find a copy of a memorandum marked "Inclosure 4," containing instructions for the guidance of the naval tender and the Proteus, and you will inform the department whether, during your voyage, these or any such instructions were seen by you, or were only communicated to you.

In his reply, dated Oct. 16th, Commander Wildes explained that the Yantic was forced, on account of the condition of her boilers, to go from St. John's to Greenland under sail, and to take an easterly course to avoid the ice of the Labrador coast, while the Proteus steamed directly for Godhaven. He said:

No time was lost, and no unnecessary delay was made at any point. The Proteus, carrying a large supply of coal, and steaming at full speed, had only to delay to obtain the stores left at Godhaven last year, and a native dog-driver from Disco Fiord. She then went north without stopping. Had I sailed from Godhaven at the same time as the Proteus, besides being unable to keep up with her, I should have arrived at Littleton island, 1,000 miles distant, with my coal-supply reduced to about 75 tons and the boilers in a leaky, precarious condition. This is without taking into account any detention from thick weather or ice, which can not be counted on, as the normal condition of this region appears to be fog.

After explaining the dangers and difficulties of Melville bay, he added:

In view of these facts I should have felt justified in delaying to a still later date the attempt to cross Melville bay, or even not making the attempt at all. But I did not delay one moment after I considered my ship prepared and the weather had cleared, but pushed across to Cape York, feeling certain from the thick, foggy weather, raw, chilly air, flumes of snow and smooth sea, that the middle pack was not far distant. Pandora harbor was reached six days after the boats had gone south. To conclude this part, I did not intend to run the vessel under my command in the hap-hazard, happy-go-lucky fashion which finally brought the Proteus to grief, but to make sure, so far as possible, of every step which I took. Had the Proteus been ordered to keep company with the Yantic, it would have been vastly better for all concerned.

Regarding the so-called supplemental instruction, spoken of as "Inclosure No. 4," Commander Wildes declared that he never heard of it until his arrival at St. John's on the return trip. In conclusion, he expressed his willingness to shoulder all the responsibility that belonged to him, and asked, in case there was any doubt that he had performed his full duty, that a court of inquiry be ordered to investigate his conduct.

Lieut. Garlington's report not being wholly satisfactory to the Signal-Service Bureau and the War Department, a series of questions were addressed to him, replies to which were received on the 24th of October. In these he explained more fully why he failed to establish a depot of supplies at Littleton island and to remain in that region for the arrival of the Yantic, which he was convinced would not be able to make her way through the ice-pack of Melville bay. He also explained why he was obliged to leave a portion of the supplies of the Proteus on the ice-floe, and was unable to leave any boats for the use of Lieut. Greely. In answer to the question why he did not remain north of Cape York with his party, he said:

I did not remain at Cape York because I did not see then, nor do I see now, how I could possibly have been of any service to Lieut. Greely. From the best information attainable I am of the opinion that there are no more than 125 Esquimaux from Cape York to Rensselaer bay, and it is a well-known fact that they are a very improvident and shiftless race, and on the verge of starvation every winter. To have quartered a party, however small, without provisions, on these people, with the chance of Lieut. Greely reaching there with his party during the fall, would have been but to seriously endanger the lives of the whole community, without being able to accomplish any good whatever. I had not more than two weeks' supplies when I left Cape York. I left that point for the same reason I left Cape Sabine—to endeavor to help Lieut. Greely in the only way it seemed to me practicable.

In conclusion, he also asked for a court of inquiry if his explanation of his conduct was not satisfactory.

After these explanations had been made, the Secretary of War addressed a letter to the Chief Signal-Officer, in which he sharply criticised the entire management of the relief expedition. He thought that two serious omissions had been made which contributed to its failure. In the first place, Lieut. Garlington should have established a base of supplies at Littleton island on his way northward, and in this connection the Secretary made some pointed references to the careless manner in which the memorandum known as "Inclosure No. 4" had been dealt with. It had been inclosed in the instructions without clearly being made part of them. The other important omission was the failure of the Proteus and the Yantic to keep together, which had not been satisfac-

torily explained. Secretary Lincoln was also of opinion that Lieut. Garlington should have remained at or near Littleton island. The case was submitted to the President, with recommendation that a court of inquiry be ordered. The order to that effect was issued Oct. 31st, and the court, consisting of Brig.-Gen. S. V. Benet, Chief of Ordnance; Col. R. B. Ayres, Second Artillery; and Lieut.-Col. O. M. Poe, of the Corps of Engineers, met on the 8th of November. Maj. Henry Goodfellow, Judge Advocate of the United States Army, acted as recorder. No further action was taken with reference to the conduct of Commander Wildes, of the Yantic.

Testimony before the court of inquiry occupied several weeks. Lieut. Garlington and Lieut. Colwell testified regarding the conduct of the expedition, and repeated the criticism upon the action of Capt. Pike and his crew. Capt. Pike gave evidence as to the condition of his vessel, his own experience, and the character of his crew. Commander Wildes was examined with reference to the part taken by the Yantic. Gen. William B. Hazen, head of the Signal-Service Bureau, testified in regard to the preparation for the expedition, the employment of the Proteus, and the instructions furnished to Lieut. Garlington. Secretary Chandler gave an explanation of the outfit of the Yantic and the instructions under which she was sent out, and other witnesses were examined at length. Argument by counsel was begun on the 3d of January, 1884, and Gen. Hazen read a paper in defense of his own course regarding the relief expedition.

The report of the court of inquiry was withheld from publication until drawn out by a resolution from the Senate in February, 1884. It embodied a digest of the testimony taken and the conclusions reached. While declaring that Lieut. Garlington had erred in not waiting longer at Pandora harbor with the object of obtaining from the Yantic supplies with which to make a depot for a winter station at Life-boat point or Littleton island, the court regarded this as an error of judgment "committed in the exercise of a difficult and unusual discretion," for which he "should not be held to further accountability." His general conduct of the expedition was commended as characterized by "zeal, energy, and efficiency," both before and after the loss of the Proteus. The failure of the expedition was attributed to the "grave errors and omissions" of the Chief Signal Officer of the army.

Various opinions had been given as to the situation and prospects of Lieut. Greely. Garlington, in his report, had said:

> I am of the opinion that if Lieut. Greely should reach Littleton island this season he will divide his people among the different Esquimau settlements, and the stores he will find on his line of retreat, supplemented by the game of that region, will be sufficient food for his party during the coming winter. Unless the conditions of the ice permit Lieut. Greely to leave Discovery harbor in his boats, I do not think he will attempt the journey to Littleton island this season. He has at Discovery harbor a good house, plenty of fuel and provisions, with what game the country affords, to carry him to next spring. He could then start south as early as the state of the season permitted, and reach Cape Sabine without much comparative difficulty. This will, in my opinion, be the course adopted by Lieut. Greely.

Commander Wildes, in his letter to the Secretary of the Navy, said:

> I had no fears for Lieut. Greely, who, living in a region reported well stocked with game, has economized his provisions. Should he reach Littleton bay, besides the provisions on the west coast, the rocks and waters between that island and the mainland abound with walrus, the stench from their ordure fouling the air for a long distance. On the neighboring mainland reindeer are reported numerous. On the southeast of Carey island there is a *cache* of six months' provisions for twenty men, known to Lieut. Greely, who landed there. They would have to live Esquimau-fashion, but Dr. Kane and Lieut. Schwatka did that.

Immediately on the announcement of the failure of the expedition, the question of a third effort to relieve Lieut. Greely began to be discussed. It was decided that another spring would have to be awaited before any practical steps could be taken, but in the mean time it was determined to appoint a commission to take the matter into consideration and supervise all the preparations for the expedition of 1884. This commission was appointed by the President on the 17th of December, and consisted of Gen. William B. Hazen, Chief of the Signal-Service Bureau, and Capt. George W. Davis, of the Fourteenth Infantry, selected by the Secretary of War; and Capt. James A. Greer, of the United States Navy, who had commanded the Tigress on the search for the Polaris survivors, and Lieut.-Commander B. H. McCalla, designated by the Secretary of the Navy. This commission, at the beginning of 1884, began receiving suggestions and plans regarding the new expedition for the relief of Lieut. Greely and his party.

GREEN, John Richard, an English historian, born in Oxford in 1837; died at Mentone, France, March 9, 1883. He was a child of small and feeble frame, unable to partake in the usual sports of boys, and was shut up to the companionship of his books. His early education was received at Magdalen College School; and at the age of fifteen he had mastered all that could there be taught him. He then studied for three years under private tutors, and at eighteen obtained a scholarship in Jesus College, Oxford. The regular collegiate course presented few attractions to him, and he made no effort to attain any of its honors, devoting his time mainly to historical reading. While an undergraduate, he contributed to the "Oxford Chronicle" a series of papers upon "Oxford in the Eighteenth Century," which attracted the notice of the late Arthur Penrhyn Stanley, then Regius Professor of Ecclesiastical History at Oxford. These papers, which were subsequently reprinted, gave promise of the high and rare powers to be developed in those works which won for him a foremost place

among modern English historians. He took his degree in 1860, received holy orders, and through the influence of Stanley was made curate of St. Barnabas's, a poor and populous parish in an eastern district of London, dividing his time between parochial duties and historical studies in the British Museum.

In 1862 he was presented to the vicarage of St. Stephen's, Stepney, a post which he retained until 1869. His labors here were immense. He not only brought his parish into a high state of efficiency, but also carried his historical studies to the remotest sources, some of his favorite works being the huge folios of the Bollandist "Acta Sanctorum." Nothing, however, came amiss to him. He had acquired a facility for rapid reading, and possessed that poetic imagination which enabled him to grasp the vital characteristics of a past epoch, and the corresponding faculty of combining these features into a consistent whole. The results of his studies became more apparent in numerous historical essays which appeared in the weekly newspapers; and it grew clear to him that his true vocation was not a clerical one, for which indeed his feeble health unfitted him. He resigned his living, and the Archbishop of Canterbury appointed him librarian at Lambeth. He undertook no further clerical work, and, as his duties as librarian were little more than nominal, he was able to set himself seriously at work as an historian.

His first formal work in this capacity was the "Short History of the English People," the success of which was immediate. It made its way solely by its own merits, for the closely-printed, thick little volume had no external attractions for the general reader, to whom the very name of the author was new. But competent critics were not slow to make its merits known. Prof. Edward A. Freeman wrote of it: "The object of the book—that of combining the history of the people with the history of the kingdom—is most successfully carried out. It displays throughout a firm hold on the subject, and a singularly wide range of thought and sympathy. As a composition it is clear, forcible, and brilliant. It is the most truly original book of the kind that I ever saw." Another reviewer averred that this "Short History" contained "an amount of knowledge which would have sufficed to furnish forth a stately library-work in eight or ten volumes, together with a comprehensiveness of view, a novelty of method, and a power of bringing together all the scattered elements of history, with a freshness of style of which no historian since Macaulay had given an example." In Great Britain nearly 100,000 copies have been sold, and it is hardly less popular in the United States.

In 1870, after a severe illness, Mr. Green was ordered to a southern climate by his physician, and these "winter flittings," to which he owed the prolongation of his life for a dozen years, were annually repeated, giving occasion to many pleasant papers, which have been collected into a volume entitled "Stray Studies from England and Italy."

The history was published when the author had just reached the age of thirty-seven. He himself was sensible that he had only begun to execute the task which it lay in him to perform, should a few more years be added to his frail tenure of life. He at once set himself to the task of writing an ample work upon the same general lines, and with a like scope, but essentially modified in form and manner. The first volume of the "History of the English People" appeared in 1877, and the fourth volume, bringing the history down to the final overthrow of Napoleon at Waterloo, was concluded in 1880. Of the first volume the London "Saturday Review" said: "Three years ago Mr. Green achieved a brilliant success. He had the rare fortune to write a book that everybody read; scholars acknowledged his learning, his breadth of view, and his grasp of his subject; all owned his narrative power and charm of style. The 'History of the English People' no longer wears the modest guise of a school-book, but has become one of stately appearance. Though the materials of the earlier book have been worked into it, and though we recognize many of the most brilliant passages as old friends, still the arrangement is so altered, and the amount of fresh matter is so large, that it is substantially a new work, which, while retaining the life and sparkle of its predecessor, is better proportioned, calmer in tone, and altogether a more ripe and complete piece of work."

In 1877 Mr. Green married the daughter of Archdeacon Stopford, with whom he wrote a "Short Geography of the British Isles," and not long afterward projected a very successful series of "History and Literature Primers," edited by himself, but written by several eminent English scholars. In the mean while his high merits began to receive recognition. He was elected a member of the Athenæum Club; Jesus College, where he had graduated, made him an honorary fellow; the University of Edinburgh conferred upon him the degree of LL. D.; and he was chosen an examiner in the School of Modern History at Oxford. He found time to compile a selection of "Readings from English History," so arranged as to illustrate the great periods from the Saxon conquest to the battle of Crecy, from Crecy to the time of Oliver Cromwell, and from Cromwell to the Crimean War, connected by appropriate threads of remark and explanation necessary to illustrate the series of events. The three parts have been brought together in this country in one moderate volume.

For several years, Mr. Green had usually passed the winters at Capri, in Italy; but in 1880 he went to Egypt. The change was unfortunate: the climate was not favorable; he caught a severe cold on his return voyage, and was very ill during the summer of 1881. In

the autumn he betook himself to Mentone, where he seemed to have taken a new lease of life. He wrought with unflagging industry upon "The Making of England," a work which in the judgment of scholars is his masterpiece. The period of the Saxon Heptarchy has been dismissed by other historians as a time marked by events no more worthy of record than the obscure "fightings of kites and crows"; but Mr. Green's studies had wrought in him a firm conviction that in those dim ages were planted the seeds of English character and of English history; that the fierce struggles of the Heptarchy were in truth "the birth-throes of national life." His theory is, that the Celtic races whom Cæsar found in Britain were exterminated by the successive tides of the Teutonic invaders. A contrary theory is, that they were not exterminated, or even driven off, but were amalgamated with and absorbed into the newcomers. In either case the fact remains unquestionable that the Celts, as a race, vanished from the southern portion of the island, and the civil institutions grew up to be not Celtic, but Anglican or English. A people was born then and there who have not only held the land of their development, but have spread themselves as a distinctive race over new worlds. In that ante-Norman period was the "making" not merely of England but of North America and of the colonies, in time to become nations, of Australia and New Zealand. In the development of this idea the author has put forth the highest qualities of the historian. In nothing is the special value of the work more marked than in the descriptions of the physical features of the England of the Heptarchy. The first volume of the "Making of England" was published barely a year before the author's death. Its high value was at once recognized, and it was immediately republished in New York; his work being as highly appreciated in America as in his own country. By incessant work, he just succeeded in finishing, before his death, a volume entitled "The Conquest of England," which was published posthumously, and forms, properly, a sequel to his "Making of England."

Mr. Green was no mere recluse student, but took an eager interest in all the great social, political, and literary questions of the day. There seemed to be no limit to his versatility, and his conversation was as brilliant as his writing. The pleasant house in Kensington square, which was his London home during the summer months of several years, was the resort of men who are eminent in public affairs, and in art and letters.

GUATEMALA, a republic of Central America. Area, 121,140 square kilometres; population, 1,252,497. The President is Rufino Barrios, elected May 9, 1873, since which time his term of office has been prolonged by decree of the Constitutional Assembly, Oct. 23, 1876, and he was re-elected March 15, 1880, for six years. The Cabinet is composed of the following ministers: Foreign Affairs, Dr. F. Cruz; Interior, Dr. C. Diaz Mérida; War, Gen. J. M. Barrundia; Public Instruction, Señor D. Sanchez; Agriculture and Public Credit, in charge of the sub-Secretary of State, Dr. R. A. Salazar; Public Works, Señor M. Herrera.

THE PLAZA, QUEZALTENANGO.

The Envoy Extraordinary and Minister Plenipotentiary to the United States is Señor L. A. Bátres, and the Consul-General at New York is Señor J. Baiz.

The United States Minister Plenipotentiary to the five Central American Republics (resident in Guatemala) is Hon. H. C. Hall, and the United States Consul at Guatemala City, Dr. F. H. Titus.

Finances.—The amounts and the various branches of the national revenue and expenditures for the fiscal year 1882 were as shown in the table below:

REVENUE.

Balance from former years	$165,830
Real-estate tax	108,836
Money collected for release from military service	13,925
Turnpike-tolls	34,831
Sundries	4,183
Import duties	1,698,470
Export duties	66,655
Tonnage dues	8,960
Stamp-tax	114,222
Slaughter-house tax	99,965
Milling-tax	47,196
Salt-tax	27,455
Tax on inheritances and donations	11,514
Patent-tax	53,580
Tax on spirits, tobacco, saltpeter, and powder	1,636,280
Special state revenues	360,905
Sundry collections	135,457
Loans and deposits	2,080,033
Total	$6,607,679

EXPENDITURE.

Department of Finance	$208,872
" War	1,164,521
" Public Works	167,849
" Interior and Justice	728,747
" Public Instruction	252,892
" College Education	25,419
" Foreign Affairs	80,850
Tax collection	264,654
Pensions and state aid	45,054
Municipalities	15,705
Post-Office and telegraphs	144,014
Mint	20,540
Charitable institutions	186,794
Police force	154,161
Extraordinary expenses	203,254
Reimbursements	828,044
Sinking fund	2,554,077
Various creditors	81,920
Interest and premiums	35,883
Total	$6,607,750

PUBLIC INDEBTEDNESS JAN. 1, 1883.

National debt (home branch)	$3,021,050
National debt (foreign branch)*	3,466,019
Total	$6,487,069

Railroads.—The first line of railway that went into operation in Guatemala was the one from San José to Escuintla, 22 kilometres, opened June 18, 1880. Other lines are being built, from Escuintla to Guatemala, and from Champerico to Retalhulen.

Champerico a few years ago was almost an unknown port. Now it has a fine iron mole, and every Pacific Mail coasting steamship calls there to receive or discharge the many thousand tons of cargo which constitute the life of the Costa Grande, Costa Cuca, and Retalhulen districts. A few years have entirely changed the aspect of affairs, and more capital being invested every day in agriculture, cheap and easy transport has become a necessity. To supply this a company was formed in San Francisco, called the "Champerico and Northern Transportation Company of Guatemala," and its first effort is to establish rail communication between Champerico and Retalhulen, *via* Caballo Blanco in the vicinity of the Costa Cuca, the most productive coffee district in Guatemala.

Telegraphs.—There was a length of lines in operation in 1882 of 3,114 kilometres, served by 63 offices, the number of messages sent during that year being 219,744. The receipts were $56,989, and the expenses $68,924.

Postal Service.—In 1882 there passed through the mails forwarded 280,123 private letters, 61,724 Government dispatches, 50,807 letters sent and delivered in cities, 8,406 registered, 291,893 newspapers, 644 sample packages, 250 other packages—total items of mail matter, 693,847; received, 706,196—total, 1,400,043, against 1,039,652 in 1881. Receipts, $56,989; expenses, $68,924.

Commerce.—There entered and left Guatemalan ports, in 1882, 168 steamers and 62 sailing-vessels—together, 230.

IMPORTS.

1877	$3,134,000	1880	$3,647,000
1878	3,238,000	1881	3,665,000
1879	3,327,000	1882	2,652,000

EXPORTS.

1877	$3,778,000	1880	$4,425,000
1878	3,919,000	1881	4,084,000
1879	4,606,000	1882	3,719,000

	1882.	
	Import.	Export.
United States	$655,000	$1,776,000
Germany	425,000	800,000
Other countries	392,000	227,000

The leading export articles in 1882 were: coffee, $3,132,716 worth; skins, $116,663; woolens, $22,935; oil-cloth, $224,890; cochineal, $11,869; specie and bullion (silver), $44,755.

Of some of the causes which operate against the American trade in Guatemala, the principal is a strong prejudice against Americans and their goods. Nearly all of the importers are foreigners, mostly Germans; and of the professed American houses only one or two of any importance are conducted by native Americans; the rest, chiefly by naturalized Germans. The majority of the importing establishments are branches of European houses, or have European connections in some way.

THE CATHEDRAL, GUATEMALA.

Cinchona-Bark.—The Republic of Guatemala has arranged with a well-known Ceylon planter to select seeds for 5,000,000 cinchona-trees. Central America has been explored for a thousand miles to determine the best sites for planting these; and the rapid increase in the number of uses to which cinchona-bark is put, not only for the manufacture of quinine and as an ingredient in the substitute for hops, but also for commercial purposes, has led Pres-

* Of which Federal debt, $672,714; other debts, $2,793,305.

the autumn he betook himself to Mentone, where he seemed to have taken a new lease of life. He wrought with unflagging industry upon "The Making of England," a work wh[illegible] in the judgment of scholars is his mast[illegible] The period of the Saxon Heptarch[illegible] dismissed by other historians as a [illegible] by events no more worthy of re[illegible] obscure "fightings of kites and crows"; but Mr. Green's stu[illegible] ies had wrought in him a f[illegible] conviction that in those ages were planted the s[illegible] English character and [illegible] lish history; that [illegible] struggles of the [illegible] were in truth [illegible] throes of natio[illegible] theory is, that [illegible] whom Cæsar [illegible] were exter[illegible] cessive ti[illegible] invaders [illegible] is, that [illegible] minat[illegible] but [illegible] and [illegible] co[illegible] re[illegible]

GU[illegible] [illegible] but the trees have been A[illegible] [illegible]000,000. The cinchona tree re[illegible] [illegible]pical climate and a plentiful rain[illegible]

[illegible] See WEST INDIES.

H

[illegible] the [illegible] of [illegible] square [illegible] elect[illegible] The [illegible] following-named [illegible] Finance, and Com[illegible] Public Wor[illegible] Michel Pierre; [illegible] Public Instruction and [illegible] Resident and [illegible] Minister [illegible] is Mr. J. M. [illegible] Consul-General, Dr. [illegible] Envoy Extraor[illegible] Plenipotentiary to the [illegible] Preston; and the Hay[illegible] York, Mr. E. D. Bassett. [illegible] into five administrative [illegible] of the west having Port[illegible] that of the south, [illegible] capital; that of the [illegible] northern, Cape Haytien; the [illegible] Port-de-Paix; and the depart[illegible] of which Gonaïves is the [illegible] national capital, Port-au-Prince, [illegible] population of 35,000. The popula[illegible] country is estimated at 550,000, 90 [illegible] of whom are negroes, and the others [illegible] This gives 23 individuals to the [illegible] kilometre, against 50 in Jamaica, 75 in [illegible] Rico, 76 in Guadeloupe, 163 in Marti[illegible] and 12 in Cuba. There are few perma[illegible] white inhabitants of the republic; these [illegible] are merchants and French teachers. Al[illegible] the official language of the country is [illegible]—and it is correctly spoken, written, [illegible] printed, even having a creditable native [illegible] among the educated—the mass of [illegible] people indulge in a sort of *patois*, a cor[illegible] French.

In 1844 Hayti separated from Santo Domingo, the eastern, Spanish-speaking portion of the island, which has since then maintained its independence, with the exception of a short interval during the American civil war, when it formed part of the dominions of Spain. In 1846, under the new Constitution, which went into existence on November 14th of that year, a sort of ostracism was decreed against the whites, by virtue of Article VII of that document, which stipulates that "no white man, to whatever nation he may belong, is allowed to reside in Haytian territory as master or property-holder, and he is forbidden from ever acquiring real estate or Haytian citizenship."

Finance.—The budget for 1882–'83 made the following estimate of expenditures:

		In dollars of five francs.
Department of	Finance and Commerce	$494,625
"	Foreign Affairs	352,080
"	War and Navy	1,221,197
"	the Interior and Police	1,159,814
"	Justice	323,622
"	Public Instruction	744,350
"	Public Worship	62,375
"	Agriculture	309,800
Sundry outlays		1,333,947
Total		$6,006,810

The public debt amounted in May, 1882, to $12,507,884, of which the remainder due France under the arrangement of 1825 constituted $307,884; the Dominique loan, $7,200,000; and the internal debt, $5,000,000.

During the late insurrection the Haytian National Assembly authorized the Government to borrow $1,000,000 from the National Bank of Hayti and issue paper money to an equal amount, to be a legal tender for three years; this loan to be refunded by means of additional taxes to be levied under provisions of a special law to that effect passed on Aug. 28, 1883.

Since 1873 American silver has constituted the principal part of the circulating medium of Hayti; but between 1880 and 1882 a large amount of Mexican silver dollars has been imported, and this money has circulated freely. Within the same period an amount of Haytian coins, bearing the effigies of Boyer and Petion, variously estimated at from $50,000 to $100,000, has been remonetized and again been put in circulation. If to these several elements of silver money be added a small amount of American, English, French, and Spanish gold, the aggregate of the whole, both kinds of specie, amounting to about $7,000,000, we will have, substantially, the sum total and character of the currency which has been employed in Hayti for the period indicated.

It was in this monetary condition of the country, on the election of Gen. Salomon to the presidency, that the proposition to establish a national bank, with foreign capital and by grant of a special concession, was considered and determined by the Haytian National Assembly.

The upshot of the matter is presented in a contract with the Parisian General Industrial and Commercial Credit Company for the establishment of such institution for fifty years. The bank founded under the auspices of this society is a joint-stock company, with its headquarters at Paris. The capital consists of 10,000,000 francs, or $2,000,000. It has the exclusive privilege of emitting bills which shall pass current throughout the country, provided that the amount of such bills shall not exceed

'le its metallic reserve, and that they be ·med on presentation at the bank at Port- uce or at its branches in Hayti.

\rmy.—The active army, on a peace ·onsists of one battalion of artillery, ·ıg; one regiment of foot, 200 men; ·ıtalion of "chasseurs à pied," 150; one ·ıdron of cavalry, 100 horse—these troops ·orming the guard; furthermore, those constituting the line, belonging to which there are four battalions of artillery, 1,000 strong; six regiments of foot, 3,200; and 46 companies of "gendarmes"; this places the numerical force of the army at 6,828 men, kept up in part by conscription for a seven years' term of service, and partly by volunteers serving four years.

The Haytian navy consists of one steam man-of-war.

The Insurrection.—With the fall of Miragoane, on Jan. 10, 1884, one of the most stubborn of the insurrections that from time to time distress the Republic of Hayti came to an end. The three towns held by the insurgents were Jérémie, Jacmel, and Miragoane, on the coasts of the long peninsula in the southern part of the island. Jérémie was the first to surrender, Dec. 24, 1883, after a bloody combat; Jacmel followed its example on December 29th; and with the yielding of the third port, a revolt which has cost hundreds of lives and millions of money, and which at one time threatened to develop into a race-massacre, was crushed on the spot of its origin. Apart from the commercial interests of the United States in this event, the rebellion derived importance for us from the fact that it was set on foot by an armed expedition starting from this country as a base. Boyer Bazelais and his followers, who landed at Miragoane on the night of March 29, 1883, there surprising the garrison and capturing the fort, had been conveyed thither by an American fruiterer, the steamer Tropic. This vessel had left Philadelphia with a secret cargo of arms, uniforms, and munitions, and had been boarded at the island of Inagua by Bazelais and his followers, who immediately put on the uniforms and drilled with the guns. The complicity of the Tropic's officers in this violation of the neutrality laws was formally established by a United States court, which sentenced them to fine and imprisonment.

Not long after the Tropic's expedition, the Mary N. Hogan was seized by the United States Government, on suspicion that she was about to violate the neutrality laws in the interest of the Haytian insurgents; and during the latter part of November she was condemned. A little later the schooner E. G. Erwin was detained on the same ground. Subsequently the Azelda and Laura, sailing under the American flag, was promptly detained, at the request of the Haytian consul-general.

While the three ports named were occupied by the insurgents, and the Haytian Government forces by land and sea operating against them, President Salomon issued a decree passed by the National Assembly of Hayti, amending Article XXXI of the Constitution, whereby trials by jury during the rebellion were suspended for the crimes of forgery, counterfeiting, incendiarism, and such as are of a political nature; a law repealing the import duty on Mexican coin; a law opening to foreign commerce the ports of L'Anse d'Hainault and Dame-Marie, on the south end of the island; a law closing to foreign commerce the ports of Jacmel, Jérémie, and Miragoane, and a proclamation announcing the crime committed by the insurgents at Jacmel in murdering in cold blood fourteen political prisoners, civil and military. After being defeated by the Government troops in an engagement on August 3d, the insurgents retreated to the city, and before the Government troops arrived, assassinated the most influential Government officers whom they had in their power, because on July 23d these officers had refused to betray the Government of the republic and join the rebellion. While President Salomon was thenceforward straining every nerve to quell the insurrection through a more systematic and powerful display of military and naval resources, a most deplorable incident occurred at the capital, Port-au-Prince, on September 22d, in the shape of a rising against his authority, accompanied by terrible excesses. The cause of it seems to have been that the local authorities endeavored to arrest two young men known to be hostile to the Government. The insurgents began by attacking at 11 A. M. the residence of the general commanding the troops of the district, and shot him on the spot. The garrison then retreated to the presidential palace, outside of the city gates; and the insurgents, thus finding themselves at liberty to do as they pleased, and wreak their vengeful feelings on other inhabitants whom they considered their enemies, fired on all such, causing a general stampede, until at 6 P. M., when, after three hours' fighting, President Salomon succeeded in dispersing the assassins, who sought refuge in the consulates. At this juncture the President had lost control of his own troops, who, in common with the rabble, set fire to the town and plundered in all directions during the confusion. The British war-steamer Fantom landed a crew to protect the consulate, which the mob threatened to burn down. These dreadful scenes were prolonged till the afternoon of September 28d, when foreign ministers and consuls united in a protest, threatening the city and palace with bombardment by the men-of-war in the harbor, if order were not restored immediately; and the city became tranquil once more. The losses sustained by foreign merchants, notably French, by fire, were considerable, and in November the Haytian Government was informed that an indemnity would be exacted.

Toward the close of October President Salomon issued another proclamation, in which

he announced that the leader of the rebellion, Boyer Bazelais, had poisoned himself at Miragoane on the 27th of that month, after being wounded in an engagement at Gaoy on October 22d. During the rebellion there was a battle between the steamers Dessalines and La Patrie, both vessels being considerably damaged, the Government craft, the Dessalines, losing its commander, and La Patrie seven men.

Natural Resources.—There is no tropical country on the earth capable of producing a greater variety of agricultural and mineral products than Hayti. The sugar-cane thrives nowhere better; it was introduced into the island by Columbus on his second voyage, in 1493, from Gomera, one of the Canary islands, and as early as 1506 it was cultivated to some extent, as it was found that it succeeded better than in any of the other islands; thence it was introduced by French Jesuits with some negroes into Louisiana in 1751. In 1791 Hayti exported to France 70,000 tons of sugar and 30,000 tons of coffee. While in all other tropical countries where slavery has been abolished the cultivation of staple products has gradually recovered from the effects of disorganized labor, this has been the case in Hayti only so far as coffee is concerned, of which the country still produces 35,000 tons annually on an average, or about as much as a century since. But its sugar industry has become practically extinct. The quality of the coffee, although pure-flavored, ranks lowest in the world's markets, because it is slothfully cultivated, gathered, and prepared, most of it mixed with black beans and fragments of stones; yet it is the staple product of the country, and a short coffee-crop involves poverty for a season.

The other agricultural products are cocoa (also lowest in quality) and a little cotton. Wax and honey are exported, and logwood, mahogany, and cedar of good quality are produced.

The country abounds in mineral deposits, but none is worked; thus, there are iron, tin, copper, manganese, cinnabar, and coal-seams at Camp Perrin and Aux Cayes, and gold is met with in a great many localities.

Native writers on Haytian economical and agrarian subjects complain that the system of rentals is bad on the plains, where the proprietor of the soil shares in the profits accruing from the cultivation of it with the small farmer who cultivates under a lease from him. In the mountain districts this is different, for there small plantations, the property of those cultivating them, abound, and the products are better prepared for market. These writers say it is a peculiar trait of the negro that, however small it may be, he wants to work on a plantation of his own, and only under such conditions will he bestow care on what he raises.

Commerce.—In the fiscal year 1881–'82 the amount of import duties collected at the eleven ports then opened to foreign trade was $1,859,044, and of export duties, $2,102,805. The aggregate value of merchandise imported at Port-au-Prince during the same year was $1,906,196, and the chief articles exported from there were coffee, 51,702,927 pounds; logwood, 264,012,050 pounds; cocoa, 3,382,199 pounds; and cotton, 1,790,832 pounds.

AMERICAN TRADE WITH HAYTI.

FISCAL YEAR.	Import.	Domestic export.
1879	$2,790,476	$3,148,757
1880	4,389,186	3,591,150
1881	4,717,269	4,372,321
1882	3,537,987	3,195,931
1883	2,971,515	3,162,738
Total	$18,356,383	$17,470,897

The following table shows the increase of coffee importation from Hayti into the United States:

Fiscal year.	Pounds.	Fiscal year.	Pounds.
1869	3,114,151	1876	11,337,503
1870	2,437,355	1877	12,269,344
1871	3,258,355	1878	12,813,113
1872	3,874,781	1879	16,660,080
1873	6,137,560	1880	22,659,285
1874	4,752,830	1881	31,903,074
1875	9,545,410	1882	22,527,950
Total	33,194,942	Total	130,675,304

The maritime movements of 1881 were as follow:

	Vessels entered.	Tonnage.	Steamers.	Tonnage.
In all Haytian ports	792	695,194	385	584,977
At Port-au-Prince alone	322	304,681	215	279,012

	Vessels sailed.	Tonnage.	Steamers.	Tonnage.
From all Haytian ports	768	686,821	382	562,275
From Port-au-Prince alone	316	304,365	213	278,312

HICKS PASHA, Col. William, an English officer, commanding an Egyptian expedition against the Mahdi in the Soudan, who perished with his entire army at the battle of Kashgate on Nov. 4, 1883. He entered the Indian army in 1849, and served through the Sepoy rebellion. In the Rohilcund campaign he was present at the action of Kukralee, at the taking of Bareilly, and in the battles of Bunnee, Mahomdee, and Shahjehanpore. He took part in the campaign for the subjugation of Oude and was with Lord Clyde at the capture of Sunkerpore, the defeat of Beni Madho, the capture of Fort Buxar, and through the operations across the Gogra. He was present in the subsequent actions with Nana Sahib. For bravery at the battle of Sitka Ghaut and in the capture of the enemy's guns, he received a medal. He became a captain in 1861. In the Abyssinian campaign of 1867–'68 he served as a brigade-major, and distinguished himself at the capture of Magdala, receiving a medal and the brevet rank of major. He was promoted to major in 1868, to lieutenant-colonel in 1875, and in 1880 became an honorary colonel, and was appointed to the reserve. He went to Egypt with the British military expedition, and, after serving

as chief of staff in the reorganized Egyptian army, was appointed by the Khedive commander-in-chief of the Soudan army. In 1882 the Mahdi had destroyed, at the battle of Gebel Geon, the main Egyptian force in the Soudan, led by Yussuf Pasha. In the winter he had captured by siege El-Obeid, the capital of Kordofan. Through the co-operation of the slave-traders and slave-owners, who now made

WILLIAM HICKS PASHA.

common cause with him, he could gather at any point an enormous army of black slaves, such as constituted the formidable military power of Sebehr a few years before, and were described by Gordon Pasha as "smart, dapper-looking fellows, like antelopes, fierce, unsparing, the terror of Central Africa." The Mahdi had captured many breech-loading rifles, and had a few disciplined troops who had joined him after surrendering at El-Obeid, but in the main his warriors were armed only with javelins and swords. The same slaves formed the flower of Arabi's army. Col. Hicks, on whom the Khedive now bestowed the title of pasha, enlisted as many of them as he could in his expeditionary force, but it was made up mostly of forced conscripts, some of them brought in chains to the transport-boats. He began his preparations in the spring, arrived at Khartoum in July, and marched against the Mahdi in September at the head of a force of between 10,000 and 11,000. Not far from El-Obeid he was entrapped in a rocky defile, where his Nordenfeldt and mountain guns were useless, and where there was no water for his soldiers. The battle lasted three days, and when the ammunition was exhausted Col. Hicks endeavored to break through the host of savages by a bayonet-charge. He was the last of the staff to fall, and used his revolver and sword with deadly effect until he was pierced by a lance.

HONDURAS, a republic of Central America. Area, 120,480 square kilometres; population, 350,000. Congress met on Oct. 15, 1883, and promptly accepted the resignation of President M. A. Soto, ordering the election of a successor. There were four candidates: Gen. Bogran, Don Monico Córdova, Don Celio Arias, and Gen. Delgado. Gen. Luis Bogran was elected. He was one of the ministerial triumvirate governing the country during the absence of President Soto after May, 1883, and he assumed the ministry of Public Works upon the death of Gen. Gutierrez, Sept. 13, 1883. The Cabinet was composed as follows: Minister of the Interior, of Justice, and Public Works, Gen. Bogran; Foreign Affairs, Public Instruction, and War, Señor Alvarado; Finance, Señor A. Zelaya.

The United States Consul at Amapala is Mr. C. Morris.

Finance.—During the fiscal year 1879–'80 the revenue amounted to $969,854, and the expenditure to $854,352; the budget estimate for 1880–'83 valued the annual income at $861,970, and the outlay at $759,930.

National Debt.—The consolidated home indebtedness is represented by bonds issued to the extent of $1,000,000. The floating debt amounts to $578,609.

Communications.—There is a line of railway in operation between Puerto Cortez and San Pedro, 37 miles. The length of telegraph lines in operation is 1,046 kilometres. In 1879 there were 19 post-offices, which forwarded 96,973 letters, 41,411 of these being government dispatches, 4,900 newspapers, and 47 sample packages. Income, $3,026; expenses, $18,073.

Commerce.—The President estimates that the average annual trade movement comprises exports worth $1,305,000; viz.: gold and silver bullion, $600,000; indigo, $200,000; cattle, $150,000; cabinet and dye-woods, $180,000; and hides, $100,000. The trade of the republic is carried on, on the Pacific shore, through the port of Amapala, and on the Atlantic shore through Truxillo and Omoa.

Pine-Forests.—A few miles from Santa Bárbara, in a region whose altitude is about 2,500 feet above the sea, the grand mahogany and huge cedar trees begin to diminish in size, and vast forests of yellow and red pitch-pine cover the foot of hills and mountain-tops. It may be safely asserted that half of the entire area of the republic is composed of these pineries. The fact that the West India islands and the republics of South America which border on the Atlantic consume millions of dollars' worth of pitch-pine lumber, shingles, etc., annually,

coming from the mills on the Atlantic seaboard and the Southern United States, has long since attracted the attention of enterprising merchants of Balize, British Honduras, who imagined that the pine-forests of Honduras might supply this constantly growing demand. The rivers Chamelicon and Ulua, with their numerous branches, drain the very heart of this prolific pine-region. Some of the most valuable of these forests border on the rivers, or are but a few miles from their banks, while the two rivers, after draining several departments, which cover one third of the area of the republic, flow into the sea a short distance from Puerto Cortez. The intention of the British capitalists was to utilize the advantages offered by the water-courses that seam the mountain-sides, and to establish saw-mills, put small steamboats on the rivers to tow barges filled with dressed lumber to Puerto Cortez, and there load ships for dispatch to the West Indian and South American ports. But the project was made so public that New Orleans energy and enterprise were attracted to the matter, and, while the English were forming their plans, quietly obtained franchises from the republic that virtually shut British enterprise out of the Department of Santa Bárbara. These franchises consist of the exclusive right to navigate the rivers Chamelicon, Blanco, Ulua, and Santa Bárbara, for fifteen years, together with important wood-cutting privileges, while the extensive navigation of the beautiful and spacious Lake Tojia has also been granted to a New Orleans company for forty years.

Mines.—The mineral resources of Honduras are considered by the Spaniards its chief wealth, and for two hundred years the mining of gold and silver has been its most active industry. During the past two years New York capital has been attracted to these minerals, and the veins are now being developed by modern machinery, where the systems of mining and reducing of ores have remained the same for a hundred and fifty years. In the district of Yuscaran, two New York companies are at work. The Yuscaran Mining Company has reopened the historical Quemarones by sinking and drifting below the old workings of the Spaniards, and proved that the old tales of fabulous wealth in these mines are true. A reduction company is erecting works here, with a capacity to treat 100 tons of ore a day, and the quiet Pueblo de Yuscaran is taking on the dress of a modern mining-camp. There are more than 100 mines in this district, all of which have been worked to some extent by the primitive methods. The expense of reducing ore by the "barrel system" is $26 a ton, and ore running less than $50 a ton has been left on the dumps as worthless. In the department of San Pedro, a New York company and a Chicago company are each erecting mills; and a French company is in operation. This district contains gold-mines exclusively; that of Yuscaran, silver and gold. Opal-mines are also being worked in Honduras, and some of the finest opals in the Paris market are brought from there.

HOWE, Timothy Otis. An American statesman and jurist, born in Livermore, Maine, Feb. 24, 1816; died in Kenosha, Wis., March 25, 1883. He received a common-school education, and was occupied, out of school-hours, in farm-work. He was admitted to the bar in 1839, and began practice in Readfield.

Mr. Howe was an ardent Whig, and an admirer of Henry Clay. In 1845 he was elected to the Legislature of Maine, where he became active in the debates and the work of the House, and gained much reputation. His health having become impaired, in 1845 he removed to Wisconsin Territory, and found the change of great service. He opened an office in Green Bay, then a small village, separated from the rest of the Territory by belts of forest forty miles in extent, and this place continued to be his home for life. When the Territory became a State, in 1848, he was an unsuccessful candidate for Congress. Two years later he was chosen to be one of the circuit judges. These judges were also judges of the Supreme Court, and during part of his term he served as Chief-Justice of the State.

In 1854, after the passage of the Nebraska Bill, the Whigs, and others more or less in accord with them, met in mass convention, and organized the Republican party of Wisconsin. Judge Howe, being on the bench, took no very active part in politics, but was understood to be in hearty sympathy with the movement. He resigned his office of judge in 1855, and resumed the practice of law. He was much occupied in debates and discussions of the day, and proved himself to be an efficient speaker on the Republican side. He took part in a remarkable trial, in 1856, to ascertain who was the lawful Governor of the State—whether William A. Boynton, who received the certificate, signed by the Secretary of State, and took possession of the office, or Coles Bashford, who claimed that a majority of the votes were cast for him. The matter was submitted to judicial investigation and decision; Mr. Howe, as counsel, was very diligent and energetic in the conduct of the trial, and the result was that Bashford gained his case and entered upon his duties without further dispute. Judge Howe's reputation was largely increased by his management of this case, and his success in gaining it. In 1861 Mr. Howe was elected United States Senator, and he was re-elected twice. During his long career he served on the most important committees of the Senate—as Finance, Commerce, Pensions, Claims, etc. He was among the earliest advocates of universal emancipation, and also urged the right to establish territorial governments over the seceded States. He took issue with Andrew Johnson's policy, and made able speeches, in 1865–'66, against that policy. His course in this respect was unanimously approved by the Republicans

of his State. He also voted in favor of Johnson's impeachment. He supported the Silver Bill. He was in effect a radical Republican in his political views, and uniformly voted to extend the suffrage to negroes. Although, perhaps, not strictly to be called an orator, he was always impressive and forcible, and was particularly ready and fluent. President Grant offered him a judgeship in the Supreme Court, but Senator Howe declined it. He denounced President Hayes on the subject of civil-service reform as applied to the Southern States, and he spoke against the Anti-Chinese bill.

When the third-term question came up, Mr. Howe had left the Senate; but he favored the scheme, as regarding Gen. Grant, and in 1880 spoke strongly in its support. In 1881 he was appointed one of the delegates to the International Monetary Conference in Paris. He returned home in July, before the close of the conference, in consequence of his wife's illness. When Cabinet changes took place, after President Garfield's murder, Mr. Howe was appointed, in December, 1881, Postmaster-General. His service in this office was but little more than a year, but much was done during that time in post-office affairs. Postal notes were issued; reduction of postage was also effected, though the head of that department did not favor the measure. Other measures, such as postal savings-banks and postal telegraphs, he urged with great force.

It was while he was on a visit to the State of his adoption that his life was suddenly brought to its close. He left Washington in excellent spirits, and with assured health and strength; but having been exposed to a driving winter storm, and having taken a severe cold, he was violently attacked with pneumonia, and died in full consciousness that the end had come. Judge Howe's wife died in August, 1881. He left one son and one daughter.

HUMPHREYS, Andrew Atkinson, an American soldier, born in Philadelphia, Nov. 2, 1810; died in Washington, D. C., Dec. 27, 1883. He was graduated from the Military Academy at West Point in 1831. His first service was with the artillery. After the Florida war he resigned from the army, and was employed by the Government as a civil engineer, assisting Major Bache on plans of the Brandywine Shoal light-house, and the Crow Shoal breakwater in Delaware Bay. On July 7, 1838, he re-entered the service as first lieutenant of Topographical Engineers. From that date until May 31, 1848, when he was promoted to be captain in the same corps, he assisted in many important engineering works, and after his promotion was placed in charge of several topographical and hydrographic surveys. He greatly distinguished himself, with Major Abbot, by the survey of the Mississippi, which gave those two officers a wide reputation as engineers. Humphreys was promoted to the rank of major in August, 1861, and was employed on the staff of Gen. McClellan as Chief of Topographical Engineers of the Army of the Potomac. He was advanced to the rank of colonel of volunteers, March 5, 1862, and participated in all the actions of the Army of the Potomac, up to and including the battle of Malvern hill, in which he commanded a division, having previously been appointed a brigadier-general of volunteers, April 28, 1862. He continued in the command of troops during the Maryland campaign which culminated at Antietam, and in the Rappahannock campaign, including Fredericksburg and Chancellorsville, receiving the brevet of colonel in the regular army for his services in the former battle. He was made a lieutenant-colonel, Corps of Engineers, March 3, 1863, and served as chief of Gen. Meade's staff from that date until July 8th, when he received a commission as major-general of volunteers. He was with Meade at Gettysburg, and remained with him until the surrender at Appomattox. On March 13, 1865, he was brevetted brigadier-general in the regular army for gallant services at the battle of Gettysburg, and brevetted major-general on the same day for gallantry and meritorious conduct at the battle of Sailor's Creek, Va. He was mustered out of the volunteer service August 31, 1866, promoted to the rank of brigadier-general in the regular army, and assigned to duty as chief of engineers, which office he filled until June 30, 1879, when he was retired at his own request.

In a general order announcing his death, Secretary Lincoln says: "In the discharge of his military duties Gen. Humphreys displayed great zeal, intelligence, and conspicuous gallantry. Those who served under him had the highest confidence in his capacity to command, and the greatest admiration of his soldierly qualities." In 1882 he published "The Virginia Campaigns of 1864 and 1865," followed by another work, "From Gettysburg to the Rapidan." His personal observations, the facilities which his residence in Washington afforded him of examining the archives of the War Department, and the simplicity and strength of his style of writing, have produced works that will prove of great value to the future historian of the war. His latest literary labors were several letters concerning his grandfather, Joshua Humphreys, who designed the six frigates constructed under a law approved by Washington, as President, in 1794. This valuable material was sent to Gen. J. G. Wilson, as a contribution to his "History of the Frigate Constitution," better known as "Old Ironsides."

Gen. Humphreys was a member of the American Philosophical Society of Philadelphia; the American Academy of Arts and Sciences, of Boston; the National Academy of Sciences, of which latter he was a corporator; and he was also an honorary member of the Imperial Royal Geographical Institute of Vienna, and the Royal Institute of Science and Art of Lombardy.

HUNGARY. See AUSTRIA-HUNGARY.

I

ICHTHYOL. This new remedy for skin-diseases is an oily product obtained from a peculiar bituminous mineral found in the region of Seefeld, in the Tyrol. The mineral occurs in beds of varying thickness lying in the midst of fossiliferous rock, which bears numerous fish-prints together with petrified fishes. It has been surmised that the bitumen owed its origin to the animal residue of fishes and other marine animals left there in prehistoric times, when the region was still submerged by the sea. Hence the name "ichthyol." To obtain the oil, the bituminous rock is first subjected to dry distillation in iron retorts; the fluid product which results soon separates spontaneously into a thick, tarry substance, and a fluid, dark-colored, strong-smelling oil. The latter is subjected to the action of concentrated sulphuric acid and other chemical processes, by means of which it is clarified and refined, when a neutral or slightly alkaline product results, having a peculiar odor. This product—ichthyol—is regarded as an extract from the original oil. Its chief ingredient is said to be a sulphur acid. Sulphur forms from two and a half to ten per cent. of its composition (according to the method of preparation). In appearance it is of a somewhat tarry character, but resembles none of the ordinary tars either in odor or chemical composition. Its consistency is about the same as that of vaseline. It forms an emulsion with water, and is miscible in any proportions with oils or vaseline. It is partly soluble in alcohol and partly in ether; wholly so in a mixture of both.

The efficacy of ichthyol as an application in skin-diseases is probably due to the sulphur it contains. The drug is probably, in part, an artificial production, and the chemical treatment by which it is produced increases the proportion of sulphur from two or three to ten per cent. It therefore strongly resembles, in its action and nature, a ten-per-cent. sulphur ointment, differing from the latter in that the sulphur is in a very intimate chemical union with the other ingredients.

IDAHO. Territorial Government.—The following were the Territorial officers during the year: Governor, John B. Neil, succeeded by John N. Irwin; Secretary, Theodore F. Singiser, succeeded by Edward L. Curtis; Treasurer, John Huntoon; Comptroller and Superintendent of Public Instruction, James L. Onderdonk. Judiciary, Supreme Court: Chief-Justice, John T. Morgan; Associate Justices, Henry E. Prickett and Norman Buck.

Legislative Session.—The Legislature, which convened on the 11th of December, 1882, adjourned on the 8th of February, 1883. An act was passed to establish a public-school system, and to provide for the maintenance and supervision of public schools. This act makes the Comptroller *ex officio* superintendent, provides for the election of a county superintendent in each county having more than five school districts, for the election of trustees in each district, for the examination of and granting certificates to teachers, and for teachers' institutes in the larger counties. Another act provides for the registration of the names of electors and for the prevention of frauds at elections. Other important acts are the following: Regulating the killing of game and catching of fish; preventing the spread of scab or other infectious diseases among sheep; to prevent cruelty to animals, and protect the public from the sale of unwholesome food.

Finances.—At the date of the last returns to the Comptroller, the total assessed value of the real and personal property in the Territory amounted to $9,108,450.05. The increase in valuation is shown by the following table:

1878	$4,520,600 50	1881	$8,066,865 75
1879	5,926,149 60	1882	9,108,450 05
1880	6,408,089 14		

The number of taxable inhabitants has increased in like proportion.

The net receipts from all sources for the two years ending Oct. 1, 1882, including balance on hand at date of last report, were $118,638.39. The disbursements for all purposes, including the payment of all outstanding warrants and several items of special expenses authorized by the last Legislature, were $76,821.42.

The bonded indebtedness of the Territory amounts to $69,248.60, divided as follows: Bonds issued under the act of 1875, due Dec. 1, 1885, $22,533.54. Bonds issued under act of 1887, due Dec. 1, 1891, $46,715.06.

Agriculture and Mining.—On these subjects the Governor, in his message to the Legislature in December, 1882, says:

> Within our borders there is a large agricultural area—delightful valleys and sunny plains stretching out in all directions—containing, in the aggregate, many millions of acres of as fertile land as can be found in any State or Territory of the Union. Here the honorable pursuits of agriculture are being followed, with the most gratifying results. No country in the world produces finer grain or grows more delicious fruit than Idaho. But, while there is ample scope within our boundaries for great numbers to engage successfully in agriculture, mining is at present, and must continue to be for many years, our chief industry. In a few years after the organization of the Territory, Idaho added to the wealth of the country nearly $75,000,000 in the precious metals, mostly of gold from the placer-mines.
>
> The practical working out of the "virgin ground" of the rich placer claims caused a falling off in Idaho's output, and for several years there was a steady decline in the amount produced. In early days but little attention was given to quartz-mining, though the existence of valuable ledges was known. But the decline in placer-mining caused attention to turn to this, and enough has been accomplished to demonstrate the fact that our resources in this line are far more extensive than they were in placer deposits. But, with the com-

pletion of the lines of railway, now building and projected, our facilities for economical mining will be equal to those of any other section of the country.

Polygamy.—On this subject the Governor says:

Among the numerous subjects discussed in my first biennial message was that of polygamous Mormonism; but my recommendations in regard to the suppression of this evil were not heeded by your predecessors. I then believed the evil to be a dangerous and formidable one, and undertook to show how it was reaching out in all directions, with the avowed purpose of seizing political power in this country—made plain, I thought, the fact that its strides toward the attainment of that end in Idaho were altogether too rapid, and too near realization, to justify us in longer ignoring the situation. But, as potent as I then depicted this unseemly power, the sequel proved that I had underrated its strength. The adjournment of the eleventh session of the Legislative Assembly, without the adoption of a single measure to suppress polygamy, proved conclusively, to my mind, that it was able to dominate that body, in so far at least as to prevent the passage of laws prejudicial to the practice. Once more it becomes my solemn duty to warn the legislative power against further toleration of a practice so fraught with woe to all that we, as Americans, hold dear; for I feel certain that the complete realization of the scheme of the Mormon priesthood means the entire subversion of all those rights and privileges enjoyed under our free institutions. The verdict returned in the recent election shows that my confidence in the people was not misplaced. They demand the complete extirpation of polygamy within our borders. You are here to give effect to their mandate, and it is with infinite satisfaction that I now suggest the adoption of some such measures as the following: That the law of evidence be so framed that no person shall be excluded from testifying, in any proceeding in prosecution for polygamy, on account of marriage relations with defendant; that cohabitation with more than one wife constitutes a continuous offense, and that to preach in favor of the doctrine of polygamy, or publicly or privately to advise, counsel, or encourage others to commit polygamy, or knowingly to aid or assist others to enter into polygamous relations, be made a crime punishable as severely as the crime of polygamy itself, and that Congress be memorialized to amend the present anti-polygamy laws, to the end that the now well-recognized defects in the same may be remedied, so as to render possible the conviction of the guilty, by giving United States and Territorial courts co-ordinate jurisdiction. I also desire to direct attention to an act of the last session of Congress, known as the "Edmunds bill." By that act all polygamists are disfranchised and disqualified for office; but the machinery for enforcing the provisions of the law apply to Utah only. It is no exaggeration to say that in two or more counties in this Territory polygamists vote and hold office precisely as though no such law were upon the statute-books. This is a state of affairs which requires a remedy at your hands.

Education.—The educational system of Idaho has not been well organized. The provisions relative to superintendence were imperfect, and the means of collecting statistics inadequate. The table in the next column gives the latest and fullest statistics accessible.

There were no returns for Ada county in 1881 or 1882. In 1881 Idaho county returned an enrollment of 239, and proportional attendance of 155.

With a few exceptions, the salaries paid teachers range from $75 a month in the central and mining counties down to $20 and even $10 a month in the agricultural counties.

COUNTIES.	School population.	Number enrolled.	Proportional attendance.	Total expenses.	Total receipts.	No. of school districts.
				Dollars.	Dollars.	
Ada	*2,000	...	...	.....	.....	41
Alturas	487	241	...	3,209 16	.....	6
Bear Lake	1,229	649	418	3,132 17	3,863 27	12
Boise	438	289	299	8,510 98	8,510 98	12
Cassia	846	290	...	2,640 00	3,931 15	12
Custer	133	47	33	2,170 50	3,718 76	2
Idaho	841	...	...	.....	.....	9
Kootenai	30	30	19	548 77	988 59	2
Lemhi	181	140	101	6,052 68	6,648 19	7
Nez Perce	1,462	900	489	7,587 57	9,195 82	37
Oneida	2,817	...	...	4,828 37	5,917 37	25
Owyhee	243	143	119	4,894 54	7,300 21	5
Shoshone	9	9	6	420 50	1,192 50	1
Washington	434	...	206	2,259 74	3,736 95	12
Total	9,650	2,688	1,690	46,855 27	55,008 88	183

Resources.—Idaho has an area of 55,228,160 acres, of which 18,400,000 are classed as mountainous. There are about 600,000 acres of lake area. The principal ones are Lake Pend d'Oreille, 120 miles long and from 5 to 10 miles wide, navigable throughout; Lake Cœur d'Alêne, 36 miles long and 3 to 5 miles wide; and Kanisku lake, 10 by 20 miles; all noted for their scenery and abounding in fish.

Alternating with the mountain-ranges are many valleys, large and small, affording a vast area of agricultural lands not exceeded in fertility by any in the world. The most extensive are Boise, Snake, Payette, Clearwater, Lemhi, Weiser, Blackfoot, Malad, Palouse, Potlach, and Bear. The arable portions of these valleys lie from 600 to 5,000 feet above the sea, and they range in size from one to 20 miles in width, and from 20 to 100 miles in length. In the northern portion of the Territory excellent crops of cereals are raised without artificial irrigation. In the central and southern parts irrigation is essential, although there are occasional small tracts lying near the level of the streams on which grain-crops may do well without.

Traversing Southern Idaho is the extensive volcanic belt, or basin of Snake river, fit only for grazing. Upon its nutritious grasses and sage are fattened thousands of cattle annually.

The forest area is 9,000,000 acres, much of it being included in the mountain-region above described. Throughout the central, northern, and eastern parts of Idaho the woodlands possess a heavier growth than in a majority of the timbered States east of the Rocky mountains, while in the remaining sections the timber-supply is not inferior to that of the most of our prairie States. Along the Clearwater, in Northern Idaho, and in several other sections, white-pine logs one hundred feet long and five feet in diameter, and red and white cedar-trees two to five feet in diameter, are common.

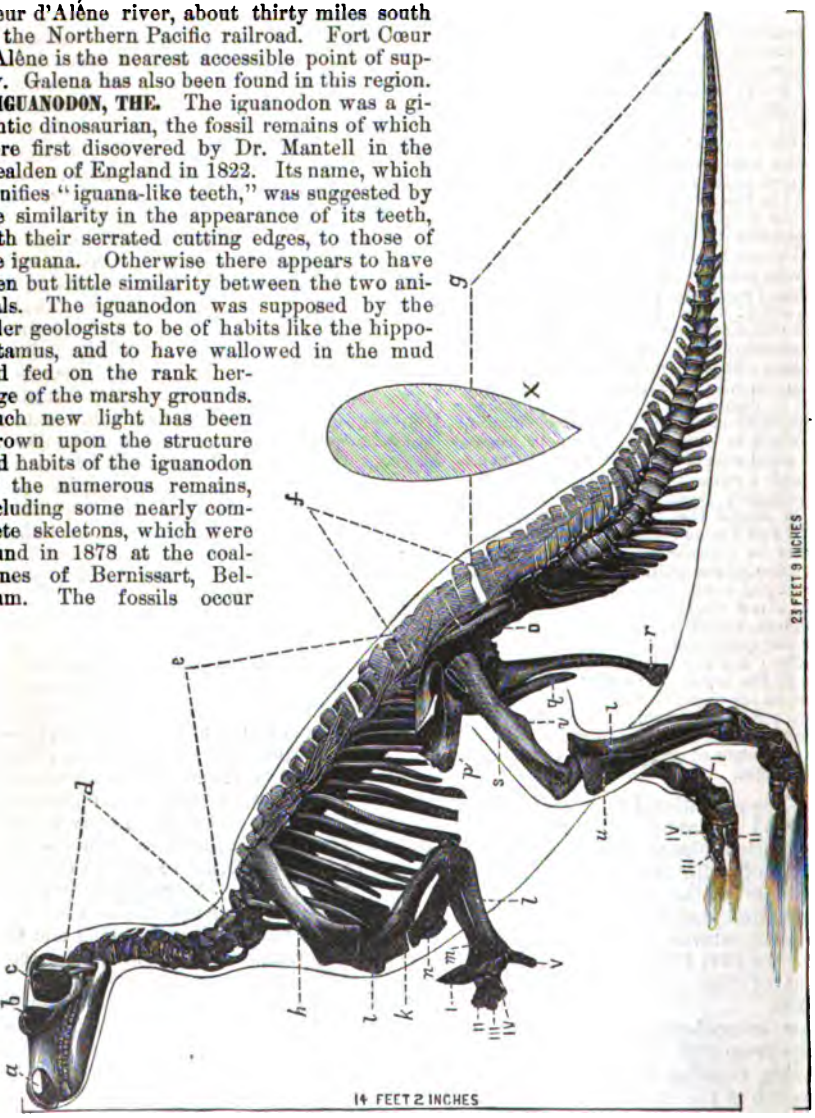
The minerals are gold, silver, copper, iron, lead, coal, plumbago, quicksilver, and others of minor value. There are also mountains of sulphur, productive salt-springs, quarries of the

* Estimated.

finest marble and building-stone, large deposits of merchantable mica, and semi-precious stones. Idaho's precious metal belt is 350 miles in length and from 10 to 150 miles in width.

Progress during 1883.—It is estimated that there was an increase of at least 10,000 in the population during the year. The mines yielded about $5,000,000, which, it is expected, will be largely increased in 1884. The agricultural resources increased 25 per cent. In 1882 gold was discovered in the Cœur d'Alêne district, in Northern Idaho. During 1883 prospecting has been going on, and there has been a large influx of miners. It is believed that when developed these mines will yield rich results. They are situated on Prichard, Gugle, and Beaver creeks, tributaries of the North Fork of Cœur d'Alêne river, about thirty miles south of the Northern Pacific railroad. Fort Cœur d'Alêne is the nearest accessible point of supply. Galena has also been found in this region.

IGUANODON, THE. The iguanodon was a gigantic dinosaurian, the fossil remains of which were first discovered by Dr. Mantell in the Wealden of England in 1822. Its name, which signifies "iguana-like teeth," was suggested by the similarity in the appearance of its teeth, with their serrated cutting edges, to those of the iguana. Otherwise there appears to have been but little similarity between the two animals. The iguanodon was supposed by the older geologists to be of habits like the hippopotamus, and to have wallowed in the mud and fed on the rank herbage of the marshy grounds. Much new light has been thrown upon the structure and habits of the iguanodon by the numerous remains, including some nearly complete skeletons, which were found in 1878 at the coal-mines of Bernissart, Belgium. The fossils occur there, like those discovered in England, in the Wealden or lower cretaceous strata, called *morts-terrains* by the workmen, overlying the coal-beds, which have to be penetrated for about twelve hundred feet before the coal is reached. Being charged with iron pyrites, the bones were quite friable and difficult to remove, but the task was accomplished successfully under the supervision of M. Depauw, of the museum at Brussels, who adopted the habits of the miners and spent three years in the work. The bones have been for two years under the constant study of M. L. Doilo, who believes he has identified the skeletons, or parts of them, of twenty-three individuals, two of which are of the species *I. Mantelli*,



IGUANODON BERNISSARTENSIS.—(At the Brussels Royal Museum of Natural History. Restored and mounted by M. L. F. Depauw.) Head: *a*, left nostril; *b*, left orbit; *c*, left temporal fossa. Vertebral column: *d*, cervical region; *e*, dorso-lumbar region; *f*, sacral region; *g*, caudal region; *A*, left scapula; *l*, left coracoid; *k*, left humerus; *i*, left ulna; *m*, left radius; *n*, sternum; *o*, left ilium; *p*, left pubis; *q*, left post-pubis; *r*, left ischium; *s*, left femur; *t*, left tibia; *u*, left fibula; *v*, third trochanter. I, II, III, IV, V, digits; *X*, diagrammatic transverse section of the body between the fore and hind limbs.

and twenty-one of the species *I. Bernissartii.* M. Depauw has set up and mounted one of the skeletons, which he has been able to restore nearly complete, except for a few phalanges and other minor details. Some interesting conclusions have been deduced from the labors of these two naturalists. The iguanodon belonged to the sub-class of dinosaurians and the order *Ornithopoda*, or bird-footed. Among the special characteristics of the family are a single row of teeth, three functional digits on the foot, and two symmetrical plates, which Prof. Marsh regarded, from studies in the British Museum, to be clavicles, and in which he traced a point of structural resemblance with birds, but which M. Dollo declares, from the Bernissart specimens, to be sternal plates. According to M. Dollo's restoration, the animal stood on its hind-limbs and maintained an erect position, like the birds. Several different lines of coincidence tend to prove this supposition to be correct. Among them are the remarkable resemblances between the structure of the pelvis and posterior limbs of birds and that of the corresponding parts in the iguanodons. Points of resemblance of the ilium and ischium, indicated by Prof. Huxley twelve years ago, are fully confirmed. The pubis is very large in the iguanodon, and projects forward and outward, forming an obtuse angle with the post-pubis. The post-pubis is long and slender, and directed backward alongside the ischium, as in birds, for a considerable distance beyond the ischial tuberosity. M. Dollo is inclined to agree with Prof. Marsh in identifying the dinosaurian pubis with the pectineal process of birds—a conclusion which is supported by the recently published observations of Miss Alice Johnson, of Cambridge, England, "On the Development of the Pelvic Girdle in the Chick," in which it is shown that in the embryo fowl the cartilaginous representative of the pectineal process is at first much larger and more prominent in proportion to the development of the pelvis than subsequently, and becomes gradually reduced as development proceeds. The fore-limbs are considerably shorter than the hinder ones, and are massive and strong; the volume of the head and thorax is considerably reduced as compared with that of reptiles generally; and the position of a large mass of the viscera is behind the hip-joint, as is the case with birds. These facts tend to support the theory that the posture of the animal was erect, for they indicate that a considerable proportion of its weight was thrown back, whereby, with the aid of the long tail, its body was more easily and securely balanced in that position. Further evidence in the same direction is given by the number of toes, which were five on the fore-feet, and four, leaving a three-toed track, on the hind-feet. The tracks of the iguanodon in the Wealden—which could not have been made by any other of the known dinosaurians of the formation—are three-toed. M. Dollo has compared the hind-feet of the fossils with these tridactyl foot-prints, and has found them to fit accurately. If the iguanodon had walked on all-fours, it would also have left five-toed tracks, while none such have been found. Another structural resemblance to birds has been traced in the fact that the dorsal spines of the vertebræ are connected by a set of ossified ligaments binding the whole dorso-lumbar region into a rigid mass. The head is relatively small, and is very much compressed from side to side. The nostrils are spacious, and chambered in their anterior region; the orbits are of moderate size, and elongated along the vertical. The temporal fossa is limited above and below by a bony arch, a disposition which is otherwise found among living lizards only in the *Hatteria.* The distal extremities of both jaws are without teeth; while there are ninety-two teeth in the hinder parts of the jaws, and these, as with other reptiles, were replaced by new ones as fast as they were worn out. The skin was smooth, or covered only with epidermic scales. Some observers believe that they have found in the foot-prints of the iguanodon evidences that a slight web existed between the toes. The first finger, or thumb, constitutes a horny spur, the remains of which are supposed to have led Dr. Mantell to believe that the iguanodon had a nasal integumental horn. In restoring and setting up the skeleton represented in the figure, M. Depauw was a little embarrassed by the fact that some of the bones could not be separated from the matrix; consequently, the restoration has a degree of stiffness, but not enough to attract the attention of casual observers. As the skeleton stands, the tip of the snout is fourteen feet two inches from the ground, and the horizontal length, from the tip of the tail to a point immediately under the tip of the snout, is twenty-three feet nine inches. M. Dollo has drawn a conjectural outline of the body of the animal, which is represented in the engraving. Leaving out the long tail, its general shape is like that of a duck. The sectional view, represented by X, indicates that the animal was relatively narrow and sharp-keeled. The tail was shaped like that of the crocodile, and was probably a powerful swimming organ. The neck was comparatively slender and capable of free movements. The iguanodon was an inhabitant of marshes—so far as is known, of fresh-water marshes only—and probably fed on large ferns, many of which were found with the Bernissart specimens.

ILLINOIS. State Government.—The following were the State officers during the year: Governor, Shelby M. Cullom, who resigned February 7th, and was succeeded by Lieutenant-Governor John M. Hamilton (Republican); Secretary of State, Henry D. Dement; Treasurer, John C. Smith; Auditor, Charles P. Swigert; Attorney-General, James McCurtney; Superintendent of Public Instruction, Henry Raab. Judiciary, Supreme Court: Chief-Jus-

tice, John M. Scott; Associate Justices, Alfred M. Craig, John M. Schofield, T. Lyle Dickey, Pinkney H. Walker, John H. Mulkey, and Benjamin R. Sheldon. Soon after his accession to office, Gov. Hamilton appointed William N. Brainard, E. C. Lewis, and Charles Strattan Railroad and Warehouse Commissioners.

Legislative Session.—The Legislature convened on the 3d of January, and adjourned on the 18th of June. On the 17th of January Gov. Cullom, Republican, was chosen United States Senator by a vote of 107 to 95 for John M. Palmer, Democrat. Among the acts of this session were the following:

An act to revive the law in relation to the Department of Agriculture, agricultural societies, and agricultural fairs, and to provide for reports of the same; appropriating $531,712 for the completion and furnishing of the State-House and for the improvement of the grounds, and providing for the submission of the appropriation to a vote of the people at the general election in November, 1884; requiring operators of butter and cheese factories on the co-operative plan to give bonds to make report of their business; dividing cities and villages subject to overflow and inundation into improvement districts, and providing ways and means to raise the streets, lots, and blocks above the line of overflow; another act for protection against inundation and overflow, permitting owners of land to construct drains for agricultural purposes; fixing the minimum license fee at $500 for dram-shops, and $150 for malt-liquors only in cities, towns, and villages, and authorizing county boards to grant licenses on like terms upon petition of the legal voters of any town or election precinct; governing foreign fire, marine, and inland navigation insurance companies doing business in the State; providing for the organization and management of corporations, associations, or societies for the purpose of furnishing life indemnity or pecuniary benefits to widows, orphans, heirs, relatives, and devisees of deceased members, or accident or permanent disability indemnity to members thereof; requiring railroad corporations organized or doing business in this State under its laws or authority, to have and maintain a public office or place in this State where transfers of stock may be made; a compulsory education act for children between eight and fourteen, requiring at least twelve weeks' schooling a year.

State Regulation of Railroads.—In May the Supreme Court of the United States rendered a decision in the so-called "granger" case of Neal Ruggles against the State of Illinois. This case arises out of the facts below set forth:

On March 18, 1873, Morgan A. Lewis, a passenger on the Chicago, Burlington, and Quincy road, tendered Neal Ruggles, a conductor, eighteen cents as fare for his transportation from Buda to Neponset, six miles. This was at the maximum rate of three cents a mile, as prescribed by the statute. The conductor demanded twenty cents, the fare fixed by the company. Lewis refused to pay more than eighteen cents, and the conductor thereupon attempted to eject him from the car. For this act the conductor was prosecuted upon a charge of assault and battery and fined ten dollars and costs. The case was then carried up through the State courts by successive appeals, the railroad company sustaining the conductor and raising the question of the right of the State to interfere with its business by fixing rates of fare and transportation. A decision was finally rendered in favor of the State by its highest court. The railroad company thereupon appealed to the Supreme Court of the United States on the ground that the act of the General Assembly of Illinois, of April 15, 1871, fixing the maximum rate of charges for the transportation of passengers on railroads in the State, was unconstitutional and void, because it impaired the obligation of the contract contained in the charters of the various companies which were merged into the Chicago, Burlington, and Quincy company by consolidation.

The Supreme Court of the United States holds: 1. That grants of immunity from legitimate governmental control are never to be presumed. On the contrary, the presumptions are all the other way, and unless an exemption is clearly established, the Legislature is free to act on all subjects within its general jurisdiction, as public interests may seem to require. The State may limit the amount of charges by railroad companies for fares and freights, unless restrained by some contract in the charter. 2. That in the present case there is no such restraint. The judgment of the Supreme Court of Illinois is affirmed with costs.

Assessment of Property.—The comparative statement of the assessments made by local assessors for 1882 and 1883 shows a total assessed value of $750,635,758 in the former and $756,422,291 in the latter year.

The assessment of Cook county amounted to $130,547,041 in 1882, and to $138,639,806 in 1883. The assessments on the capital stock of corporations aggregated $2,218,430.

State Institutions.—The financial record of the State Board of Public Charities for the quarter ended Dec. 31, 1883, shows the following expenditures for each institution for that period:

	Ordinary.	Special.
Northern Insane Hospital	$29,742 00	$12,956 00
Eastern Insane Hospital	26,195 00	58,550 00
Central Insane Hospital	32,523 00	13,065 00
Southern Insane Hospital	25,649 00	15,407 00
Deaf and Dumb	27,620 00	67 44
Institution for the Blind	8,779 00	938 56
Asylum for Feeble-Minded	13,920 00	3,264 00
Soldiers' Orphan Home	16,942 00	4,652 00
Eye and Ear Infirmary	4,479 00	876 00
Reform School	11,462 28	28,998 00

The April reports of the penitentiaries show that on March 1st the Joliet Prison had 1,419 males and 22 females; at the Southern Penitentiary March 1st there were 555 prisoners.

Corn-Crop.—The acreage and yield of the corn-crop of this State the past ten years is given below:

YEAR.	Acreage.	Yield in bushels.
1874	7,421,055	183,579,000
1875	8,162,265	280,000,000
1876	8,920,000	228,000,000
1877	8,935,411	269,089,742
1878	8,672,068	250,560,510
1879	7,918,881	265,918,377
1880	7,574,545	250,697,036
1881	7,157,834	174,491,706
1882	7,371,950	179,471,729
1883	7,304,596	186,568,568
Average	7,943,912	227,419,695

The 1883 corn-crop, while somewhat larger than the small crops of 1881 and 1882, will not furnish nearly as much marketable corn.

The quality of corn in 1883 is reported up to an average in only the following counties: Gallatin, Jasper, Massac, Randolph, and Union, all of which are in the southern portion of the State. The average yield and quality of corn are as follow:

DIVISION.	Average yield per acre.	Quality, compared with an average per cent.
	Bushels.	
Northern	21	46
Central	29	72
Southern	26	88
Average of State	25	69

Coal-Product.—Illinois has no equal, west of Pennsylvania, in the abundance of its coal deposits, its accessibility, and means of transportation. It supplies not only its own great demands, but almost wholly those of the markets of Chicago and St. Louis. The following statistics are for 1883:

Number of counties producing coal	49
Number of mines	689
Number of acres of coal-lands owned or controlled by owners of mines	110,893
Number of acres worked out	12,329
Number of men engaged	23,989
Number of tons produced	10,508,791
Increase over 1882	1,898,138
Value of same at mines	$15,310,529
Amount of capital employed	$10,896,540
Estimated capacity of annual production (tons)	21,085,435
Number of casualties, all kinds	360
Number of fatal accidents	184

The two great mining catastrophes of the year at Braidwood and Coulterville caused seventy-nine deaths. The increase in the number of counties producing coal is three, Cass, Edgar, and Macon. In the former, two mines have been opened, at Virginia and Ashland. In Edgar county, at Illinana, near the Indiana line, there is a new plant costing $60,000; and in Macon, two first-class mines at Decatur and Niantic, involving an investment of $15,000. Next year Christian county will enter the list with a mine at Pana, over 700 feet deep, opening a vein seven feet thick. The steady advance of the production in a period of years is shown by the following table:

	Number of establishments.	Number of men employed.	Number of tons produced.	Value.
1870	322	6,301	2,624,163	$6,079,482
1880	590	14,079	6,115,877	8,779,882
1882	704	19,420	9,115,658	13,696,257
1883	689	23,989	10,508,791	15,310,520

Temperance.—The Illinois State Temperance Union met in Springfield in January. The report of the State organizer was a strong argument in favor of prohibition, from a moral point of view. He gave a list of twelve counties that have adopted anti-license laws, viz.: Cumberland, Edwards, Fulton, Jasper, Johnson, Lawrence, Menard, Piatt, Schuyler, Warren, Wayne, and Stark. These counties, with a total population of 221,371, had only forty-eight prisoners in jail during the year, and twenty-four of these were incarcerated on account of crimes arising from drunkenness. On the other hand he mentioned twelve counties, with 293 licensed saloons, and a population of 217,597, with 801 prisoners in the various jails. During 1882, 117 murders were committed in the State, 61 in Cook county, nearly all having their origin in drunken quarrels.

The plan of work recommended the establishment of a weekly or monthly newspaper in every county in the State; the circulation of temperance literature; the holding of temperance meetings and the development of home talent in the cause; the securing of special temperance sermons; the organization of Bands of Hope, and the study of temperance text-books and manuals.

The same body met in Bloomington in December, voted to consolidate with the National Prohibition and Home Protection party, and recommended immediate party organization throughout the State.

Colored Convention.—A State convention of colored citizens was held in Springfield on the 16th and 17th of October. Fifty delegates, representing eight counties, were in attendance. The subjects of civil rights, education, and labor were considered. A plan for a permanent organization was adopted. The resolutions adopted were as follow:

Resolved, That while we are proud of the noble record of the Republican party in the past in the interest of the negro race, we solemnly pledge ourselves to not vote for any man for office who will not give us that recognition to which we are justly entitled.

That we will not vote for any man for office in the future who has not shown a disposition, while in office, to act honorably and fairly toward colored applicants for political preferment.

Resolved, That we recognize in the Douglas Louisville speech a "new departure," the principles of which are the underlying elements of the future success of the negro race of this country; we therefore adopt it as our idea of right and justice.

An address was also put forth, in which industrial education and co-operation were urged upon the people.

INDIA, an empire in Asia, subject to Great Britain. By the act of Aug. 2, 1858, the powers previously vested in the East India Company were assumed by the crown. The functions exercised by the company and the Board of Control were transferred to the India Office and placed under the direction of the Secretary of State for India. The Queen of Great Britain and Ireland was proclaimed Empress of India Jan. 1, 1877. The executive authority in India is vested in the Governor-General, popularly entitled the Viceroy, who acts under the direction of the Secretary of State for India. Subject to the approval of the latter, who is invariably a member of the British Cabinet, the laws are elaborated by the Governor-General in council. The council of

the Governor-General consists of five ordinary members and the commander-in-chief of the military, appointed by the crown, who preside over the departments of Foreign Affairs, Finance, the Interior, Military Administration, and Public Works; but their functions are simply administrative. The governors of presidencies and provinces are appointed by the crown, the lieutenant-governors of provinces by the Governor-General, subject to the approval of the Secretary of State for India. The Governor-General in council has power to make laws for all persons in the subject provinces, and for British subjects in the protected native states. The Secretary of State is assisted by a council of fifteen members.

The Governor-General is the Marquis of Ripon, who succeeded Lord Lytton June 8, 1880.

The Secretary of State for India is Earl Kimberley, previously Secretary of State for the Colonies, who succeeded the Marquis of Hartington on the transfer of the latter to the Ministry of War, Dec. 16, 1882.

Population.—In 1881 the total population of British India, including feudatory states, was 254,899,516. The British population of India, exclusive of the army, was, in 1871, 64,061, of whom 38,946 were males and 25,115 females. In respect of occupation, 14,822 belonged to the civil service and professional classes, 12,708 to the domestic, 7,998 to the commercial, 614 to the agricultural, 2,595 to the industrial, and 25,329 to the indefinite and non-productive class.

The occupations of the adult male population were given in the census of 1881 as follow:

Government officials	1,504,849
Army and navy	811,370
Various professions	1,218,247
Domestics	2,177,599
Merchants and traders	1,870,017
Carriers, porters, etc	1,362,103
Agriculturists and horticulturists	51,274,586
Persons engaged about animals	754,512
Mechanics, artisans, miners, etc	64,968,741
Other laborers	7,674,600
Persons of rank and property	46,262
Of no stated occupation	48,794,195

Emigration.—The emigration of coolies numbered 16,794 in the year ending March 31, 1881, 17,428 in 1880, 22,092 in 1879, 24,710 in 1878, 10,560 in 1877, 11,489 in 1876, 25,325 in 1875, and 29,243 in 1874. Of the emigrants in 1881, 4,416 went to British Guiana, 4,176 to the British West Indies, 3,207 to the French West Indies, 2,373 to Natal, 1,076 to Réunion, 965 to Surinam, and 581 to Mauritius. In 1881–'82, though the demands for coolies were as great as in the previous year, the emigration was 3,600 less. The majority of laborers shipped from Calcutta came from the Northwest Provinces and Oude, 57 per cent. from the former, and 20 per cent. from the latter. There returned during that year 3,160 emigrants, who brought back on an average £20 each.

Commerce.—The total value of the imports and exports, for the ten years 1873–'82, was as follows for each year:

YEARS ENDED MARCH 31.	Imports.	Exports.
1873	£36,481,210	£56,540,042
1874	39,628,562	56,940,078
1875	44,368,184	57,984,589
1876	44,188,062	60,291,731
1877	48,876,751	65,043,789
1878	58,819,644	67,433,824
1879	44,857,343	64,919,741
1880	52,821,398	69,247,511
1881	62,104,964	76,021,043
1882	60,436,000	83,066,000

The exports and imports of treasure, included in the above, were of the following values:

YEARS ENDED MARCH 31.	Imports.	Exports.
1873	£4,556,585	£1,298,079
1874	5,792,584	1,914,071
1875	8,141,047	1,625,309
1876	5,300,722	2,200,286
1877	11,486,118	4,029,898
1878	17,355,459	2,210,996
1879	7,056,749	3,982,228
1880	11,655,395	2,035,148
1881	8,988,214	1,440,441
1882	11,328,000	1,100,000

The returns for the year ending March 31, 1883, show a volume of commerce exceeding that of any former year. The total imports were £65,552,100 in value; the exports, £84,526,700. The imports of treasure amounted to £12,400,000, of which £5,090,000 were gold and £6,270,000 silver.

Agriculture.—The tea product of Bengal in 1881–'82 was 8,333,000 pounds, an increase of 2,000,000 pounds on that of the previous year. The produce of cinchona-bark in that province amounted to over 340,000 pounds, the greater part of which is consumed in the country. The quantity of manufactured febrifuge sold was 10,000 pounds, against 8,650 pounds in 1880–'81. Besides the Bengal plantations there are extensive areas planted to cinchona in the Neilgherry Hills and in the Madras Presidency, where the crop amounted to 250,000 pounds, all of which was shipped to England. The wheat product of Northern and Central India was a few years ago insignificant, but it has lately become one of the leading articles of export. The wheat exports in 1881–'82 were 166 per cent. greater than in the preceding year. The harvest of 1882 was so abundant that, for the lack of communication and an export market, the ryots of Bengal and other parts of India were unable to sell their produce, a state of things which produced monetary distress among the people and helped to embarrass the finances of the Government.

Railroads.—The internal commerce of India has been developed by the construction of several great lines of railway, under the guarantee of the Government. When in 1845 it was found impossible to raise the capital to build certain lines undertaken by two companies, it was determined by the Indian Government to guarantee to the railway companies, for a term of 99 years, a rate of interest of 5 per cent. Power was reserved by the Government to su-

pervise and control their proceedings by means of an official director. In 1869 the Government of India decided on carrying out all new railway extensions.

The number of miles of railroad open to traffic in the beginning of 1882 was 9,875, of which 4,590 were guaranteed lines, and 5,285 were state railroads. The number of passengers on Indian railroads rose from 15,999,633 in 1869 to 52,239,865 in 1881.

Post-Office and Telegraphy.—The number of letters, newspapers, and parcels which passed through the Post-Office in 1881 was 158,666,856, having increased from 89,561,685 in 1872.

The length of telegraph lines in operation in 1881 was 19,679 miles, having increased from 15,336 in 1872. The length of wires in 1881 was 54,318 miles. The total receipts were £452,872; the expenses, £310,371. The total number of messages sent was 1,658,647. The number of offices was 254.

The Army.—The total number of British troops stationed in India, according to the army estimates for 1883–'84, is 61,641. The strength of the native army is 126,088.

Finances.—The receipts and expenditures, as given in the closed accounts of the last three years published, amounted to the following sums:

YEAR.	Gross receipts.	Expenditures in India.	Expenditures in England.	Total expenditures.
	Pounds.	Pounds.	Pounds.	Pounds.
1878–'79	65,199,602	49,314,060	13,851,296	63,165,356
1879–'80	69,434,666	55,119,951	14,547,664	69,667,615
1880–'81	72,559,978	62,183,803	14,420,525	76,604,333

The Public Debt.—The total amount of the public debt was £59,943,814 in 1857. In the next five years it rose to £99,652,053. Between 1862 and 1868 about £4,500,000 were paid off, but in the fifteen years following about £89,000,000 were added to the debt. The amount on March 31, 1881, was £157,388,879.

Land Settlements.—The land revenue constitutes over one third of the total income of the Government. Before the mutiny it furnished more than half of the receipts of the East India Company. The share of the Government in the profits of the land has been determined in the different provinces by various settlements. The settlements in Bengal and Benares are permanent, those in other parts of India subject to periodical revision. The older settlements give the state about two thirds of the annual profits of the soil. In the revised settlements recently made the share of the Government is about one half of the natural rent.

In Bengal the land is chiefly owned by zemindars. The settlement of Lord Cornwallis, in 1793, in order to create a class of loyal local magnates throughout the country and to assimilate the land system to that of Great Britain, confiscated the lands of the ryots and bestowed them upon the former collectors of the taxes, who were vested with the entire ownership of the soil. In recent times, since the zemindars have proved a useless class, while the ryots have suffered greatly, there has been a desire to undo the act of Lord Cornwallis. It has finally been decided that the zemindars are not absolute proprietors, and an important part of their proprietary rights has been taken away from them by the Bengal tenancy bill, enacted in 1883.

The main objects of the bill are to give reasonable security to the tenant in the occupation and enjoyment of his land, and also to secure the landlord in the settlement and recovery of his rent. The provisions of the act realize as nearly as possible the principles of the Irish Land-League party enunciated in the "three F's"—fair rent, fixed tenure, and free sale.

Local Self-Government.—Lord Ripon's scheme for the tentative introduction of local self-government by representative native bodies was initiated by a law passed by the Supreme Council for the Central Provinces early in January. Each district is divided into circles, formed by aggregating several villages; a number of these circles are combined into a group, and their local affairs are administered by a local board for each group. These local boards are composed of the executive head-men of the villages within the group; representatives of the mercantile and professional classes, elected by them or appointed on their behalf; and a number, not to exceed one third of the whole, nominated by the Government. The local boards are supervised by district councils, a part of the members of which are elected by them, a part are nominated by the Government, and a part are representatives of the educated classes. The local boards are intrusted with the administration of roads, schools, hospitals, markets, wells, famine-relief works, tree-planting, pounds and ferries, etc.

The Ilbert Bill.—The promises made by the present British Cabinet to develop native self-government are in accordance with the policy advocated by Lord Lawrence and initiated by Lords Mayo and Northbrook in the decentralization of finances and the establishment of municipal councils. It is in the direction of reforms already begun by Earl Dalhousie, but arrested and delayed until the present in consequence of the Sepoy rebellion. This policy has been opposed by the Conservative party, in sympathy with the military class and with a large proportion of the Anglo-Indian officials, used to the exercise of despotic power, who look upon India chiefly as a field for the exercise of English administrative talent, and think that the country would fall into chaos and anarchy if the English rule were removed, and that this can only be maintained by tyranny and military power. Believing it necessary to treat the Hindoos as a conquered race, they

think it essential to preserve broad legal distinctions between the races. Race prejudice, which is a universal feeling, and is strongest among the most ignorant, is largely responsible for this sentiment, which is less justified than formerly, since a considerable class of natives have received a European education, while a class of degraded, ignorant, and idle Europeans has accumulated in the cities. It was owing to this idea that the natives must be treated as an inferior and servile race that the Government met with sudden and unexpected opposition to a proposed law of slight importance, but from which, in view of their general policy, they were unwilling to recede. A native member of the Civil Service, Mr. B. L. Gupta, called attention in January, 1882, to the anomalous position of native magistrates and sessions judges. Native judges in presidency towns have jurisdiction over Europeans; but when transferred or promoted to a position in the Mofussil, or country districts, they lose this right, although it is exercised by their assistants, if of European birth. In accordance with the usual practice, the Indian Government submitted the question to the local administrations for their advice. Among the provincial governors and their councils there was a general agreement of opinion in favor of removing the anomaly, and recommending the Secretary of State to sanction a bill which will give native magistrates the powers conferred upon Europeans of the same grade, except in the matter of criminal jurisdiction, which should be restricted by confining the office of justice of the peace and the power of trying European British subjects to persons who, whether native or European, have received a training calculated to fit them for the exercise of such jurisdiction in harmony with English judicial notions. The same point was raised during the discussion of the criminal procedure code in the Legislative Council in 1872.

Prior to 1872, judicial officers outside the presidency towns were not permitted to pass sentences of imprisonment on European British subjects, who were sent to a presidency town for trial by a jury before the High Court. When the criminal procedure code of 1872 was under discussion, it was proposed to abolish this privilege. The proposition to confer the jurisdiction on all superior magistrates, native and European, was negatived by a majority of two votes. A compromise was arrived at, whereby district judges and magistrates who were themselves Europeans, and justices of the peace, were granted a certain limited jurisdiction over European British subjects, and allowed to pass upon them sentences of imprisonment not exceeding one year; while the more serious offenses remained triable, as before, only by the high courts.

In presidency towns the native magistrates exercise the same jurisdiction over Europeans that they do over natives. Mr. Gupta, who had received an appointment in the Mofussil, after discharging the duties of a magistrate in Calcutta, was the only person who would be immediately affected by the change. Another native member of the covenanted civil service might be called upon to exercise jurisdiction over Europeans in 1884. Not more than five would become eligible within five years, and very few for many years to come. Yet the introduction by Mr. Ilbert of the criminal procedure amendment bill in the Supreme Council, embodying the recommendations of the majority of the provincial officials, raised a storm of protests. The Ilbert bill proposed to empower the Government to appoint to the office of justice of the peace, with jurisdiction over Europeans, subject to the rights of appeal and trial by a mixed jury, such persons as it thinks fit from among the members of the covenanted civil service and the statutory native civil service, or from among the assistant commissioners in non-regulation provinces, or cantonment magistrates.

The opposition to the Ilbert bill was almost universal in the European community. It bore the character of a somewhat artificial agitation, fomented by the class whose prospects of power and emolument were impaired by the policy of the Government to throw open the civil service as far as practicable to natives, and to develop the principle of local self-government. The Ilbert bill offered a tangible ground for opposition which appealed to popular passion and prejudice. Its opponents made the best use of the opportunity to stir up race animosities and to provoke retorts from the native journalists and orators, who possess a talent for vituperation. The bolder and more far-seeing Indians pointed out that if the English do not allow and encourage the development of free institutions, which, with the spread of English education in India, the people had learned to understand, they would copy their European masters in establishing freedom by revolution. The impossibility of holding India by the sword was shown, and the fact recalled that it was the fidelity of Indians which rescued English power in 1857. Such expressions were cited by the Anglo-Indians to show the prevalence of the belief that the days of the English *Raj* were numbered, and that the reforms offered the Indians in the direction of self-government and the equality of the races were the outcome of fear and weakness.

The ground for opposing the Ilbert bill was that it abolished a distinction founded upon race. The specific reasons why it was unadvisable to give native magistrates power to inflict punishment on Europeans, or to decide cases between Englishmen and natives, were that the Hindoos were lacking in the sense of justice and truth innate in the English character. It was said that in the tea districts and other parts of the country natives would bring false and interested complaints against planters' assistants, railway officials, etc., supported

by perjured testimony, which is notoriously obtainable for a couple of rupees, and that the native magistrates, unskilled in the sifting of evidence and biased by race prejudice, would decide in favor of the native suitors and complainants. The effect would be to frighten English capital which was needed for the development of the country. The plain ground was taken, when the agitation was under way, that it was dangerous to abolish distinctions between the conquering and the conquered race. The privileged position claimed by the British population with such unanimity, it was agreed, was not an anomaly, since the Indian laws recognized a variety of distinctions between the different ranks, castes, and religions of the natives.

The controversy was carried on with as much warmth in England as in India. The majority of the returned Indian officials opposed the Ilbert bill. British public opinion was influenced by the weight of their authority, and to a large extent accepted their arguments. In India the demonstrations and meetings in opposition to the Ilbert bill gave rise to counter-demonstrations in its favor. By the natives Lord Ripon was praised in extravagant terms. The great majority of the English population were arrayed in opposition to the Government policy, while the natives of all ranks and classes were unanimous in favor of the Ilbert bill and the policy of which it was the index. The agitation called forth expressions of the views and wishes of the indigenous community. One of their strongest desires was that the covenanted civil service should be rendered more accessible to Indians. The uncovenanted civil service, embracing the offices of the lower grades, is free to all natives who pass an English examination. The rush for Government appointments is so great that thousands pass through the colleges and attain the degrees of bachelor of arts, bachelor of law, etc., for whom there are no places. Fully two thirds of the places in the uncovenanted civil service are already filled by natives, the rest being held by Europeans and Eurasians. The Hindoos who have received a European education, chiefly in the hope of obtaining an official appointment, are objects of contempt and derision to the English, educated or uneducated. The natives, confident of their ability to sustain any intellectual test with the English, now demanded that the covenanted civil service examinations, which open the way to the highest posts under the Government, should be held in India as well as in London; and, in order that the Hindoos may acquire sufficient familiarity with the English language, that the maximum age should be raised from nineteen to twenty-one years. The opening of the covenanted civil service to natives, the branch which leads to the superior appointments, in which enormous salaries are paid, was approved under the conservative administration of Lord Lytton also, who declared that he looked forward to the time when the service would be largely, if not exclusively, filled by natives. The law opening the service to natives who should prepare and pass their examinations in England was considered, however, to open the gate too widely. Lord Salisbury, therefore, reduced the maximum age from twenty-one to nineteen years, ostensibly in order to give the successful candidates time to pursue their studies in the universities before entering upon the service. By this regulation the natives were almost entirely precluded from the competition, though they had been more successful than the English youth, and often came out at the head of the list in the examinations.

The excitement attending the discussion of the Ilbert bill was heightened by an incident which added fresh fuel to the animosities of race. A judge of the High Court, in deciding the question of the ownership of a family idol, after first consulting a number of Brahmans as to the propriety of such a course, ordered the object to be brought into court. A prominent native, editor of one of the principal English organs of the native party, characterized it as an act of indignity and sacrilege. The judge thereupon committed the native gentleman to prison for contempt of court, and by this action excited the indignation of the entire native community.

The agitation against the Ilbert bill induced the Government to call for another expression of views. The opinions of the officials this time were opposed to the bill unless modified. The heads of departments and judges were about equally divided; but of the subordinate officials the great majority of the Europeans were opposed to the bill, while all the natives were in its favor.

In December a compromise was arranged between the Government and the Anglo-Indian Association, whereby only native district judges should exercise jurisdiction over Europeans, who should furthermore be entitled to trial before a jury containing a majority of Europeans. This right is extended to non-jury districts, though the district magistrate be an Englishman.

INDIANA. State Government.—The following were the State officers during the year: Governor, Albert G. Porter, Republican; Lieutenant-Governor, Thomas Hanna; Secretary of State, William R. Myers; Treasurer, John J. Cooper; Auditor, James H. Rice; Attorney-General, Francis T. Hord; Superintendent of Public Instruction, John W. Holcombe. Judiciary, Supreme Court: William E. Niblack, George V. Howk, Byron K. Elliott, Allen Zollars, and William A. Woods, Justices.

Legislative Session.—The Legislature convened on the 4th of January, and adjourned in the early part of March. An important subject, which received early attention and full discussion, was that of the constitutional amend-

ments. It was finally decided by a vote in the Senate of 25 (mostly Democrats) to 23 (mostly Republicans) that the constitutional amendments favoring prohibition and woman suffrage, which were adopted at the previous session, were not legally pending, and could not be considered except as entirely new matter. The point upon which the decision was made was that the amendments were not set out in full in the journals of the last session, as provided by the Constitution, but were merely indicated by their titles.

Among the acts of this session, those for the reorganization of the benevolent institutions of the State, relating to the House of Refuge, abolishing the Soldiers' Orphans' Home at Knightstown and converting the institution into an Asylum for Idiotic Children, and the metropolitan police bill for some of the cities of the State, have been characterized as partisan. The appropriation bills failed to pass. The Senate passed sixty-four House bills, and the House passed fifty-four Senate bills. Some of the most important of these follow:

1. The decedents' estate act. All the obnoxious features of the law of 1881 have been repealed.
2. The road law of 1881 has been repealed throughout, and in its stead there is a supervisors' law. The law, as it now stands, secures work on the highways as under the law before the passage of the act of 1881.
3. The dog law, in view of the wide-spread dissatisfaction that existed under the tagging system of the law of 1881, is of importance to the owners of dogs.
4. The mechanics' lien law is also worthy of mention, as it secures more certainly than ever before in this State the wages of laboring-men in a mechanic's lien upon their employer's property.
5. An act to enable the several counties of the State to sell and dispose of lands forfeited to the State for the use and benefit of the school fund, and providing for the deficiency in said school fund occasioned by such sale.
6. An act regulating the business of express companies in the transportation of gold and silver coin and paper currency.
7. An act creating asylums in which to provide for the insane that are now scattered over the State.

Other acts are those suppressing the so-called "graveyard" insurance companies; regulating the transaction of business by express companies of the State; an act concerning foreign insurance companies; an act to declare exempt from taxation certain moneys and causes in action held by executors, bequeathed or devised to literary, scientific, benevolent, or charitable institutions; and an act to punish persons who disclose the contents of messages or conversations sent over telephone lines.

Special Congressional Election.—An election was held on the 9th of January, in the ninth congressional district, to fill a vacancy. The result was the choice of Charles T. Doxey, Republican, over Thomas B. Ward, Democrat.

Finances.—The following is from the annual statement of the State Treasurer, showing the receipts and disbursements for the fiscal year ending Oct. 31, 1883:

RECEIPTS.

Balance in Treasury, Nov. 1, 1882		$698,069 52
Transfer warrants	$634,286 99	
Net cash receipts	3,203,926 14	
		3,838,213 13
Total		$4,536,282 65

DISBURSEMENTS.

Transfer warrants	$634,286 99	
Net cash disbursements	3,398,068 47	
		4,032,355 46
Total		$503,927 19

RECAPITULATION.

Balance by funds:		
General fund overdraft, $924 30...		
Common-school fund	$3,217 22	
Swamp-land	2,416 47	
School-fund revenue	134,152 45	
College fund, principal	17,681 71	
College fund, interest	1,886 70	
Unclaimed estates	18,374 11	
Escheated estates	1,067 25	
Excess of bids to sinking fund	2,088 52	
New State-House fund	324,017 06	
		$504,851 49
General fund overdrawn		924 30
Balance in Treasury Nov. 1, 1883		$503,927 19

Since the last annual report the permanent common-school fund has been increased $70,747.79, making the total amount of the fund $9,204,353.98, which is larger than that of any other State.

Statistics.—The agricultural production of 1882 was remarkable. The wheat area was 3,063,348 acres, and the production 46,928,643 bushels. The chief of the State Bureau of Statistics observes that the cultivation and growth of wheat has developed more rapidly than that of any other staple crop, and has more than kept pace with the population. In 1850 the product per capita was 6·30 bushels; in 1860 it was 12·50 bushels; in 1870 it was 16·51 bushels, and in 1880 had increased to 23·75 bushels per capita. The yield of other crops was proportionately large, as shown by the following:

CROPS.	Acres.	Bushels.
Corn	3,312,683	115,692,797
Oats	634,822	19,615,516
Irish potatoes	72,934	7,264,930

In a *résumé* of the economic statistics it is shown that in 31 counties there was a decrease in the mortgage indebtedness during 1882, and that the transfers of real estate amounted in value to over $9,000,000.

The apportionment of common-school revenue, at the close of the year, was as follows:

Amount collected from counties	$737,688 82
State semi-annual interest on non-negotiable bonds	117,143 49
Balance in Treasury at last apportionment	5,676 99
From other sources	11,331 97
Total	$861,791 29
Amount apportioned	848,461 30
Amount added to shares of several counties, on account of errors in report of enumeration	870 37
To State Normal School	$10,000 00
Balance in Treasury	2,950 62
Total enumeration of children, 719,085.	
Per capita	1 18

There were filed in the office of the Secretary of State during the fiscal year ended Oct. 31, 1883, 30 articles of incorporation and consolidation of railroads, and 264 of manufacturing, mining, banking, insurance, and building and loan companies.

New insane hospitals are to be erected at Evansville and Logansport.

At the southern prison a new cell-house, with all modern conveniences and improvements, has been completed and furnished, containing cells for 400 convicts.

The total number of convicts in prison at the beginning of the fiscal year was 590, at the close of the year 548, the daily average 578. The daily average in 1879 was 624; showing a decrease in five years of 46.

Temperance.—A session of the Grand Temperance Council of Indiana was held in Indianapolis in September, with an attendance of about 200 delegates, representing 42 counties. The executive committee of the council submitted a report, reviewing the temperance work in the State, as follows:

For the past two years and more almost the entire effort of the council has been directed toward securing prohibition through the means of an amendment to our State Constitution. When the election for the Legislature was approaching, the propriety of submitting the amendment to a popular vote became a political question, and the temperance sentiment among the masses of the people was strong enough to compel the two dominant parties to commit themselves upon the issue. They were not asked to pronounce in favor of prohibition, but simply of submission of the amendment. The Democratic party pronounced against prohibition, and promised submission only as a last resort, and provided they could not defeat it beforehand. The Republican party committed itself to submission, and, although the result was the defeat of that party, the newly elected members of the Legislature were, a majority of them, favorable to our cause, and the defeat of the party can be accounted for on other grounds than that the prohibition amendment was unpopular.

The following resolution was adopted:

Resolved, That we amend our former resolution, passed in April, 1883, so as to read "that we will vote for no man for any office who is not known to be in favor of prohibition."

IOWA. State Government.—The State officers during the year were the following: Governor, Buren R. Sherman, Republican; Lieutenant-Governor, O. H. Manning; Secretary of State, John A. T. Hull; Treasurer, E. H. Conger; Auditor, John L. Brown; Attorney-General, Smith McPherson; Superintendent of Public Instruction, John W. Akers; Register of Land-Office, James K. Powers; Railroad Commissioners, A. R. Anderson, Peter A. Day, and James Wilson, succeeded by L. S. Coffin. Judiciary—Supreme Court: Chief-Justice, James G. Day; Associate Justices, Austin Adams, Joseph M. Beck, James H. Rothrock, and William H. Seevers.

The Prohibitory Amendment.—The decision of the Supreme Court, in the case of Koehler & Lange against Hill (see "Annual Cyclopædia" for 1882), was rendered January 18th. It came to this court on appeal from the District Court for Scott county, which gave judgment for the plaintiffs for beer sold. Judge Seevers delivered the opinion, of which the essential points follow:

At a special election on June 27, 1882, the electors of the State, by a majority of about 30,000, ratified an amendment to the Constitution, which, it is claimed, had been previously agreed to by the 18th and 19th General Assemblies, prohibiting the manufacture and use of intoxicating liquors as a beverage, including ale, wine, and beer.

The question is fairly presented in the record in this case whether the amendment aforesaid has been constitutionally agreed to and adopted. The validity of the amendment, and whether the same now constitutes a part of the Constitution, depends upon the question whether the 18th General Assembly agreed to the amendment which was ratified and adopted by the electors, and whether the amendment was agreed to by the 18th General Assembly in the form and manner required by the Constitution.

The engrossed joint resolution, adopted by both Houses of the Legislature of the 18th General Assembly, and approved by the Governor, was as follows:

"No person shall manufacture for sale, or sell, or keep for sale as a beverage, any intoxicating liquors whatever, including ale, wine, and beer."

This proposed amendment was ratified by the electors at a special election held on June 27, 1882. Counsel for the plaintiff insists that the joint resolution at the time it was agreed to by the Senate contained the words "or to be used," and that it then read as follows:

"No person shall manufacture for sale, or sell, or keep for sale as a beverage or to be used, any intoxicating liquor whatever, including ale, wine, and beer."

The resolution claimed to have been agreed to by the Senate is materially different in substance from the one ratified by the electors. Counsel for the appellant do not claim this is not so, as shown by the journals, but their contention is that the enrolled resolution signed by the Speaker of the House, President of the Senate, and approved by the Governor, is a verity, and is conclusive evidence that the resolution, as enrolled, was agreed to by both Houses of the 18th General Assembly, or, if this is not so, that the preponderance of the evidence is in favor of the proposition that the resolution which was agreed to was correctly enrolled. The plaintiff contends that it is made clear and certain by an examination of the Senate journal that the words "or to be used" were in the resolution when it passed the Senate, and that the journal is the best evidence of such fact.

There is no provision of the Constitution, nor is there a statute which by implication requires that a joint resolution proposing to amend the Constitution shall be signed by the presiding officers of the two Houses. Such signing, therefore, is not essential, and may be dispensed with. There is no provision of the Constitution or statute which requires that it shall be enrolled. But there is a constitutional injunction, to say the least, that it shall be entered on the journals. In a constitutional sense the journals constitute and are the primary evidence, and the enrolling and signing, as above stated, at best are only secondary evidence, which may and can only be considered when the primary evidence has been lost or destroyed.

The journal of the House of the 18th General Assembly fails to set out or even show the substance of the substitute or amendment of the House joint resolution which had been adopted by the Senate. Such journal only sets out the original resolution which had been introduced in the House, and shows simply that the House concurred in the Senate substitute,

and therefore the House journal fails to show that it adopted the same resolution which was adopted by the Senate.

When the 19th General Assembly came to consider the question as to whether it would agree to the constitutional amendment proposed in the 18th, it did so in the following manner and form, omitting material portions thereof:

SECTION 26. No person shall manufacture for sale, or sell, or keep for sale, as a beverage, any intoxicating liquors whatever, including ale, wine, and beer.

It will be observed that the words "or to be used" are not in this resolution, and that the 19th General Assembly determined in substance that such words were not in the resolution when it was agreed to by the 18th.

We are aware of the rule which universally obtains, that a statute should not be declared unconstitutional unless it clearly appears to be so. It follows that this rule should be applied to amendments of the Constitution. Mindful of this rule, and feeling its full force, it is possibly to be regretted that we have felt forced to declare that the amendment in question, which was ratified by so large a majority of the electors, has not been constitutionally adopted.

The result is, the judgment of the District Court must be affirmed.

Judge Beck dissented.

A convention of the friends of temperance was immediately called, to meet in Des Moines on the 7th of February, for consultation. The convention adopted among others the following resolution:

Resolved, That it is the deliberate judgment of this convention that the Executive and the General Assembly should immediately take steps to put in force and effect the will of the people as expressed by the vote of the 27th day of June last, by providing by an extra session called, at as early a date as can legally be done—

1. For a submission of a prohibitory amendment to the Constitution of Iowa.

2. For such other relief by statutory law as will relieve the people and the homes of the State from the curse of the liquor-traffic.

The Governor declined to call an extra session. An application for a rehearing of the case was made to the court, on the following grounds, and was granted:

1. The 19th General Assembly had jurisdiction of the subject embraced in the joint resolution of the 18th General Assembly, proposing the amendment to the Constitution drawn in controversy in this case, including the regularity of its passage, and its judgment thereon is conclusive and can not be reviewed.

2. The enrolled joint resolution of the 19th General Assembly, in the custody of the Secretary of State, is conclusive evidence of the judgment upon the regularity of the action of the 18th General Assembly relative to the amendment involved in this case, and of its own action thereon.

3. The judicial department of the State has no jurisdiction over political questions; and can not review the action of the 19th General Assembly and of the people in the matter of the adoption or amendment of the Constitution of the State.

The rehearing was had on the 3d of April, and the following days, and on the 21st the Court handed down an opinion, dissented from by Judge Beck, reaffirming its former decision.

Driven Wells.—The decision of the United States Circuit Court, rendered early in May, in the case of William D. Andrews and others against George Hovey, touched a matter of great importance to the people of the State. Numerous suits in this and other States depended on the result of this suit. These suits are brought on reissued letters patent No. 4,372, granted to Nelson W. Green, one of the complainants, under date of May 9, 1871, the original patent, No. 73,425, bearing date Jan. 14, 1868, and having been issued for an "improved method of constructing artesian wells." The decision holds the reissued patent invalid, because it is broader than the original patent, and contains matters not set out in the original. It also holds that Mr. Green abandoned his invention after he made it, and before he applied for a patent. It holds the patent void also, because wells had been put down at Milwaukee, Wis., and Independence, Ia., before the time Green claims to have made the invention, which embraced all the principles claimed in his patent. If this decision be sustained by the Supreme Court of the United States, it will relieve a vast number of farmers from the payment of royalties.

Finances.—The following statement covers the twenty-one months from Oct. 1, 1881, to June 30, 1883:

NAME OF FUND.	Balance on hand Oct. 1, 1881.	Receipts from Oct. 1, 1881, to June 30, 1883.	Total.	Disbursed from Oct. 1, 1881, to June 30, 1883.	Balance on hand June 30, 1883.
General revenue	$91,850 51	$2,415,888 19	$2,507,238 70	$2,435,672 18	$71,559 52
Permanent school fund	2,266 66	1,523 00	3,789 66	.....	3,789 66
Temporary school fund	.....	40,696 98	40,696 98	40,576 92	120 01
Coupon fund	329 85	.....	329 85	178 50	151 35
War and defense fund	.....	29,377 64	29,377 64	29,377 64	.....
Agricultural College endowment fund	84,104 72	21,273 02	105,377 74	9,498 38	95,884 36
Total	$178,551 74	$2,508,258 78	$2,686,805 52	$2,515,300 62	$171,504 90

The appropriations made by the 19th General Assembly have all been paid as the same became payable, and the State, in every financial respect, is in better condition than at any period for the past twenty years.

All the public institutions of the State have been, so far as their support is concerned, maintained in a manner creditable to the State, and without marked increase in cost, notwithstanding the advance in cost of almost every article necessary to their proper and comfortable support.

The Auditor estimates the receipts of the present two years, based on a two-mill State levy, at $2,482,600, an increase of nearly $75,000 over the previous period; and the disbursements at $1,918,820, leaving a balance subject to general and miscellaneous appropriations of $563,780, or a little in excess of $500,000. The State is free from debt.

The total assessed valuation of property foots up $440,618,330 against $412,723,902 two years ago. There have been gains in all counties except nine. The assessed value of realty in towns in 1881 was $55,523,683; in 1883, $75,626,670.

The greatest general increase has been in the northwest part of the State, where the process of breaking up new farms, the importation of stock, and the immigration of population has been going on steadily. This is incident to a comparatively new country, and was to have been expected. But in some of the older counties this increase has been almost equaled. Especially is this true in the case of Polk county, where the valuation has taken a jump from $11,000,000 to $16,000,000.

Schools.—From about 2,400 children enrolled as pupils in the first year of the State's existence, 1847, the number has increased with the growth of the State until, by the last report, there was a total enrollment in school of 464,432; the number of teachers has also grown from 124, until 22,081 are now employed, and these exclusively in the free common schools. In like manner, the school-houses have increased from 105, nearly all built of logs, to 11,825, valued at over $10,000,000.

In the State Agricultural College there were over 300 students during the year.

State Institutions.—Both the insane hospitals are crowded to their utmost capacity. The number remaining in the Mount Pleasant Hospital, at the close of the period, June 30, 1883, was, males, 286; females, 226; total, 472. The number at Independence at the same date was, males, 323; females, 257; total, 580; a grand total of males, 559; females, 493; aggregate, 1,052. The total number of insane in the State on Nov. 1, 1883, was 1,726, of which number 1,001 were supported in the State hospitals, 519 were in the county almshouses, 133 in private asylums, 58 at homes of relatives, and 15 confined in county jails.

The number of convicts at Fort Madison has increased slightly over the previous term; the number remaining June 30, 1883, being 378 as against 341 on Oct. 1, 1881. The Animosa prison is still in process of construction, but has so far progressed that the convicts therein, numbering 229 at the close of the period, are well provided for in every respect. The prison will have a capacity exceeding 800.

The whole number of children at the Boys' Reform School, at Eldora, is reported at 240, those at the Girls' School, at Mitchellville, at 84.

The report of the Superintendent of the Iowa Institution for Feeble-Minded Children, at Glenwood, shows that the general health of the children has been remarkably good, notwithstanding the necessarily crowded manner in which they have been compelled to live and sleep. From the 24th day of May, 1882, to June 30, 1883, there were 65 children admitted, but there were, during the same period, 22 dismissed, 11 deaths, and 1 deserter, leaving in the institution 239.

The State of Iowa reports 2,314 feeble-minded children, of whom 1,960 were, in 1880, at home, neither provided for in insane hospitals nor institutions of this class.

Coal.—The State Mine Inspector estimates the coal production of Iowa for 1883 to be 3,881,000 tons, a gain of 750,000 tons over last year. About one fourth of the whole is mined in Mahaska county, and five eighths of the whole in Keokuk, Lucas, Polk, Boone, Webster, Wapello, and Appanoose counties.

Banks and Insurance.—The Governor says:

> I concur generally with the views of the Auditor in respect to the growing importance of the banking interests of the State, and the necessity of placing the responsibility of the supervision thereof upon some officer who can give the requisite time thereto. The report shows the number of banks operating under State law to be seventy-six, with a capital of $3,701,793.12, and deposits aggregating $11,200,798.10, as against forty-two banks in 1875, with $2,063,402.50 of capital paid up and total deposits of $3,959,791.72—an increase nearly double, both in number of banks and amount of capital, and treble in volume of deposits. The insurance report of May, 1883, which is the last yet issued, shows that the risks written during the year in the State amounted to $201,949,207.24, and the fire-premiums paid during the year aggregated $3,039,349.99.

There are eighty-eight national banking institutions in Iowa, the capital stock amounting to $7,135,000, and the individual deposits to $16,169,064.72.

Railroads.—The report of the Railroad Commissioners for the year ended June 30, 1883, shows the total number of miles of railroad in operation in Iowa to be 7,014$\frac{26}{100}$ miles. The commissioners estimate that the stock of these roads representing the portion of them in Iowa, added to the stock of the roads entirely in Iowa, amounts, broad-gauge roads, to $132,895,478, or $19,811 per mile; the narrow-gauge roads to $1,386,991, or $6,481 per mile. The total amount of stock reported as owned by persons living in the State is $5,164,591.41. The total amount of taxes paid by the railroads in the State is $830,655.67, which is 7$\frac{10}{100}$ per cent. of the net earnings.

Party Conventions.—The Democratic State Convention met in Des Moines on the 6th of June, and adopted a platform denouncing abuses of the civil service; favoring a tariff for revenue only; opposing constitutional prohibition, but favoring a license law; favoring legislative regulation of railways; and demanding protection for American citizens imprisoned by foreign governments.

The following nominations were made: For Governor, L. G. Kinne; Supreme Judge, Wal-

ter I. Hayes; Superintendent of Public Instruction, Edgar B. Farr.

The Republican State Convention met at the same place on the 27th of June, and adopted a platform denouncing polygamy; favoring prohibition; denouncing the giving of railway-passes to public officers; favoring a protective tariff; proposing a national Department of Industry; favoring exemption from attachment of soldiers' pensions, or homesteads purchased therewith; calling for amendments to the criminal code; favoring legislation to protect miners; and approving the administration of President Arthur. Messrs. Sherman, Manning, and Akers were renominated for Governor, Lieutenant-Governor, and Superintendent of Public Instruction respectively. For Supreme Judge, Joseph R. Reed was nominated.

The Greenback State Convention also met in Des Moines on the 11th of July, and adopted a platform favoring unrestricted coinage; opposing refunding of the national debt; demanding an income-tax; favoring civil-service reform; favoring a low tariff; demanding abolition of the railroad commission; demanding equal political rights for all men and women, and favoring prohibition.

The following nominations were made: For Governor, James B. Weaver; Lieutenant-Governor, Sanford Kirkpatrick; Supreme Judge, D. W. Church; Superintendent of Public Instruction, Miss Abbie O. Canfield.

A meeting of the Iowa Woman's Suffrage Association was held in Ottumwa in October, which put forth a platform, the most important resolution of which was the following:

> That the votes of women are imperatively needed to promote the interest of temperance, purity, and peace, to give woman greater self-reliance, self-respect, and personal independence, and to secure to woman a "fair day's wages for a fair day's work."

Election Returns.—The election in October resulted in the choice of the Republican ticket. The vote for Governor was as follows: Sherman, 164,141; Kinne, 139,032; Weaver, 23,089; Sherman's plurality, 25,109. For Judge of the Supreme Court the vote was: Reed, 163,325; Hayes, 141,061; Church, 21,447. For Superintendent of Public Instruction: Akers, 165,873; Farr, 138,266; Canfield, 21,923. To fill a vacancy in the 6th congressional district, John C. Cook, Fusion, was elected by a vote of 14,894 against 14,653 for Stiles, Republican. The Legislature chosen at this election will be divided as follows:

HOUSES.	Republican.	Democratic.	Greenback.
Senate	39	11	..
House	52	42	6

ITALY, a kingdom of Southern Europe, constituted in 1861, when Victor Emanuel assumed for himself and his descendants the title of King of Italy, and proclaimed the Constitution granted by his father, Charles Albert, to Sardinia in 1848. The executive power is vested in the sovereign, and is exercised through responsible ministers. The legislative power belongs jointly to the two houses of the legislature and the King. The Senate is composed of an unlimited number of members, nominated by the King, the conditions of their nomination being the occupancy of an important office, distinction acquired in literature, science, or other honorable occupation, or the payment of 3,000 lire, or francs, in taxes annually. In the Chamber of Deputies a member is allowed for every 40,000 inhabitants. The deputies are elected under the electoral law of 1882, which introduced the *scrutin de liste*, by ballot, every citizen over twenty-one years of age who pays taxes amounting to twenty lire yearly, and can read and write, being entitled to vote. The lower ranks of officials and the ordained clergy are ineligible. Senators and deputies serve without pay. The number of senators in 1880 was 270, and the number of deputies in 1881, 508. Legislation can originate in either house, but the Chamber of Deputies has the exclusive right to vote money. The King, Humbert I, born March 14, 1844, the eldest son of Victor Emanuel, succeeded to the throne Jan. 9, 1878.

The Ministry, formed May 29, 1881, is composed as follows: President of the Council and Minister of the Interior, Agostino Depretis; Minister of Finance, Agostino Magliani; Minister of Justice and Ecclesiastical Affairs, B. Giannuzzi-Savelli, who succeeded Giacomo Zanardelli May 25, 1883; Minister of Foreign Affairs, P. S. Mancini; Minister of War, General Eduardo Ferrero; Minister of Marine, Vice-Admiral del Santo, who in November, 1883, succeeded Vice-Admiral Baron F. Acton; Minister of Public Works, J. Genala, who succeeded Antonio Baccarini, May 25th; Minister of Agriculture, Industry, and Commerce, D. Berti, successor to Carlo Miceli; Minister of Public Instruction, Giambattista Baccelli.

Area and Population.—The total area of the kingdom is 288,539 square kilometres, or 114,296 square miles. The population, as determined by the census of Dec. 31, 1881, was 28,459,628, showing an increase in ten years of 1,660,274. The density of population was 248 per square mile. The population was divided as to sex into 14,265,383 males and 14,194,245 females. The number of Protestants, as approximately determined from the declarations of ministers, was in 1881 about 62,000, of whom 22,000 were Waldenses of the Vaudois. The number of Israelites was about the same. The number of strangers at the end of 1881 was 59,956, of whom 15,790 were Austrians, 12,104 Swiss, 10,781 French, 7,302 English, 5,234 Germans, 1,286 Americans, and the rest of Russian, Greek, and other nationalities.

The number of marriages in 1881 was 230,143; births, 1,116,379; deaths, 819,435; excess of births, 296,944.

The only colonial possession of Italy is the Bay of Assab, on the coast of the Red Sea; area, 243 sq. m.; pop. in 1881, 1,300 souls.

Emigration. — Emigration was small before the establishment of the kingdom. In recent years Italians emigrate in considerable numbers to all parts of Europe, America, and other parts of the world, wherever there is a demand for laborers on railroads or similar works. They usually return with their savings to their homes. The number of emigrants in 1869 was 23,040; in 1870, 81,500; in 1871, 100,170; in 1872, 115,272; in 1873, 80,716; in 1874, 51,200; in 1875, 26,872; in 1876, 108,807; in 1877, 99,213; in 1878, 96,268; in 1879, 119,831; in 1880, 119,901; in 1881, 135,832; in 1882, 161,562. The number of Italians residing abroad in 1871 was estimated to be about 476,403. The number in the United States at that time was estimated at 70,000. The number who arrived in the United States in the year ending June 30, 1882, was 32,159; in 1882–'83, 31,792.

Commerce.—The total values of imports and exports, for each of the ten years ending with 1882, were as follow:

YEARS.	Imports.	Exports.
	Lire.	Lire.
1873	1,287,829,774	1,133,543,863
1874	1,304,994,828	985,458,582
1875	1,215,051,015	1,057,161,050
1876	1,330,147,920	1,216,921,205
1877	1,154,308,089	966,523,543
1878	1,070,802,615	1,040,789,434
1879	1,262,044,668	1,100,961,109
1880	1,224,812,701	1,130,659,312
1881	1,225,600,000	1,192,300,000
1882	1,345,400,000	1,155,800,000

The imports of grain were 81·8, the exports 77·1 million francs in value; the exports of wine, 48 millions; imports of tobacco, 25·8 million francs; exports of fruits, seeds, etc., 61·9, imports 17·6 million francs; exports of animals and animal food products, 114·2, imports 75·9 million francs; imports of coal and fuel, 64·4 millions; of metals, 83·2 millions; exports of minerals and stones, 68·3 millions; of hides, leather, etc., 15·9, imports 52·1 millions; exports of textile materials, 356·2, imports 190·4 million francs; exports of pottery and glass, 12·8, imports 9·5 million francs; imports of metal manufactures, 13·9, of machinery, etc., 41·7 millions; imports of yarns, 54·5, exports 14·5 million francs; imports of textile manufactures and articles of dress, 160·8, exports 23·9 million francs; exports of jewelry and objects of art, 87·4 million francs; imports of drugs, dyes, and chemicals, 59·1, exports 47·6 millions; exports of oils, etc., 110·5 millions.

Navigation. — The total tonnage entered at Italian ports in 1882 was 17,559,956, of which 12,419,375 tons were coasting-vessels. The steam tonnage entered was 14,111,111 tons. Of the 5,140,581 tons engaged in foreign commerce, 1,523,795 were under the Italian, and 3,616,785 under foreign flags; of the steam tonnage, included in the above, 788,664 tons were Italian, and 3,214,935 foreign; total steam tonnage, 4,003,599. The tonnage of vessels with cargoes entered was 4,127,551, cleared, 3,352,064 tons.

The merchant marine numbered, in 1882, 7,528 sailing-vessels, of 885,285 tons, against 7,639, of 895,359 tons, in 1881; and 192 steamers, of 104,719 tons, against 176, of 93,698 tons, in 1881; total tonnage in 1882, 990,004 tons, in 1881, 989,057 tons. The number of registered mariners in 1882 was 181,381.

Railroads.—The length of railroads in operation at the beginning of 1882 was 8,775 kilometres. The receipts in 1881 amounted to 191,661,613 lire; the total cost of construction on Dec. 31, 1881, was 2,678,284,808 lire.

Post-Office.—The number of letters and postal-cards that passed through the post-office in 1881 was 168,878,086; of newspapers, etc., 154,562,446; of postal orders, 4,022,308, of the aggregate amount of 503,695,138 lire. The receipts were 29,787,318 lire; expenses, 25,980,398 lire.

Telegraphs.—The length of telegraph lines, at the end of 1882, was 27,613 kilometres; of wires, 93,799 kilometres. The number of dispatches was 6,454,942. The number of private domestic dispatches was 5,190,909, against 5,015,005 in 1881; of private foreign dispatches, 521,180, against 517,599. The receipts were 12,423,102 lire; expenses for service, 7,974,932 lire; for maintenance, 186,765 lire; extraordinary expenditure, 459,000 lire.

The Army.—From 65,000 to 75,000 young men are levied annually into the standing army. The rest, as they reach military age, are enrolled in the reserve, and required to drill forty days annually. The law of June 9, 1882, increased the war effective by 100,000 men. The standing army under that law is organized into 96 regiments of infantry of the line, 12 of bersaglieri, 6 of Alpine troops, 98 companies in 87 military districts; 22 regiments of cavalry, with 5 depots; 12 regiments of field-artillery of 10 batteries, 2 brigades of horse-artillery of 2 batteries, 5 regiments of fortress-artillery of 12 batteries; 2 brigades of mountain-artillery; 4 regiments of engineers, 2 of sappers and 2 of miners, 1 regiment of pontoniers, and 1 regiment of railroad and telegraph troops; and 11 territorial legions of carbineers, besides 1 regiment of instruction. The war effective of the standing army is maintained at 690,000 men; of the mobile militia, 300,000 men; of the territorial militia, 1,000,000 men. The total strength of the army, as reported Sept. 30, 1882, was 1,985,619 men.

Italy has adopted the French plan of training the gendarmerie and customs guard in military operations and organizing them for mobilization with the army, so that in the event of war their discipline and knowledge of arms can be turned to account in the national defense. They are schooled in the use of the Vetterli rifle, and in case of mobilization will form in battalions.

The Navy.—The navy consisted on Jan. 1, 1882, of 19 ironclads, 18 screw-steamers, 6 paddle-wheel steamers, 17 transport-steamers, and 12

vessels for local service. The iron-clad navy includes the four most powerful men-of-war in the world, double-turret ships, each carrying four 100-ton guns. The Duilio and Dandolo, twin ships, of 10,650 tons, are plated with 22-inch armor throughout, and are constructed for a speed of 14 knots an hour. The Italia, of 14,000 tons, has armor 33 inches thick at the water-line, and is calculated to run 16 knots an hour. The armor-plates and armament were not completed in 1883. The Lepanto, the fourth of the colossal ironclads, was launched March 17, 1883. Her keel was laid in August, 1877. She is a sister-ship to the Italia. She measures 122 metres in length and 22¼ in breadth. Her displacement is 14,-500 tons. The engines, of 18,000 horse power, give a speed of 17 knots. She will carry four 100-ton guns and eighteen 4½-ton broadside-guns. The cost of this vessel was nearly $5,-000,000. Three other monster ironclads were on the stocks in 1883, the Francesco Morosini, at Venice; the Ruggiero di Loria, at Castellamare; and the Andrea Doria, at Spezzia. The first two are expected to be built and equipped before 1887. The naval project of 1875 is carried out, as far as regards monster turret-ships, by the construction of these seven vessels. The scheme was elaborated by Minister St. Bon, whose predecessor in the naval office, Ribotz, had first adopted the idea of surpassing other nations in the development of strength of armor, and size and power of guns, which was already indicated as the direction of naval progress. The Duilio, which excelled in size and strength the Inflexible and the Duperrée, was begun by him in 1873. Before that time Italy had built an iron-clad fleet, which was on a par with the navies of other nations, when constructed, but was now behind the later vessels of the great powers among whom she was ambitious to maintain her place. The Terribile and the Formidabile were built in 1860, with armor 12 centimetres in thickness. The Maria Pia, San Martino, Castelfidardo, and Ancona, begun two years later, were of the same strength. The Venezia, Palestro, and Principe Amadeo, which were built after 1865, were somewhat more heavily plated, and carried a 25-ton gun in the bow, and 18-ton instead of 12-ton broadside-guns; but would not bear comparison with the more formidable ironclads with which the other naval powers were beginning to provide themselves. The announcement of the project for a fleet of seven monster ironclads, in which the Duilio was to be outdone, provoked a great deal of discussion and criticism. Many held that smaller ships, carrying guns of equal power, but with fewer in each vessel, would meet the requirements of modern warfare, and save the Government from the risk of having its naval defenses crippled by loss of any of these vessels, representing an investment of 25,000,000 francs, which is liable to be wiped out by a single torpedo. The problem it was sought to solve in the construction of these "high-deck cruisers" is, to combine a speed and facility of evolution which renders them always prepared for attack, and room for enormous stores of coal, besides the space taken up by the engines necessary to fulfill these conditions, with armor which the most powerful projectiles can not penetrate, and guns which shall not be inferior in power and penetration to any which technical science can produce. The fulfillment of these conditions necessitates a peculiar form of construction. The Lepanto has a length of keel of 122 metres, an extreme breadth of beam of 22·28 metres, and a draught of 9·24 metres. She can take in 3,680 tons of coal, though the usual store is 1,600 tons. The four great breech-loading Armstrong guns are of 43-centimetre calibre. They are above the upper one of the two closed and armored decks in an armor-plated redoubt. The shield of the revolving turret consists of steel plates 55 centimetres thick. Of the smaller guns, 16 in a casemate form a broadside battery; the other two are on deck. The mean height of the ship's side above the surface of the water is only six metres, though somewhat higher than in the Dandolo. The iron-covered lower deck and a multitude of isolated cubical water-tight compartments secure the vessel from the danger of filling with water.

The Government have ordered, in addition to the last, two first-class ironclads of the Italia type, the construction of a torpedo-ram built on the model of the Etna, and four small cruisers of great speed, armed with light guns; also 18 sea-going torpedo-boats, capable of making 21 knots an hour, of following the squadron in all weather, and of steaming three times the length of the west coast without taking in fresh coal.

The Italian marines are now armed with repeating-rifles of the Bartoldo model. In 1880 a large sum was appropriated for naval stations and coast fortifications. The two stations of Venice and Spezzia are far advanced, and the third one, which was transferred from Naples to Taranto, at the head of the bay of the same name and fronting the coast of Africa, was begun in 1881 and is to be completed in 1889, at a total cost of 16,000,000 francs. The harbor is good, and easily defensible by fortifications on the islands at the entrance; but the navy-yard is on the Mare Piccolo, a basin connecting with the harbor by two canals. One of these is being deepened to admit vessels of war to the basin, which will constitute the naval harbor proper.

Experiments were made in the winter of 1882–'83 with the new 100-ton gun, of forty-five centimetres bore, against armor forty-eight centimetres thick, of various combinations of metal and arrangements of the plates. The penetration was satisfactory, and the ministry recommended the construction of breech-loaders of the same size and pattern for ships and coast fortresses.

Finance.—The large deficits which occurred for many years after the establishment of the kingdom, amounting in the single year of 1866 to 617 million lire, were reduced to 128 millions in 1876. Since that year there has been a surplus each year. The revenue has nearly trebled since 1861, but the expenditures have but slightly increased in fifteen years. The budget estimates for 1881 gave a surplus of 7,810,369 lire, but the actual excess of receipts in that year amounted to 50,887,238 lire; the receipts amounting to 1,518,535,464, and the expenditures to 1,467,648,226 lire. There have been large extraordinary expenditures in recent years, amounting to 678 million lire in 1882, in which year new debts figured in the extraordinary receipts for 668 millions. The total ordinary revenue of that year was stated in the budget as 1,360,842,338 lire; extraordinary receipts, 837,061,600 lire; total receipts, 2,197,904,028 lire; total expenditure, 2,179,403,868 lire.

The budget for 1883 gives the total ordinary revenue as 1,300,353,714 lire; extraordinary revenue, 149,313,962 lire; total revenue, 1,544,861,667. The ordinary expenditures are stated as 1,344,541,100 lire; extraordinary expenditures, 192,685,085 lire; total, 1,537,226,185 lire. The amount of new debts is set down as 28,151,705 lire; of sales of ecclesiastical and domanial property, etc., 24,172,005 lire. The extraordinary receipts and disbursements for the construction of railroads is stated as 89,233,807 lire.

The public debt, which stood at 2,437,000,000 lire in 1860, was increased by the deficits, which constantly recurred after the establishment of the monarchy, to 11,162,561,000 lire in 1881, of which the consolidated debt constituted 8,079,526,000 lire; the redeemable debt, at 3 and 5 per cent., 1,667,505,750 lire; the floating liabilities, represented by treasury bonds and notes, 475,529,250 lire; and the paper currency, 940,000,000. For the redemption of the paper currency a loan of 729,745,000 lire was raised in 1881–'82. Against the paper currency and treasury bonds certificates of the funded debt, to the amount of 1,150,000,000 lire, were deposited by the Government. The expenditures for interest provided for in the budget of 1883 are 526,665,577 lire, of which 437,649,383 lire represent the interest on the consolidated debt; 3,225,000 lire, the permanent dotation to the Holy See, which has been refused by the late and the present Pope, and is paid over to the ecclesiastical fund; 40,702,076 lire, interest on loans not inscribed in the *libro grande;* 33,929,495 lire, interest on various unfunded debts; and 11,159,623 lire, interest on treasury bonds and other floating liabilities. The expenditure for amortization in 1882 amounted to 3,671,584 lire.

In 1884 the tobacco monopoly reverts to state administration. In the budget estimates for 1884–'85, presented to the Chamber in November, 1883, a surplus is shown of 6,975,000 lire. The receipts of the treasury in 1883 exceeded those of the preceding year by more than 32 million lire.

Resumption of Specie Payments.—On the 12th of April the treasury was ready, in accordance with the law of April 7, 1881, to exchange gold or silver for the paper money, which had been the currency of the country for many years, and was only exchangeable at a large discount for French or English gold. Before the date of resumption the discount sank to a nominal figure. The Government had prepared for the resumption of specie payments by accumulating 600 million lire in gold and silver. The operation of drawing this large supply from other countries without producing a monetary crisis had been conducted with skill and forethought. The stock at first accumulated consisted of 444 millions in gold and 156 millions in silver. Through various transactions of the treasury this proportion was changed, until, on the day of resumption, the stock of metal coined in national pieces consisted of 517,222,230 lire of gold coins and 82,770,730 lire in five-lire pieces. The stock of gold originally acquired was composed of bars and foreign coins to the value of 152,931,585 lire, national gold coins to the value of 245,290,600 lire, and 45,777,795 in drafts on other countries. The 153 millions were made up of 23½ million francs in bars, 59¾ millions in Russian imperials, 53½ millions in American eagles, 10 millions in sovereigns, 5¼ millions in German crowns, and 1 million in Spanish coins. The largest sums were sent to Italy in 1882, viz., 238 millions of gold and 66¾ millions of silver, against 150 millions of gold and 16 millions of silver in 1881. The largest supply came from France, which furnished 147¼ millions, 66¼ millions of French, ½ million of foreign, and 80½ millions of silver. America supplied 65¾ millions of her own gold; Germany, 5½ millions of her own and 60¼ millions of foreign gold; England, 59¼ millions of foreign gold; Italy, 58½ millions of her own; Austria, foreign coins to the amount of 38½ millions; Russia, 25¼ millions of her own gold; Australia, 10 millions of her own gold; Denmark, 5½ millions of her own gold; Belgium, 2¼ millions of her own; and Spain, ¾ million of her own gold. Switzerland furnished ¼ million in gold and 4½ millions in five-franc pieces.

When the treasury and the agencies throughout the kingdom were opened for the exchange of coin for paper, there was a rush of people to the counters, who were actuated mostly by motives of curiosity. The actual amount redeemed, exclusive of the one and two lire and fractional notes, which were called in, was insignificant, the total for the first day being only 2¾ million lire. The total amount of Government currency outstanding was 950 million lire, so that when the accumulated 600 millions are exchanged there will still be 350 millions of forced paper currency, which amount the Government intends to leave in circulation,

in denominations of five and ten francs. The 600 millions of metal are to be paid out as soon as possible, and the paper currency to that amount destroyed, an operation which will take several years.

Irredentist Demonstrations.—In seeking a good understanding with Austria and Germany, Signor Depretis was obliged, not only to renounce the political support of the Radicals, but to sustain a conflict with the large section of the people who imbibe their political ideas from France, and for the first time to resort to forcible measures for the suppression of Irredentist demonstrations. Violent articles against Austria appeared in the newspapers. The execution of Oberdank for an attempt on the life of the Austrian Emperor was made a pretext for anti-Austrian demonstrations. In December a riot took place before the Austrian embassy in Rome. In January a man was sentenced to three years' imprisonment for throwing a stone at the carriage of the Austrian embassador. On January 4th a printer was arrested for firing with a revolver at the escutcheon over the door of the embassy. Students and professors of the universities took part in unveiling a bust of Oberdank and other demonstrations of the kind. On February 27th some paper bombs were exploded in front of the two Austrian embassies to the Quirinal and the Vatican.

Foreign Relations.—In March, Signor Mancini delivered an important speech, in which he explained his foreign policy, and confirmed the declarations of the Hungarian Premier regarding the triple alliance. He spoke of the coolness which existed previously between Italy and the Central European powers, caused by the suspicion that Italy in every European action sought to acquire some territorial accession, the notion that her army was useless except for defense, and the disquieting effect of the radical ideas of popular sovereignty and the Irredentist aspirations which were supposed to prevail in Italian politics. In the Egyptian question it was first seen that Italy and the central powers had similar interests in European politics. The refusal of Italy to join the armed intervention in Egypt on the invitation of Great Britain was justified on the ground that Italy's interests demanded adherence to the policy of opposition to the dual control and to armed intervention altogether, and to the position that the decision of Egyptian questions should become the common affair of the great powers. The attitude of Italy in this matter, and the action of the Government in regard to Irredentist demonstrations, created a favorable impression, and led to an understanding with the German powers concerning their common interests in the perpetuation of peace and preservation of the existing conditions, though not to a formal treaty. He repelled the suggestion that Italy had been refused admission to the league between the two empires, declaring that a power with 30,000,000 souls, and a magnificent army and navy, had no need to sue for an alliance, and only offers an alliance where she is confident of its being acceptable. The informal alliance has an entirely legitimate and pacific object, and does not involve an estrangement from France, with whom Italy is connected by a community of interests and needs. One of the main points in the triple agreement is that each of the powers shall not only refrain from any hostile action, but avoid courses which would be likely to awaken distrust. The Irredentist agitation, he asserted, is based on no theory or principle; otherwise Italy would be driven to reclaim Corsica, Malta, and the canton of Ticino, as well as Trieste, and the Trentino. The Government, through the attitude taken in the triple agreement, which was a pledge of peace, hoped in time to bring about a better understanding with France, as well as to retain the sympathy of England, which power was designated Italy's constantly loyal friend. The relations with France were asserted to be improving. The treaty of commerce was concluded. In the matter of the abrogation of the capitulations in Tunis, Italy followed the course adopted by Great Britain, and reserved her definitive answer until a tangible proposal was presented, and the details of the system of courts which France wished to substitute for the consular tribunals explained to the Government. In Egyptian affairs Italy had acted in harmony with Germany and Austria, and declined to take part in the expedition, from the consideration that, if the Italian flag had floated beside the English, the French flag would have been unfolded also on the coast of Egypt, which would have led to complications. The minister denied that an alliance with Austria and Germany would be prejudicial to the free internal development of Italy. The Irredentist movement he represented as the work of misled youth or of an anti-monarchic minority, which utilizes Irredentism to create embarrassments for the Government. The Government would advance, he declared, in the direction indicated, and derive from this course augmented strength and security without any sacrifice of constitutional liberty, dignity, or independence.

Italy, as well as England, finally agreed to the abolition of the capitulations in Tunis.

The Chamber.— The new Chamber, chosen under the electoral law passed the previous session, assembled at the end of November, 1882. The Radical wing of the Liberal party was largely re-enforced through the operation of the extended franchise. The Republican and Irredentist faction was determined to exert a popular pressure on the Government and constrain Signor Depretis, if possible, to retrace the course he had taken in the direction of conservative monarchism and abandon his alliance with the Central European powers. The contest was begun in the Parliament by the refusal of a number of deputies to take the oath

of allegiance. The Premier at once brought in a bill disqualifying members who declined to take the oath, or neglected to do so, within two months after their election. Signor Falleroni, after twice refusing, was ordered to leave the chamber by the President. Upon his declining to do so, except on compulsion, he was forcibly ejected. Signor Cavalotti, before swearing allegiance in due form, on taking his seat addressed a circular to all the members of the Chamber, in which he declared that the oath for him had no significance.

Cabinet Crisis.—Since the enunciation of his programme at Stradella, Signor Depretis had commanded an overwhelming majority, made up of the Right, who accepted the programme and renounced all opposition, following Minghetti, while the other leaders retired, as well as the Left, the different sections of which were represented in the Cabinet. The only opposition was composed of the advanced sections of the Left, who, without a definite programme, coquetted with the Republican and Irredentist agitations in order to embarrass the Government, and sought to break up the fusion with the Conservatives and initiate a new era of reforms. The situation created by the alliance with Austria and Germany, and the stringent measures taken by the Government to repress Irredentist agitations, seemed to present the opportunity desired. The Government was represented to the country as suing for the alliance of Germany and Austria, and being rejected, and then finally securing admission to the league on the condition of suppressing irredentism, republicanism, socialism, and such ebullitions of popular feeling. The charge of having again degraded Italy to the condition of a vassal of Austria was more damaging than almost any that could be brought against an Italian ministry. The action of the Government in suppressing meetings and sequestering newspapers was represented as the price of the alliance. The ministry was accused of bringing pressure to bear on the judges to secure the punishment of political offenders. The Advanced Left were determined to call the Prime Minister to account. He was charged with having changed his principles within the last two years, and with pursuing the programme of the Right. Signor Depretis was equally desirous of clarifying the situation, but postponed answering the multitude of interpellations that were announced for week after week. He was not ready for a test of strength until near the middle of May. Then many of his antagonists had withdrawn and the political atmosphere was comparatively quiescent. Signor Minghetti, the leader of the Right, offered his support, and declared that the policy of the Government was a continuance of that followed by him before 1876. This declaration gave Signor Nicotera the opportunity to press the Minister President either to repudiate the interpretation and renounce the proffered support of the Right, or accept it, and thus run the chance of alienating the entire historical Left. Signor Depretis, in his explanation, said that governments in these times have their task rendered difficult by the demand of the peoples for the too rapid accomplishment of reforms and improvements of every sort, which state of things necessitates often repose and reaction. The difficulty of preserving public peace and order was enhanced, the responsibility greater, and yet the wishes of the country must be taken account of and liberty not impaired. In this situation the Government needed the support not of a party, but of all the energies of Parliament and the country. The acts of the Government prove that they have remained true to the programme of the Left. With respect to the rights of association and of assembly, the system of constant and strict vigilance was adopted, and toward Irredentist manifestations a rigorous course was enjoined by circumstances. In extraordinary events an extraordinary responsibility must be assumed. In conclusion, he declared that his actions were not guided by the grouping of parties in the Chamber. Signor Nicotera proposed a vote of want of confidence, which he expected would separate from the Government either the Right or the pure Left. In the explanations which followed it was found impossible for the two more Radical members of the Cabinet to retain their portfolios; but the section of the party which declared against the Government was numerically insignificant. In the vote, which was taken May 18th, the majority for the Government was 348 to 29. Signor Depretis thought it best for the Cabinet to resign, so that it could be reconstituted in accordance with the somewhat more clearly defined political situation. None of the men of the Right were inclined to claim any advantage from the position, while the dissident fraction of the Left was out of the question. The Cabinet was consequently continued after waiting a week or so, Signori Baccarini and Zanardelli dropping out and being replaced by Savelli and Genala. The former, a Neapolitan by birth, was First President of the Court of Appeal at Rome, and had been made a senator in 1882, though without having taken any previous part in politics. The other new minister was a Professor of Political Economy at Florence, had sat in the Parliament, on the Left Center benches, since 1875, and had been an active member of the railroad commission. It was expected that Admiral Acton would resign with the other pronounced Liberals; he was prevailed on, however, to retain his portfolio until he laid it down in November, and was succeeded on the 16th of that month by Vice-Admiral del Santo. The new Naval Minister is one of the most distinguished officers of the Italian navy, but has never occupied himself with political affairs. When the parliamentary struggle was over, the popular agitation suddenly ceased.

Before the Parliament assembled again, on

November 26th, the old Left united in sufficient numbers to form an efficient opposition. About eighty-six deputies met and discussed a programme of which compensation for deputies and revision of the Papal guarantees formed part, while the friendly alliance with Austria and Germany was cordially approved; numbered among them were the ex-ministers Cairoli, Zanardelli, Baccarini, Nicotera, Crispi, and Doda.

Reclamation of the Campagna.—For twelve years the Government has had under consideration the project of rendering fertile, habitable, and healthful the plain surrounding Rome on all sides for a distance of from 20 to 50 kilometres. Several laws were enacted for this object, the last in 1878. This act, which originated in the Senate and was approved by the Chamber, provided for the regulation of the water-courses, which is a necessary preliminary to any attempt at fertilization and colonization. A powerful ring of aristocrats and bankers, who own the lands, and the equally powerful combination of the *Mercanti di Campagna*, who lease them for grazing purposes and derive from them with little trouble a large profit, opposed the improvement. The owners were unwilling to risk the capital necessary for the redemption of these tracts, miscultivated for thousands of years, which contained no villages or communications, were uninhabitable on account of the deadly malaria, were entirely stripped of forest, were subject to overflow from the choked-up streams, and along the coast were covered with marsh. In the session of 1883 Signor Berti, Minister of Agriculture, introduced a bill which was designed to overcome the obstacles placed in the way of the improvement. The Government is warned to press this work forward by the fact that Rome ceased to grow after the first stimulus of the transfer of the Government to the ancient capital was spent, and is outstripped in commercial and industrial activity by other cities. It is believed that when the agricultural supplies can be drawn from the surrounding district, the rural environment made attractive, and the Roman fever extirpated, the capital will take the position which is desirable for the symmetrical development of the kingdom. The new law provides for the expropriation and reclamation by the state of the *latifundia* in which the owners are unwilling to carry out the works of amelioration prescribed by law.

Interpretation of the Guarantee Law.—A ruling of the Court of Appeals, made Nov. 9, 1882, greatly limits what were supposed to be the sovereign rights and immunities of the Pope, and extends the civil and criminal jurisdiction of the courts to the Vatican. An engineer, named Martinucci, claimed payment from the Papal Majordomo for managing the fire-extinguishing arrangements, and of Cardinal Jacobini, as administrator of the Papal estates, for other services in the Vatican. Pope Leo XIII constituted two commissions, composed of priests, as courts of first and second instance, to pass upon these and other such claims. The suitor did not wait for the adjudication of the Papal commission, but brought an action in the civil court. The question of jurisdiction was argued on behalf of the Pope, and both the lower and the appellate court affirmed their competency to entertain the suit, which was dismissed for lack of evidence. The law of Papal guarantees, of May 13, 1871, was defined as applying simply to the exercise of the spiritual authority of the Pontiff, and as guaranteeing only such personal immunities and sovereign rights as appertain to his dignity and as were designated by Mancini "purely rights of honor."

The Ischian Earthquake.—The calamity in the island of Ischia was the most severe that Italy has experienced in many years, and cast a gloom over the country during the summer months. About 3,000,000 francs was collected in aid of the sufferers, besides what was done by the Government. The total number of deaths was stated in the official report to be 1,990. The number injured was 374. At Casamicciola, 625 strangers were killed and 922 natives. At Forio, 305 were killed; at Lacco Ameno, 128. (See EARTHQUAKES AND VOLCANIC DISTURBANCES.)

Geodetic Conference.—The seventh International Geodetic Conference met in Rome, October 15th. Resolutions were adopted in favor of the unification of time by adopting a universal hour and the unification of longitude by adopting a common initial meridian. The prime meridian for reckoning longitude recommended by the conference is Greenwich. It is proposed to count longitude in a single direction, from east to west, both by the ordinary divisions of degrees and by hours and minutes. For railroads, steamships, posts, and telegraphs, it is recommended to adopt a universal hour side by side with local or national hours. For the point of departure for cosmopolitan time the instant of midnight at Greenwich is proposed. Resolutions in favor of the application of the decimal system in the divisions of time and of the quadrant, and of the speedy adoption by Great Britain and other countries of the decimal system of weights and measures, were adopted later. The proposal for the unification of longitudes and hours originated with the United States Government, which was represented at the conference by Messrs. Stilgard and Peirce, of the Coast and Geodetic Survey.

J

JAPAN. (For details relating to area, territorial divisions, the dynasty and members of the imperial family, see the preceding two volumes of the "Annual Cyclopædia.") The census finished Dec. 31, 1882, stated the population to be 36,700,110; 18,598,998 being males, and 18,101,112 females. The population inhabited 7,611,770 houses.

The city of Tokio had, in 1881, 823,557 inhabitants; Osaka, 293,686; Kioto, 239,425; Nagoya, 118,450; Kanagawa, 107,624; and 46 cities had between 20,579 and 78,104 souls.

The government is constituted in part on European models, the Mikado ruling in accordance with the counsels of his regularly appointed advisers. These are the ministry which was established in imitation of European cabinets—the Council of State, of an indefinite number of members; and the Senate, composed of thirty-two members, most of whom are persons who have filled high posts. The Secretary of Legation and *chargé d'affaires ad interim* at Washington is Takahira Kogoro, and the Consul at New York, Takahashi Shinkichi.

The United States Envoy Extraordinary and Minister Plenipotentiary to Japan is Hon. J. A. Bingham, and the American Consul-General at Yokohama, T. P. Van Buren.

Army.—The army comprised in 1883: The guard—two regiments of foot; one squadron of cavalry, and one artillery division of two batteries; the line—14 regiments of foot; two squadrons of horse, and nine artillery divisions, each of two batteries; nine companies of engineers and six platoons of attendants. The total strength of the army on Jan. 1, 1883, was 119,823 men, including 30 generals, 9,335 officers, 109,496 non-commissioned officers and soldiers, 253 officers of the administration of the army, 62 workmen, and 647 cadets.

Instruction is given by a military academy, a military school, a school for instruction in marksmanship and gymnastics, a veterinary school, and a practical engineers' school.

Navy.—The fleet is composed of 31 vessels, with a joint armament of 196 guns, consisting of five ironclads; one turret-ship and three corvettes; 21 steamers and five sailing-vessels. The fleet is manned by 5,551 men.

Finance.—The public indebtedness of Japan, on July 1, 1882, was as follows:

Internal debt bearing between 4 and 10 per cent. interest		$226,048,201
Internal debt bearing no interest		8,774,560
Paper money		105,689,228
Total		$340,462,089
Foreign debt, new 7 per cent. loan		9,309,088
Total debt		$349,771,177
Less reserve fund	$55,854,208	
Other assets	14,652,218	
		70,506,426
Net indebtedness		$279,264,751

The revenue and expenditure during the fiscal year ending June 30, 1883, were as follow:

INCOME.

Duties	$2,600,330
Real-estate tax	42,945,658
Mining-tax	15,152
Tax on northern products	1,258,830
Liquor-tax	10,512,806
Tobacco-tax	348,674
Stamp-tax	3,907,255
State revenue from mines	548,468
State revenue from railroads	989,667
State revenue from telegraphs	28,624
State revenue from the Mint	490,500
From other sources	3,252,963
Total	$66,814,122

OUTLAY.

Interest on debt and sinking fund	$23,293,204
Civil list and appanage	1,398,785
Pensions	449,279
State Council	682,232
Senate	178,500
Department of Foreign Affairs	195,210
" the Interior	489,225
" Finance	669,329
" War	8,605,872
" the Navy	3,161,692
Other departments	4,521,806
Other expenses	23,218,488
Total	$66,814,122

The great difficulty the Government has to grapple with is the outstanding paper money. Since September, 1883, the Government has been selling $600,000 of bonds a month at 75 per cent., and with the proceeds has withdrawn and canceled paper money; but the remedy is not adequate. On April 26, 1882, the paper money in circulation was worth $81,000,000 in the open market; in January, 1883, $109,000,000; and in April, 1883, $96,000,000. In order to intimidate the usurers and speculators, some money-brokers speculating on the fluctuations in the gold premium were arrested in Osaka because they were trying to spread a panic, but such measures have for the time being only rendered matters worse.

In spite of the monetary and financial crisis, and the restricted dealings of the banks and many failures in business, banks on the whole paid good dividends in 1883; thus, the First National Bank declared a dividend of 9 per cent., the Second National Bank 10 per cent., and the Specie Bank 4½ per cent.

Treaty with Corea.—The treaty of commerce between Japan and Corea was published in November, 1883. Corean trade has developed very considerably in Japan of late years. Contrasted with that between Japan and any Western nation, except perhaps England, the direct trade with Corea figures to great advantage, being larger than the combined trade of Japan with Germany, Russia, Italy, and Holland.

Postal Service.—There were in operation in Japan on July 1, 1882, altogether, 5,169 post-offices, and they had dispatched during the twelvemonth 44,729,699 letters, 29,533,936

postal-cards, 2,852,511 Government messages, 18,671,570 newspapers, 952,870 samples and books, 174,646 newspapers to go by the foreign mails, and 1,003 registered letters to go abroad; together, 96,916,235 items of mail matter, against 83,294,010 the previous year. Postal orders were paid out to the amount of $8,521,459. The receipts were $1,660,896, and the expenses $1,470,913.

Telegraphs.—In January, 1882, there were in operation 112 offices, and they had forwarded during the year 1881, altogether, 1,272,756 messages. The length of line was 3,929 miles, and that of wire, 9,345.

Railroads.—On July 26, 1883, the first section of the Great Central railroad was opened to traffic between Tokio (Yeddo) and Koumagai, the distance between the two points being 38 miles. The Great Central is intended to traverse the island of Niphon throughout its entire length. Soon the locomotive will reach Tagasaki, one of the chief cities in the Japanese silk-region; thence the line will extend to Aomori, the northern extremity of the island. The country through which the first section, above alluded to, passes, is extremely fertile, and it abounds in resources of all kinds. The stations of wood have been cheaply constructed, and all the rolling-stock, with the sole exception of the locomotives, is of Japanese build.

The railroads in operation in Japan on Jan. 1, 1884, were the following: from Yokohama to Tokio, 18 miles; from Kobé to Otsu, 58 miles; from Trourouga to Sekigahara, 41 miles; from Tokio to Koumagai, 38 miles: together, 155 miles. There was then being built the line from Tokio to Mayebashi, 81 miles. The first three lines named are Government property; the remainder is owned by a company.

Good roads being few in Japan, traffic suffers from the high freight which the forwarding of goods on the backs of horses and mules involves. Japan declared in 1883, through its Minister of Foreign Affairs, that it was ready to throw open internal trade to foreigners, provided they submit to be held amenable to local legislation; but this would necessitate the revision of treaties, and can not be accomplished without considerable delay.

Prussian Administrators.—Following the example of the Sublime Porte, Japan has asked the Government of Prussia for three officers to be employed in the management of affairs in the interior. They are to bear the same rank and title as members of the Japanese Council of State, and receive a salary equal to that of a cabinet minister in a German kingdom.

Instruction.—The Minister of Public Instruction in Japan published in 1883 his sixth annual report, according to which there were then 26,594 schools, 25,395 of which were public and 1,190 private; increase in the former, 1,115 public and 112 private; together, 1,225 more than in 1882. There were 65,612 teachers, 63,305 of whom were in public and 1,807 in private schools. Increase in the former during the year, 5,702, and the latter, 85; together, 5,787. Number of pupils attending public schools, 2,208,633, and private, 64,541, being an increase of 112,505 in the former, and a decrease of 2,243 in the latter. Increase of pupils attending superior schools, 8,496, and of such institutes, 190; of professors, 361.

Several military men left France for Japan in 1883, to be attached as instructors to the superior military academy.

Merchant Marine.—Japan made great efforts in 1883 to establish a steam merchant navy. Five steamships, three wooden and two iron, were purchased in Japan in that year, at a cost equivalent to £82,000. They have a joint carrying capacity of 4,150 tons, and have since been engaged in the coasting trade for passengers and cargo. In addition to these, Admiral Ito, assisted by two English nautical men, made contracts with eminent ship-builders on the Clyde and Tyne for sixteen steel and iron steamships, having a joint dead-weight carrying capacity of 22,540 tons. They are to be constructed upon the most approved principle, being built under Lloyd's special survey, and classed 100 A 1. Their cost in Japan, with spare shaft and other gear, and very full and complete specifications, will be £450,000, or somewhat under £20 per ton. Two of them will have a speed of thirteen knots when laden, and will carry two large Krupp guns, magazines, etc. Two other vessels will have twelve-knot speed, laden; the remaining vessels being ten-knot steamers, guaranteed. There are to be three 700 and two 800-ton ships, the rest being from 1,150 tons up to 2,500 tons. Two of this new fleet were already in the Japanese coasting trade in November, 1883; another sailed from Glasgow on October 23d; and all will be at their destination by October, 1884. In addition to these twenty-one steamships belonging to it, the "Union Steam Navigation Company" chartered in November, 1883, three steamships from the Government, making a total of twenty-four steamers, of 28,065 tons burden, eleven of which were then running on the coast of Japan. The charter of this company prohibits the acquisition of any but new steamers; but it was permitted to purchase twenty-two sailing-vessels, of 7,000 tons aggregate, belonging to Japanese owners. The Government subscribed $2,600,000 of the capital stock to the company, $3,400,000 being subscribed by over 5,000 merchants.

Cabinet-Woods.—Seven magnificent sorts of cabinet-wood, growing abundantly in the forests of Japan, are expected to enter the world's markets as soon as the railways reach the districts where they are found, which will be at no distant day. They are the sugi (*Criptomeria Japonica*), the ichii (*Taxus cupidata*), the hinoki (*Chamæcyparis obtusa*), the servara (*Chamæcyparis pisifera*), the tsudiakudan (*Thuya*), the benibiakutan (*Juniperus Japonica*), and the kiri (*Paullownia imperialis*).

Silk.—Yokohama silk-merchants resolved in 1883 to found in that port a silk-conditioning establishment, after the Lyons (France) pattern, at a cost of $30,000, an experienced inspector to be engaged in France, and to receive $1 per bale inspected. The Government has been asked for aid to the extent of $511,000, to be spent in premiums to be awarded to the producers of the best silk.

Commerce.—The ensuing tabular statement exhibits the foreign-trade movement in Japan during 1882:

	Yokohama.	Hiogo and Osaka.	Nagasaki.	Hakodadi and Niigata.	Total.
Import.					
Cotton goods	$8,618,000	$2,271,000	$52,000	.....	$10,941,000
Woolens	1,003,000	917,000	7,000	.....	1,927,000
Cotton and wool mixed	953,000	161,000	.....	.....	1,114,000
Metals	1,049,000	717,000	80,000	.....	1,846,000
Sundries	5,621,000	2,662,000	752,000	$8,000	9,043,000
Asiatic products	3,108,000	1,158,000	266,000	.....	4,532,000
Merchandise	$20,352,000	$7,886,000	$1,157,000	$8,000	$29,403,000
Specie	6,060,000	3,987,000	100,000	.....	10,147,000
Total	$26,412,000	$11,873,000	$1,257,000	$8,000	$39,550,000
Export.					
Raw silk	$17,661,000	$1,000	.....	.....	$17,662,000
Silk-worm eggs	122,000	.....	.....	.....	122,000
Tea	4,472,000	2,471,000	$85,000	.....	7,028,000
Copper	257,000	589,000	2,000	.....	848,000
Tobacco	68,000	16,000	12,000	.....	96,000
Vegetable wax	2,000	301,000	22,000	.....	325,000
Camphor	1,000	612,000	254,000	.....	867,000
Coal	.....	26,000	1,150,000	.....	1,176,000
Dried fish	266,000	328,000	573,000	$126,000	1,293,000
Rice	20,000	858,000	772,000	.....	1,650,000
Sundries	3,807,000	1,548,000	438,000	378,000	6,171,000
Total	$26,676,000	$6,750,000	$3,208,000	$504,000	$17,238,000
Specie	4,701,000	2,119,000	77,000	.....	6,897,000
Total	$31,377,000	$8,869,000	$3,285,000	$504,000	$44,185,000

In 1882 Yokohama exported silk, 2,585,069 pounds, against 1,801,180 in 1881; tea, 14,215,768 pounds, against 14,980,894; and imported twist, 20,222,208 pounds, against 24,537,210 in 1881; and woolens, 5,221,402 yards, against 8,147,599 yards; cotton goods, 42,534,296 yards, against 29,775,592; petroleum, 9,007,925 gallons, against 4,616,855; and sugar, 48,140,026 pounds, against 41,062,918.

AMERICAN TRADE WITH JAPAN.

FISCAL YEAR.	Imports from Japan into the United States.	Domestic exports from the United States to Japan.
1880	$14,510,834	$2,525,758
1881	14,217,600	1,440,146
1882	14,439,495	2,534,265
1883	15,098,890	3,375,885

While the general import from Japan into the United States, and particularly of tea, has been on the whole steady, that of raw silk has doubled in a few years. The domestic export to Japan has fluctuated widely, because the Japanese market is easily overloaded with merchandise of all kinds from all quarters, causing at times a sudden check to importation, on account of heavy losses in Japan on imports. American goods have not been exempt from these influences. Instead of merchandise, the United States shipped, in 1881, $2,468,535 specie, to pay for tea and silk; the next year only $453,362 specie, because it was then more profitable to ship goods on a bare market.

JEWELL, Marshall, an American merchant and statesman, born in Winchester, N. H., Oct. 20, 1825; died in Hartford, Conn., Feb. 10, 1883. His father was a tanner and currier, and Marshall, after receiving a fair education, became an apprentice in his establishment. Thence he went to Boston, where he studied electricity, especially in its application to telegraphy. After leaving Boston, he became a telegraphic operator in Rochester, N. Y. Being of a somewhat roving disposition, he went next to Akron, O., thence to Columbia, Tenn., and thence to Jackson, Miss., when, at the age of twenty-three, he superintended the construction of telegraph lines between Louisville and New Orleans. The next year, 1849, he became general superintendent of the New York and Boston Telegraph lines, but gave it up in order to join his father in manufacturing leather belting at Hartford. The business prospered, and on the death of his father, not long after, he became head of the firm of Marshall Jewell & Co.

In 1859 Mr. Jewell visited Europe and made a careful inspection of the tanneries in England and France. He repeated his visit the following year, and with good results. Going abroad again, in 1865, he occupied a year in traveling, including a trip to parts of Asia and Africa.

Mr. Jewell's political career was begun in 1868, at which time he was a candidate for Governor of Connecticut, on the Republican ticket. He was elected, and served from May, 1869, to May, 1870. He was elected a

second time, and served from May, 1871, to May, 1872. Still a third canvass in his favor was successful, and he served another year. Immediately upon the close of his third term, in 1873, he was appointed by President Grant United States Minister to Russia, where he was of great service to American interests. Discovering that frauds were practiced, in imitations of American manufactures (as sewing-machines, scales, axes, etc.), he negotiated with the Russian Government a trade-mark treaty, and carried it through to completion. He also investigated the process by which "Russia leather" is produced, and ascertained that the peculiar scent which this leather has is obtained by the use of birch-bark tar in tanning. The result has been that this kind of leather is now manufactured in the United States as successfully as in Russia.

In July, 1874, he returned home and was appointed Postmaster-General. He began at once a policy of reform against notorious "straw bids" and other corrupt practices in Texas and Alabama, and succeeded in suppressing a number of these. He established fast mail trains, and avowed his determination to conduct the department on proper business principles, as he or any other upright merchant would do in his own affairs. The "ring" politicians were active against him, and finally succeeded in their efforts; so that, early in July, 1876, the President demanded his resignation.

He returned to Hartford, and devoted himself again to business. He was placed at the head of the Republican National Committee, was very earnest and efficient in discharging its duties, and spoke frequently to large meetings in the Garfield campaign. Besides the business of his own firm, he was interested in numerous other enterprises with his brothers, and held posts of trust in several banks, insurance companies, etc. He was a Congregationalist from early life and retained his communion with that denomination to the last. He entertained a deep and sincere hatred of slavery, and during the civil war he gave all his influence, and expended freely of his means, to support the Union.

In 1852 he married Esther, daughter of William Dickinson, of Newburg, N. Y., who, with two daughters, survives him. He was a man of fine personal appearance, an able speaker, and of genial spirit and manners. His health was always good, and he had hardly known by personal experience what sickness was. He died of acute pneumonia.

JORDAN CANAL. See ENGINEERING.

JUTE AND JUTE-BUTTS. The jute and jute-butts received in this country from India and China are the fibers of two Indian annuals of the order *Tiliaceæ*, *Corchorus capsularis* and *C. olitorius*. What is imported here under the name of "Mexican jute" is not the fiber of any species of Corchorus, though it probably belongs to an allied family. The jutes differ from what is known commercially as "hemp" in the soft and woolly character of the fiber, its ability to absorb moisture readily, its inferior strength, and the difficulty of bleaching it without destroying the tenacity and durability of the goods made from it. Still, for many purposes it is valuable. The Indian jute

JUTE (*Corchorus capsularis*).

is cultivated on the lower lands along the Ganges and elsewhere in India, flourishing best in a rich alluvial soil and in a hot, moist atmosphere, with a heavy rainfall. In 1872 there were 921,000 acres of it under cultivation in India. The acreage has since undoubtedly increased materially, as the export demand is constantly enlarging, that of Great Britain and the United States alone having nearly doubled in ten years, and the number of manufactories of gunny-bags and other jute goods in India having greatly multiplied. In India the jute grows to the height of from five to ten feet, and the stalks are of the thickness of a man's finger. The plant is utilized in many ways. The tops serve for pot-herbs, the leaves for manure, the stalks for fences, the seed for oil-cake, the butts and roots for cheap bagging and paper, and the inner bark for fiber. It has been long and successfully cultivated in China, and attempts have been made to acclimatize it in Algiers, in Mississippi and Louisiana, in Australia, and in England. In the last two countries the attempt has been unsuccessful; in the former, on account of the uncertainty of the rainfall, in the latter from the coolness of the climate. It may be safely said that no climate where the mean temperature of May, June, July, and August is lower than 68° Fahr., and the rainfall for the same months less than twenty inches, can be sure of a uniformly successful crop of jute.

Mississippi, Louisiana, and indeed the Gulf States generally, seem to fulfill these conditions, and may be considered suitable ground for the cultivation of this crop. Mississippi has made a successful beginning. It has been as-

certained, by repeated experiment, that on good lands at least one ton of fiber of the best quality, worth at the plantation not less than four cents a pound, can be produced from an acre at a cost of not more than $13 for cultivation; while the cutting, hauling, decorticating, washing, and baling of the fiber, on an estimated yield of fifteen tons of green stalks to the acre, can be done in the best way at a cost of less than $30 an acre, the net yield being a full ton of fiber prepared for use.

These processes are conducted by American machines recently invented, and tested in the field, by means of which three persons perform more labor in a day than 160 Hindoo laborers who strip and wash the fiber by hand. This estimate of a cost of $43 to the acre, against a value of $80 for a ton of the fiber, is claimed to be excessive, but it leaves a net profit of $37 to the acre. To this are to be added the value of the leaves for manure, of the seed for planting and for oil-cake, and of the butts and roots for cheap bagging and paper. Our manufacturers are importing these jute-butts at not less than $35 a ton, and the yield would be more than a ton to the acre. The manufacturers pay from $95 to $100 a ton for the best India jute, and the quality produced in Mississippi is acknowledged to be superior in every respect to the best imported.

For the total export from India and China we are obliged to go back about ten years, though we know that there has been a great increase both of production and export since that time. In 1872–'73 the amount exported was 354,046 tons, of which Great Britain took 197,773 tons, and exported 87,752 tons of this amount, reserving 160,000 tons for her own use. In 1880 the export to Great Britain had reached 295,329 tons, valued at $21,850,160. In the same year there were imported into the United States—the greater part from India, but some also from China and Mexico—82,471 tons, valued at $5,075,945. If the other countries which took jute direct from Calcutta in 1872 had increased in anything like the same proportion, the total export from India must have been at least 550,000 tons, and the value nearly $50,000,000. The export from China, at one time very considerable, has within a few years nearly ceased. That from Mexico has increased, and in 1882 its export to the United States alone was 19,233 tons, worth, at the custom-house valuation, $2,061,939. The entire import into the United States in that year was 84,186 tons, having a custom-house valuation of $4,710,192; a large portion being butts, 53,198 tons, valued at $1,965,644, against 30,988 tons of jute of a value of $2,744,548.

The jute is used for burlaps, for the finer qualities of bagging, for twilled and other stair-carpeting, for what is known as "wool-twine," and as an adulterant of the lower-priced broadcloths, the so-called "Japanese silks," for imitations of Irish linen and of low-priced French silks, and for admixtures in all the finer carpets—Axminster, Kidderminster, Brussels, and Venetian. It takes colors very readily, and exhibits the most brilliant dyes for a time, but they are not permanent. In Dundee, Scotland, there are about 100 jute-mills, employing 20,000 workmen and manufacturing 90,000 tons of jute annually.

But, large as is the consumption of jute both here and in Europe, that of jute-butts (the lower portion of the stalks and the roots of the jute-plant) is still greater. Our importation of jute-butts in 1882 was more than 53,000 tons. Twenty years ago these were not considered of any value. The manufacturers of jute in India, who received from the cultivators the whole plant (except perhaps the leaves and tops), found the butts so much of a nuisance that they compelled their hands to carry a quantity of them home every day and burn them. At last, about 1866, a captain of an East India ship, finding himself at Calcutta without a full return cargo, was induced to take on board eighty or ninety tons of this worthless stuff as ballast. On arriving at New York he told a friend, who was a rope-maker, of his ballast, and induced him to take it off his hands and experiment with it for a coarse paper-stock. The experiment was successful, and it was found that it could be spun also into a yarn, from which a coarse bagging could be made; and a demand was created for it. That rope-making firm, L. Waterbury & Co., of Brooklyn, N. Y., now use 9,000 tons annually, and with the other firms in the same line of business in that city consume 16,000 tons of jute-butts, almost a third of the whole importation, all of which is used either in the production of cotton-baling cloths or the so-called "Manila" paper. The same firms and some others in that city use nearly 10,000 tons of jute. Here may be mentioned a singular blunder of the census of 1880. The importation of raw jute and jute-butts in that year was 82,471 tons, and its value (custom-house valuation) $5,075,945. To any one who has any idea of the relation of our importation of raw materials to our manufactures, it must be evident that this large importation was brought to our ports for the purpose of being manufactured; yet the census of 1880 reports that the entire manufacture of jute and jute goods in the United States was only $696,982, and that the raw material used was but $447,094, only about one twelfth of the amount imported. Of these amounts, $415,788 of raw material, and $650,560 of finished product, were said to be used and produced in the State of New York, and all of this in the city of Brooklyn. At that time a single firm in that city were producing from jute-butts $1,044,000 worth of bagging and paper, and from jute about $600,000 more, and the whole production of jute bagging and jute goods in that city alone was more than $2,600,000, while the cost of the raw material was nearly $2,000,000. There can be no doubt that the entire amount

imported was consumed; for in 1881, 1882, and 1883 the importation was still greater in quantity, though the proportion of the cheaper jute-butts was increased and there was a consequent falling off of values. Raw jute has always been subject to a considerable duty, usually about $15 a ton (under the new tariff, 20 per cent. *ad valorem*, which is about $18); but jute-butts were admitted free till 1876, when a duty of $6 a ton was placed on them, and this was reduced to $5 by the new tariff. That both jute-butts and jute can and should be produced here seems evident, in view of the facts mentioned and the rapidly-growing demand for them for so many kinds of manufactures. At this time, the bagging for the entire cotton-crop of the United States is made from jute-butts; and all the so-called "Manila" wrapping-paper is made from the same material.

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KANSAS. State Government.—The following were the State officers during the year: Governor, George W. Glick, Democrat; Lieutenant-Governor, D. W. Finney; Secretary of State, James Smith; Treasurer, Samuel T. Howe; Auditor, E. P. McCabe; Attorney-General, W. A. Johnston. Judiciary, Supreme Court: Chief-Justice, Albert H. Horton; Associate Justices, David J. Brewer and D. M. Valentine.

Legislative Session.—The Legislature convened on the 9th of January, and adjourned on the 8th of March. On the 23d of January, Preston B. Plumb, Republican, was re-elected United States Senator by a vote of 38 against one in the Senate, and 89 against 34 in the House. There were passed 167 bills, of which the Governor signed 162, vetoed four, and allowed one to die in his hands. One of the vetoed bills was passed over the veto. Among the acts passed were the following:

An act to provide for the health and safety of persons employed in and about coal-mines; an act declaring drunkenness a misdemeanor and prescribing punishment; an act relating to the issue of stock by corporations; an act forming new congressional districts; an act concerning railroads and other common carriers.

The railroad law provides for three railroad commissioners, who have power to examine the books and papers of the corporation and its officers under oath. Some of the more important provisions of this act follow:

No railroad company shall charge or receive a rate in excess of three cents per mile for the transportation of any passenger who is over twelve years of age, nor in excess of half that sum per mile for the transportation of any passenger of the age of twelve years or under.

The commissioners shall have the general supervision of all railroads in the State operated by steam, and all express companies, sleeping-car companies, and all other persons, companies, or corporations doing business as common carriers in this State, and shall inquire into any neglect or violation of the laws of this State by any person, company, or corporation engaged in the business of transportation of persons or property therein, or by the officers, agents, or employés thereof, and shall also, from time to time, carefully examine and inspect the condition of each railroad in the State, and of its equipment and the manner of its conduct and management, with reference to the public safety and convenience. Whenever in the judgment of the railroad commissioners it shall appear that any railroad corporation or other transportation company fails to comply with the terms of its charter or the laws of the State, or whenever, in their judgment, any repairs are necessary upon its road, or any addition to its rolling-stock, or any addition to or change of its stations or station-houses, or any change in its rates, or any change in the mode of operating its road and conducting its business, is reasonable and expedient, said commissioners shall inform such corporation of the improvement and changes which they adjudge to be proper.

The commissioners shall, on or before the first Monday in December in each year, make a report to the Governor of their doings for the preceding year and of the condition of every railroad in the State, as to capital stock, value of property, indebtedness, condition of track and machinery, etc.

No railroad company shall charge, demand, or receive from any person, company, or corporation, for the transportation of any property or for any other service, a greater sum than it shall at the same time charge, demand, or receive from any other person, company, or corporation, for a like service from the same place, or upon like condition and under similar circumstances.

It shall be unlawful for any railroad company to make any contract or enter into any stipulation with any other railroad company running in the same general direction, by which either company shall directly or indirectly agree to divide, in any manner, the joint earnings upon freight transported.

Statistics.—The State had in 1872, 2,476,862 acres of land in cultivation; in 1882, 11,043,399 acres, an increase of 8,566,517 acres. The live-stock of the State in 1872 was valued at $30,013,898; in 1882 it had increased to $83,874,539, or a permanent increase of wealth of $53,860,641. Four fifths of the area are still uncultivated.

In 1883 the product of winter wheat was 28,958,884 bushels, with an average yield of 19·56; spring wheat, 1,066,052 bushels, with an average yield of 13·47; total, 30,024,936 bushels, and an average yield of 19·25 bushels per acre. This is within 5,000,000 bushels of the great crop of 1882.

The average yield of rye per acre was 18·79 bushels, and the total product 5,084,391 bushels. The corn-crop amounted to 182,084,526 bushels, an average of 39·13 bushels an acre.

The State Board of Railroad Commissioners have obtained an official statement of the amount voted, in cash and bonds, by the several counties of the State, to aid in building railroads. The total is $9,504,385.

The last report of the State Board of Railroad Assessors shows that there are 4,315 miles of railway in Kansas.

Farmers' Convention.—The Kansas State Farm-

ers' Alliance met in January, and put forth resolutions declaring that the farmers were oppressed by the railroads and other corporations; calling for the passage of a law fixing a schedule of freight and passenger rates; and denouncing the railroad-commissioner system.

Temperance.—The Kansas State Temperance Union met in January, and adopted resolutions declaring that the State had no moral or legal right to license any wrong, but should enact only such laws as will promote what is right and prohibit what is wrong; that the prohibition of the sale of intoxicating liquors as a beverage is a great moral question, and is right in principle and in practice; and that there should be no attempt by the Legislature to strike prohibition from the Constitution by resubmitting an amendment for that purpose, or the repeal or emasculation of the law already enacted for the enforcement of it.

KENTUCKY. State Government.—The following were the State officers during the year: Governor, Luke P. Blackburn, succeeded by J. Proctor Knott, Democrats; Lieutenant-Governor, James E. Cantrill, succeeded by J. R. Hindman; Secretary of State, James Blackburn, succeeded by James A. McKenzie; Treasurer, James W. Tate; Auditor, Fayette Hewitt; Superintendent of Public Instruction, J. D. Pickett; Attorney-General, P. W. Hardin; Register of Land-Office, Ralph Sheldon, succeeded by J. G. Cecil; Commissioner of Agriculture, Charles E. Bowman, succeeded by John Davis; Insurance Commissioner, L. C. Norman. Judiciary, Court of Appeals: Chief-Justice, T. F. Hargis; Associate Justices, Thomas H. Hines, William S. Pryor, and Joseph H. Lewis.

Party Conventions.—The Democratic State Convention met in Louisville on the 16th of May. The following ticket was nominated:

For Governor, J. Proctor Knott; for Lieutenant-Governor, J. R. Hindman; for Attorney-General, P. W. Hardin; for Auditor, Fayette Hewitt; for Treasurer, James W. Tate; for Superintendent of Public Instruction, Joseph Desha Pickett; for Register of the Land-Office, J. G. Cecil.

The platform declared for revenue reform, revision of the State Constitution, and encouragement of immigration.

The Republican State Convention met in Lexington on the 23d of May, and nominated the following ticket:

For Governor, Thomas Z. Morrow, of Pulaski county; Lieutenant-Governor, Speed S. Fry, of Boyle county; Attorney-General, Lewis C. Garrigus (who served in the Confederate army), of Logan county; Auditor, Leroy R. Hawthorne, of Campbell county; Superintendent of Public Instruction, J. P. Pinkerton, of Carter county; Register of the Land-Office, the Rev. J. W. Asbury (colored), of Cynthiana county; Treasurer, Edwin Farley.

The resolutions adopted declared for free schools for all the children in the State; adjustment of the tariff; amendment of the State Constitution; encouragement of immigration; and repeal of the tobacco-tax; arraigned the Democratic State government for practically nullifying the criminal and penal laws, and for the bad condition of the prison and charitable institutions; and commended the administration of President Arthur.

Election Returns.—At the election in August, the Democratic ticket was successful, Knott receiving 133,615 votes, and Morrow 89,181. The following table gives the vote for the other officers:

	Democratic.	Republican.
Lieutenant-Governor	132,334	87,378
Attorney-General	132,289	86,028
Auditor	132,249	85,348
Treasurer	131,908	84,670
Superintendent of Public Instruction	130,798	85,776
Registrar of Land-Office	132,158	71,677

At this election, 169,173 persons were returned under the law as entitled to vote for a Constitutional Convention, but only 73,704 votes were cast in favor of calling one. The Legislature to meet in 1884 will consist of 38 Democrats and 5 Republicans in the Senate, and 89 Democrats and 11 Republicans in the House. On the 4th of September Gov. Knott took the oath of office.

General Condition.—In his message to the Legislature of 1884, Gov. Knott says:

During the two years which have elapsed since the last meeting of the General Assembly, our homes have been free from the horrors of pestilence, and our households gladdened by the blessings of plenty; our fields have been crowded with bountiful harvests, and our products have found ready and remunerative markets; capital has been profitably employed, and labor fairly rewarded; our resources have been greatly developed, and our commerce largely increased; money has been abundant, and private indebtedness among our people comparatively small; nearly 150 miles have been added to our railways, and the products of our mines increased over 250 per cent.; while our official statistics for the last fiscal year show by far the largest production of our various agricultural staples since 1877, and in some of them an increase upon the yield of even that exceptionally prolific year.

Notwithstanding these gratifying evidences of an extraordinary popular prosperity, however, there has been but little change, and certainly no improvement, in the condition of our State finances during the period to which I have referred.

Finances.—At the close of the fiscal year ending Oct. 10, 1881, there was in the Treasury, to the credit of the revenue proper, and available for the ordinary expenditures of the State government, a balance of $51,118.28; but, as the loan of $300,000, which had been negotiated under the provisions of the act of 1880, in order to meet a previous deficiency, had not been paid, there was really a deficit at that time of $248,881.72.

The fiscal year having been changed by law so as to begin on the first day of July, and the increased expenses unavoidably incident to a session of the Legislature having rendered it necessary to effect an additional loan of $200,000, the condition of the fund available for general expenditures from Oct. 11, 1881, to

June 30, 1882, and from July 1, 1882, to June 30, 1883, was as follows:

Balance in the Treasury Oct. 10, 1881	$51,118 28
Receipts, including bank loan of $200,000	1,251,199 97
Total receipts and balance, as above	$1,302,318 25
Disbursements deducted	1,254,253 28
Left a balance of	$48,064 97
Borrowed from bank, as above	$200,000 00
Balance in the Treasury deducted	48,064 97
Shows deficit for the year	$151,935 03
Due banks prior to Oct. 10, 1881	300,000 00
Total deficit June 30, 1882	$451,935 03
Balance in the Treasury June 30, 1882	$48,064 97
Receipts	1,622,328 30
Total receipts and balance on hand	$1,670,393 27
Disbursements deducted	1,661,768 94
Balance June 30, 1883	$8,624 33
Due banks June 30, 1883	$500,000 00
Less balance in Treasury	8,624 33
Actual deficit	$491,375 67

There has been no change in the condition of the sinking fund since the last session of the General Assembly. The bonded debt of the State, as then, consists of 174 6-per-cent. military bonds, amounting to $174,000, besides $6,894 in old railroad scrip, and bonds of 1835 and 1841, which have been so long overdue, and unheard of for so many years, that they are supposed to have been long since lost or destroyed, and will probably never be presented for redemption. The resources of the sinking fund are also substantially as at that time. Cash in the Treasury, June 30, 1883, $174,000.30; 406 shares of stock in the Bank of Louisville, quoted at the close of the fiscal year at $31,262, and stock in turnpikes estimated at $500,000, amounting in all to $705,266.30. In regard to the financial situation the Governor says:

The difficulty has been, and is still to be found, to a great extent, in our grossly defective system of assessment, rendered still more inefficient by the negligent and unsatisfactory manner in which it is administered. The mere fact that the entire valuation of all descriptions of taxable property within the Commonwealth for the last fiscal year amounted to but little over $374,500,000, is sufficient to satisfy any intelligent mind at all conversant with the subject that there must have been the grossest disparity between its market and the assessed value. Our real property alone is worth double that sum. Inequalities and undervaluation in assessment are, however, by no means the only evils in our revenue system. Much of our revenue is annually lost through exonerations, delinquent lists, and sales of land for taxes, though the latter evils have been lessening from year to year, and may possibly reach their minimum under a rigid enforcement of our present statutes. Besides this, large amounts of property have from time to time been exempted from taxation by private acts of the Legislature, which should be restored to the tax-list. There are also various lottery companies plying their business in our State, and claiming to exercise their privileges under the sanction of our laws, who yet pay not a doit into the Treasury. If they have a legal existence, they should be taxed; if they have not, they should be promptly suppressed.

The Penitentiary.—The condition of the convicts within the prison-walls has been greatly improved within the past three years. Those in the hands of contractors are not so well off. The total number is over 1,000, while there are cell accommodations for only 744. The Governor recommends the erection of a branch penitentiary in the western part of the State, with a capacity of 700 or 750 cells.

State Charities.—The State charitable institutions are the Eastern, Central, and Western Lunatic Asylums, the Institution for the Education and Training of Feeble-Minded Children, the Institution for the Education of the Blind, and the Institution for the Education of Deaf-Mutes.

The whole number of insane patients treated during the year was 2,143. The percentage of cures upon the admissions during the year was as follows: in the Eastern Asylum, 34·09; in the Central, 60·03; in the Western, 46·61.

The number of blind pupils during the year was 78. The average attendance of deaf-mute pupils was 140.

It appears that of the 1,049 idiots maintained last year by the Commonwealth, at a cost of $65,471, over 54 per cent. were in four judicial circuits. "While the cause," says the Governor, "of this singular and startling difference in the development of idiocy in different localities in the same Commonwealth may be a matter of curious speculation, it may be well for practical legislators to inquire whether it has resulted, to any extent, from the importation of such unfortunate beings with the view of having them pensioned upon the bounty of the State."

Education.—The school census, white and colored, and the corresponding apportionments out of the school fund for the payment of teachers and commissioners, for the year ending June 30, 1884, were as follow:

Whole number of white-pupil children	500,824
Whole number of colored-pupil children	92,470
Total	593,294
Apportioned to white children, $1.40 per capita	$701,153 60
Apportioned to colored children, $1.40 per capita	129,458 00
Total	$830,611 60
Amount apportioned to commissioners	42,069 11
Grand total	$872,069 71

During the session of 1881–'82 the number of matriculates in the State College was 320, and in that of 1882–'83, 316. Instruction is given under twelve professors and two assistant professors.

In March a call was issued for a conference or convention of the friends of popular education in Kentucky, to be held in Frankfort on the 5th of April, "for the purpose of considering the situation and organizing a quicker movement against illiteracy. With a quarter of a million of people in the Commonwealth who can not even read, with the average pay of teachers only $22 per month, with the aver-

age value of 60 per cent. of our school-houses $78, and with not less than 180,000 children who do not attend any school, it is time for us to awaken to the magnitude of the question and to make an effort for a change. Let all whose hearts are warmed with a love of the little ones come to the conference and assist in creating a public sentiment that will secure what we want."

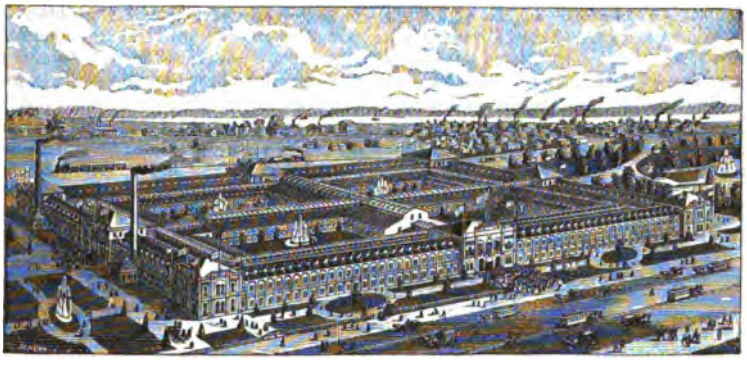
The convention met at the appointed time and remained in session two days. It was numerously attended by representative men, irrespective of race, of party, and of vocation, from many parts of the State. Resolutions were adopted and an address to the people of the State was issued. Federal aid was approved of, and it was recommended that State taxation be supplemented by local taxation.

A twofold obstacle was recognized. "That difficulty appears first in the lack of adequate means to maintain or to employ competent teachers, and to construct suitable houses in which to gather and teach the children; and second, though not least, the lethargy of the people, as evinced by the fact that in 1881 there were 265,891 white children of pupil age in the State whose parents and guardians would not, or did not, send them to the common schools; and, furthermore, that 84 counties of the State reported, through their commissioners, as being stubbornly opposed to local taxation for educational purposes."

A committee was appointed to report needed amendments to the common-school law to an adjourned meeting to be held in Louisville. The report was made on the 20th of September. It recommended amendments designed to reduce the school age from six to twenty years to six to sixteen years, to lengthen the school term, increase the wages of teachers, and raise the per capita by local taxation and other means from $1.40 to $3. The following figures from the United States census of 1880, widely published in the State, have been a potent element in arousing public attention to the necessity of improving the educational facilities of the Commonwealth:

Total population of Kentucky	1,648,690
Total population who can not read, ten years of age and over	258,186
Percentage of total population who can not read	15·66
Total white population	1,377,179
Total white population who can not write, ten years of age and over	214,497
Percentage of total white population who can not write	15·58
Total colored population	271,511
Total colored population who can not write, ten years of age and over	133,895
Percentage of total colored population who can not write	49·31

Railroads.—The Railroad Commissioners report that on the first day of December, 1883, there were in operation in the State 1,936.99 miles of railway, which, however, do not penetrate one third of the counties in the Commonwealth. Several roads are in process of construction, while others have been projected for the near future. The Henderson bridge is in course of construction, but will not be completed before the spring of 1885. It appears from the report that the business of the various railroads in the State is increasing, and their general condition improving. Steel rails are being substituted for iron, and many facilities for travel and traffic furnished which have not existed heretofore. The Chesapeake and Ohio and Southwestern has reduced its local passenger fares to three cents a mile, making that the uniform rate with all the principal lines throughout the State. The commissioners assessed the railroad property at $35,000,000.



SOUTHERN EXPOSITION BUILDING, LOUISVILLE, KY.

Geological Survey.—On this subject the Governor says:

No expenditure of money has ever been made by our State government which has been more prolific of good results than that which has been devoted to our Geological Survey. Previous to its inauguration comparatively little was known of our varied and almost illimitable resources, and consequently the vast tide of capital as well as intelligent labor, seeking new fields of employment, had drifted past us, and thousands of the most enterprising of our own people had been lured to other States supposed to have been more liberally endowed by nature with the various elements of material prosperity. But, although prosecuted under great disadvantages, it has demonstrated that our resources of every description are enormous; that our soils are adapted to the profitable growth of the widest

range of agricultural products known to the temperate zone; that one half of our primitive forests abounding in the greatest variety of valuable timbers is still untouched; that our State abounds in the richest iron-ores to be found in the world; and that our coal area is more extensive than that of the great State of Pennsylvania, or of Great Britain and Ireland combined, underlying nearly 13,000 square miles.

The Southern Exposition.—The Southern Exposition opened at Louisville, Aug. 1st, and continued one hundred days. The subscribers to the capital stock numbered 1,722, and the total amount of subscriptions was $258,122. A building covering thirteen acres and costing $300,000 was erected. The number of exhibits was 1,500, classified in groups and departments, arranged with reference to similarity of character. Premiums in money to the amount of $6,750 were distributed for displays of cotton. In the general awards, 109 diplomas, 221 certificates, and 478 medals were adjudged to successful exhibitors. The total number of admissions was 770,048. The best attendance was from Sept. 10th to Oct. 20th, at which time several other expositions in different parts of the country were in operation. Although the Southern Exposition was not wholly satisfactory in a financial way, the stockholders felt warranted in increasing their capital to $500,000, with the intention of holding another exhibition in 1884.

Miscellaneous.—A National Convention of Colored Men met in Louisville Sept. 24th, and discussed and acted upon civil and political rights, education, and labor.

KEROSENE, IMPROVED TEST FOR DANGEROUS. The dangerous properties of kerosene are derived from the presence in the oil of the extremely volatile constituents, benzine and naphtha. These substances are easily ignited, and alone, or mixed in small proportion with kerosene, readily emit vapors which are highly inflammable, and which form with air an explosive mixture. Kerosene is safe only when it will not yield these dangerous vapors at any temperature which it is liable to assume. This temperature depends partly upon the warmth of the place where the oil is kept or used, and partly upon the heat of the burning wick warming the oil in the reservoir of the lamp. It has been found by experiment that the maximum increase of temperature of the oil in a burning lamp is about 16° Fahr. It is possible for oil to have in summer a temperature of from 90° to 100° in the unlighted lamp, and in winter a still higher temperature, if the lamp is near a stove or an open fire. Hence the lowest temperature at which an oil may evolve inflammable vapors and be considered safe must be put at 116°, or, better still, at 120° Fahr. In testing oils a distinction is made between the *flashing-point* and the *burning-point*. The flashing-point is the temperature at which, when the oil is slowly heated, the vapors escaping from it will first take fire with a slight explosion when a lighted match is passed just over the surface of the liquid. It marks the temperature at which the oil becomes dangerous. The heating may be continued till a point is reached at which the oil will take fire and continue burning by itself. This is known as the burning-point. The flashing-point is easily altered by trifling variations in the conditions, as in the quantity of oil used, the rate of heating, the range of temperature through which the oil is heated, and the distance above the surface at which the match passes. The burning-point, upon which the ordinary fire-test is based, is of little value; for not only does it always lie above the flashing-point, but it bears no simple relation to the latter, and the determination of it gives really no clew to the temperature at which the oil becomes unsafe. Some twenty-five different instruments have been proposed for ascertaining the lowest flashing-point of a sample of oil, all of which are based upon the principle of slowly heating the oil till its vapor will take fire on passing a match or other igniting agent over it. Engler and Haas have laid down seven principles to which all such testing apparatus and experiments with them, to be of any value, must conform, viz.: 1. The quantity of oil must be the same in all experiments. In the Saybolt tester, which has been adopted by the New York Produce Exchange (Fig. 1), variations of one twenty-fifth of one inch cause differences of some degrees in the flashing-point; 2, the oil must be heated

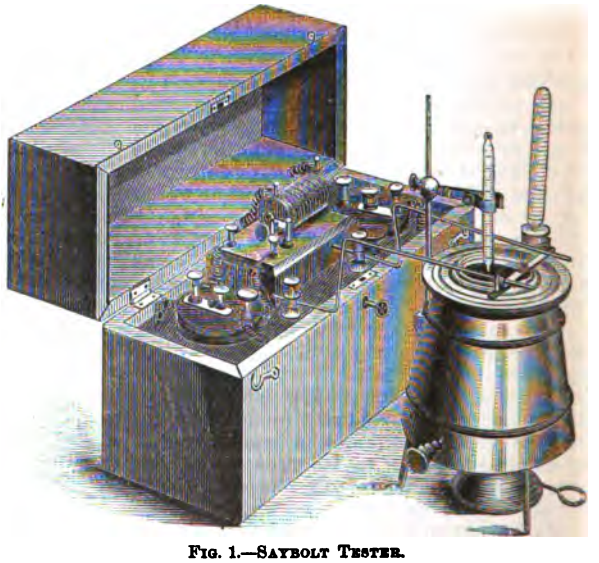


FIG. 1.—SAYBOLT TESTER.

slowly and uniformly; 3, the temperature of the oil at the beginning of the test must be at least 18° Fahr. below its flashing-point as approximately determined; 4, the size and intensity of the flame or spark used to produce the flash must be the same in all tests; 5, the distance of the flash-flame or spark from the surface of the oil must be the same; 6, the time during which the flame or spark acts must be reduced to a minimum; 7, on account of the practical purpose for which the tests are made, the conditions under which the vapor is formed in the tester should correspond as closely as possible to those which determine its formation and explosion in lamps, etc. It can not be affirmed that all the conditions under which explosions in lamps are liable to occur are provided for in any single testing instrument of this class. The oil-reservoirs in our lamps differ much in size and shape, and hence have different capacities. The quantity of oil, its surface, and the amount of air in the reservoir with which the vapor mingles, are constantly changing while the lamp is in use and the danger is greatest. Moreover, it is not only in quietly-burning lamps that accidents occur. Probably half the accidents are due to upsetting or breaking, and the oil, which would have been safe otherwise, gives rise to explosion or flames under these more dangerous circumstances. It is important to employ, if possible, a test which shall indicate the lowest temperature at which, under any conditions, inflammable vapors can be evolved, rather than be satisfied with trusting to a method which merely proves an oil safe under certain arbitrary conditions. Certain testers have been proposed, based upon the principle of ascertaining the elastic force or tension of the vapor of the oil at a given temperature: they are deceptive and worthless, for it has been conclusively shown that no definite relation exists between the vapor-tension and the flashing-point of a kerosene. Another method of testing, by distillation, is exact, and has the additional advantage of defining the quality of the oil as an illuminating material. The oil is separated by the distillation into three fractions: a light oil distilling below 150° C.; illuminating oil, coming over between 150° and 270° C.; and a heavy oil which boils above 270° C. The first fractional distillate represents the dangerous constituents, and should not exceed 5 per cent. of the whole. The heavy oil affects the freedom with which kerosene burns, and should not form more than 15 per cent. of the whole.

Victor Meyer has introduced an exact method of determining the minimum flashing-point of kerosene by saturating the air with oil-vapor at the test-temperature. His apparatus consists of a glass cylinder which is partly filled with oil, is stoppered with a cork through which a thermometer passes, and is heated by plunging into warm water. When the temperature is reached at which the test is to be made the cylinder is briskly shaken, the stopper is removed, and a small flame is introduced. Flashing-points obtained by this plan are considerably lower than those given by the former methods, and are largely independent of the conditions that are considered essential to the accuracy of the determinations by them. Haas's method is the same in principle as Meyer's, but employs an electric spark instead of a flame, and the apparatus is difficult of construction and costly. Both methods require repeated shaking of the oil as the heat rises from degree to degree, which is very inconvenient. Liebermann has made a simple, successful, and practical application of the same principle in his tester, in which, Fig. 2, the

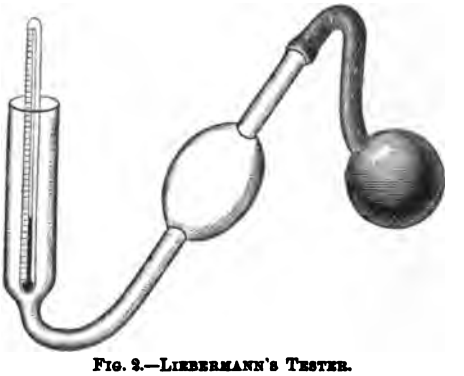


FIG. 2.—LIEBERMANN'S TESTER.

saturation of air is accomplished by forcing an air-current through the oil as it is warmed from degree to degree; and the test is made by bringing a small flame to the mouth of the oil-holder at the same instant. A tester of still more simple construction than this has been proposed. It consists, as shown in Fig. 3, of a glass cylinder closed at one end by a

FIG. 3.—IMPROVED TESTER.

cork, through which a small, bent tube, *d c b*, passes. Just within the cork the end of this tube contracts to a small orifice. The other end of the tube connects with a small bellows, or other source of slightly compressed air, the flow of which can be regulated by the pinch-

cock *c*. The best results by this method are obtained when the diameter of the cylinder is between 2½ and 4 centimetres. The length is of no consequence, provided the cylinder is always filled with oil to within the same distance of the top; but different results are given when the distance of the oil, or rather of the foam into which its surface is broken by the air-current, is allowed to vary. Prof. John T. Stoddard, of Smith College, makes in "The Popular Science Monthly" the following statements and directions concerning the use of this method: 1. The oil-cylinder should have a diameter of from 2½ to 4 centimetres. It may be of any convenient length, provided it holds, when filled for the tests, not less than 50 c. c. of oil. With a diameter of 2½ centimetres, the length should be at least 16 centimetres; with a diameter of 3 centimetres, the least length should be 13 centimetres. A good tester may be made from the chimney of a student-lamp by cutting off the lower part a little above the contraction; or the whole chimney may be made to serve as an oil-cylinder by corking the large end. 2. The cylinder is filled with oil to a point where, when the air-current is running, the top of the foam is 4 or 6 centimetres below the mouth. 3. The oil is heated by means of a water-bath, into which the cylinder is plunged to the end of the oil. The temperature of the oil should not rise faster than two degrees a minute. 4. Air is forced through the oil with such velocity that about (and not less than) one centimetre of foam is maintained on the surface, and a flash-jet is brought to the mouth of the cylinder at every half degree, or oftener, in the vicinity of the flashing-point. The approach of the flashing-point is announced by the appearance of a faint blue halo of burning vapor around the flash-jet; this finally detaches itself and runs down to the surface of the oil. The reading of the temperature at this instant gives a trial flashing-point, which may be a little too high if the current of air has been running too long, or not long enough. The test should now be repeated with a fresh sample of oil, the air-current being started in full strength, not less than one nor more than three or four minutes before the flash occurs. It is well, however, to let a very slow current of air bubble through the oil from the time that the tester is put in the water-bath, so as to secure regularity in the heating of the oil. This method has the advantages of simplicity in apparatus and manipulation, and of securing a trustworthy determination of the *lowest* flashing-point, independently of arbitrary conditions. We have seen that 116° Fahr. is the very lowest flashing-point consistent with safety. The statements so often put forth, that our best kerosenes are "150° or 160° test" oils, are misleading; for it has reference, not to the flashing-point, but to the fire-test, or burning-point, which, as has been shown, gives little indication of the character of the oil. The best oils sold flash at about 109° Fahr., while the cheaper grades have much lower flashing-points —at least as low as 85° Fahr.

KNIT CLOTHS. The idea of knitting other fabrics than hosiery is not new, but the application of the process to the production of certain kinds of cloth has been, by improved machinery, brought apparently to perfection very recently.

Fig. 1 (see page 467) gives a good idea of a machine imported from England in 1883, and set up in Philadelphia by John E. Hanifen & Co. Portions of it were patented in England by Joseph Belshaw, as long ago as 1857; and virtually the same thing was produced by two other English inventors, and by them assigned

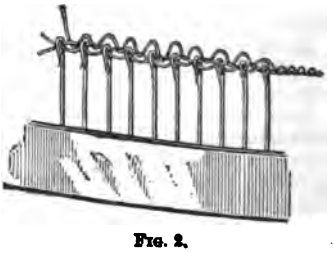


Fig. 2.

to John Kent, who patented it in the United States in 1872, but his patent has been contested.

Fig. 2 shows (enlarged) a section of the

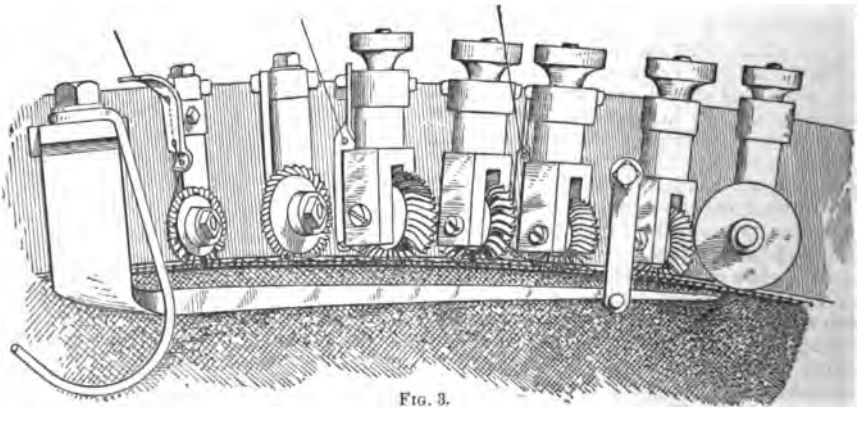


Fig. 3.

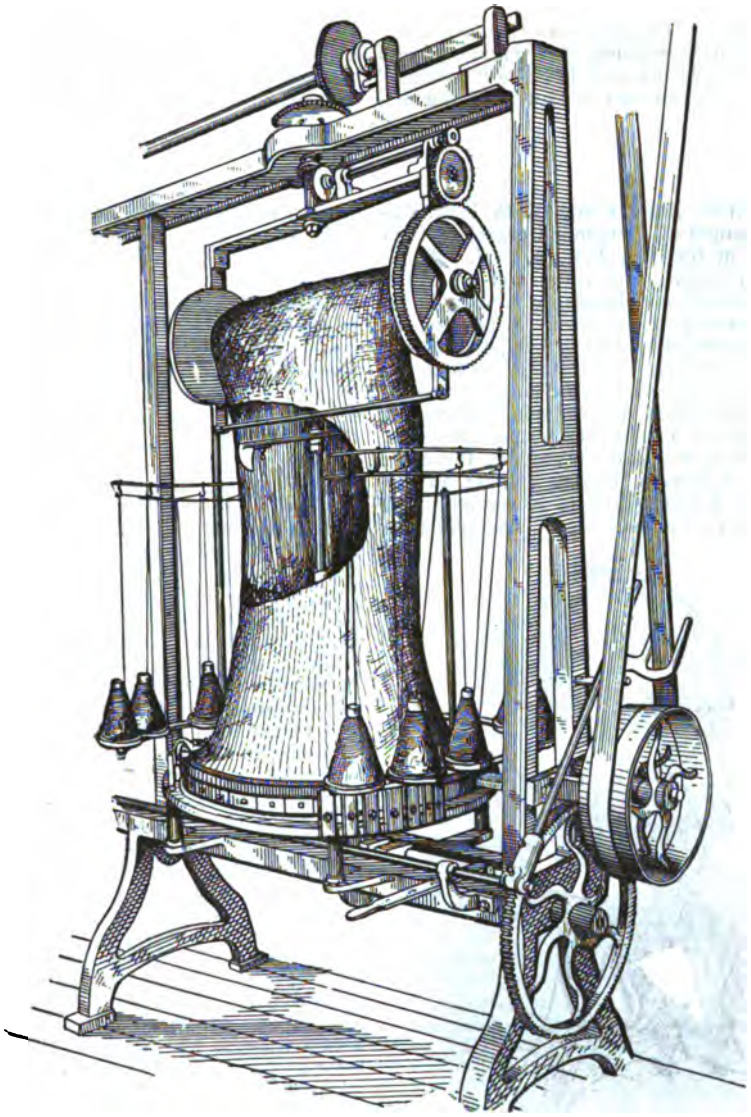


FIG. 1.

needles, which are really hooks with a spring barb. These, about 1,000 in number, are fastened around the edge of the circular horizontal bed, and revolve with it.

At two, three, or four points, just outside of the circumference of the horizontal bed, are fixed groups of wheels, like those shown (enlarged) in Fig. 8 (see page 466). The various threads used pass from the bobbins upward over hooks and then downward to and under these knitting-wheels. When the bed revolves, the needles act as cogs, and turn the knitting-wheels. These wheels consist of wings or flanges, so shaped as alternately to lift and depress the threads on and between the needles, thus forming the stitches. The fabric is knit in the form of a large tube, and is constantly drawn up and wound upon the reel overhead, which also revolves horizontally with the bed. In the engraving a portion of the fabric is represented as cut away, to show the stretcher inside. The fabric is knit with a seam running its entire length, and with a knife the operator cuts it open along this seam, thus reducing it to a flat piece of cloth, of "double width."

The most obvious advantage in the use of this machine, over a loom, is in the matter of speed. It has a smooth, continuous, rotary motion, instead of the constantly interrupted alternating motion of a shuttle, and will produce about double the amount of cloth in a

given time. It is claimed also that the fabric is superior in smoothness of face and evenness of texture. Almost any kind of "backing" can be put on (all in one motion of the machine), from a smooth, hard one, to that of the heaviest, shaggy overcoating. Its productions include stockinet, ladies' cloakings, overcoatings, cheviots, astrakhans, and suitings.

L

LANSDOWNE, Henry Charles Keith Petty Fitzmaurice, Marquis of, Governor-General of Canada, born in England, Jan. 14, 1845. He received his education at Eton, and at Balliol College, Oxford, and became a captain in the Yeoman cavalry of Wiltshire. His father, the fourth marquis, died July 5, 1866, and he succeeded to the titles and estates. His minor titles are: in the peerage of Great Britain—Earl of Wycombe, of Chipping Wycombe, county Bucks; Viscount Caln and Calnstone, county Wilts; and Lord Wycombe, Baron of Chipping Wycombe, county Bucks; in the peerage of Ireland—Earl of Kerry and Earl of Shelburne; Viscount Clanmaurice and Fitzmaurice; Baron of Kerry, Lixnaw, and Dunkerron. His mother is Baroness Nairne in her own right; holding the title once held by the Scottish poetess who wrote "The Land o' the Leal," though she is not her descendant.

MARQUIS OF LANSDOWNE.

The Marquis was one of the Lords of the Treasury from 1868 to 1872, and then became Under-Secretary for War, which office he held two years. He was appointed Under-Secretary for India when Mr. Gladstone became Premier in 1880, but retired at the end of two months, because he disagreed with the Government's Irish policy. In October, 1883, he succeeded the Marquis of Lorne as Governor-General of Canada. He married, in November, 1869, the youngest daughter of the Duke of Abercorn, and has two sons and two daughters.

LASKER, Eduard, a German statesman, born in Jaroczin, Posen, Oct. 14, 1829; died in New York, Jan. 5, 1884. He was the son of a Jewish merchant, was admitted to the bar in Berlin, and passed three years in travel. On returning, he took a place in the Berlin City Court in 1856, and in 1858 became associate justice. He resigned this post in 1870, to practice as an attorney. Later he accepted the post of syndic in the mortgage registry office of Berlin. He was elected deputy in the Prussian Chamber in March, 1865, and reelected in July, 1866. In 1866 he left the Progressive party and became, in association with Karl Twesten, the founder of the National-Liberal party. From 1868 to 1873 he represented Magdeburg in the House of Deputies. From 1875 to 1879 he was member for Frankfort-on-the-Main. From 1866 till his death he was a member of the Reichstag.

During the nineteen years of Lasker's parliamentary activity there was no important legislative work in which he did not take part, and which does not bear the impress of his knowledge and acumen. His activity centered in the Reichstag. The unification of the German Empire on a representative basis was the aim of his life. In the civil consolidation of the empire he bore as conspicuous a part as Count Bismarck in the sphere of dynastic and international politics. The great National-Liberal party, of which he was the chief founder and parliamentary leader, united the liberal thought and hopes of the country in favor of the policy of Bismarck, until the time when by its support the latter had overcome the particularist elements and was able after the French war to repudiate the constitutional doctrines which he had temporarily professed. A great part of Lasker's work was inconspicuous. He was regularly placed on the committees, in the Reichstag and the Prussian Landtag, which were appointed for the elaboration of legislative projects, and was almost invariably intrusted with the preparation of the report. In taking so prominent a part in the practical work of legislation, however, he became the most frequent speaker and proponent of motions in the legislative halls, and thus was a familiar figure before the public. Next to the ideal of German unity, the cause of legality and the abolition of arbitrary police powers was nearest to his heart. In this sense the Prussian local administrative regulations

were amended through his efforts. The same idea underlay the German industrial laws of 1869, one of the greatest works of his life. In 1870 he introduced in the Reichstag the proposition to incorporate Baden in the North German League. In 1871 and the following years he advocated the proposition to extend clause 13 of the fourth article of the German Constitution to the civil law, i. e., to unify the laws of the German states into a single imperial system. In this most important part of the process of transforming the league into a nation, the chief share of the labor fell to him, and it remains a monument of his historical services and juristic genius. The imperial judiciary, which was introduced in October, 1879, the common code of procedure, and the codification of the civil laws, were the laborious fruits of this period of his life.

Lasker's greatest popular success was his speech in the Prussian Diet on Feb. 7, 1873, in which he laid bare the jobbery of promoters and the corruption of officials in connection with railroad concessions and the establishment of fraudulent joint-stock companies. His proposal of an investigating commission was approved; and, although the results of the investigation were not equal to the expectations, the law officers of the Government kept a closer watch, the commercial schemers and their aristocratic accomplices took alarm, and no such scandals have occurred again.

Lasker's literary labors were confined to contributions in Oppenheim's "German Year-Book" on Prussian constitutional history (1875). He wrote the report of the National-Liberal party for the legislative period of the Reichstag, Customs Union, and Prussian Diet ending in 1870, which was printed in Hirth's "Annals" (1870). His most noted oratorical efforts outside the legislature were a commemoration address on Karl Twesten.

In support of Prince Bismarck's policy, Lasker advocated fixing the military budget for seven years in advance. He also co-operated in bringing about the Prussian administrative law. Yet as soon as the aims of the Chancellor ran counter to his political principles, he opposed the Government with such energy that it often came to parliamentary duels between the two. Their differences were repeatedly composed, until Bismarck's economical and tax-reform projects separated them completely. Lasker upheld the free-trade principle, and withdrew from the National-Liberal party. In the sitting of May 2, 1879, he declared that by the economical policy of the Government he was driven into the opposition. He was followed in August, 1879, by Forkenbeck, Stauffenberg, and Bamberger, and the Secessionist fraction became the most vigorous antagonists of the Chancellor.

Dr. Lasker's health was broken for two or three years before his death, and he visited Switzerland several times, with the object of recuperating his strength. From the same motive he came to America late in the summer of 1883, and made a tour of the United States. After visiting his brother in Texas, he returned to New York. On the evening of his death he dined with Mr. Seligman, the banker, and was taken with heart-disease while walking back to his boarding-place, dying in a stable, into which he was taken, directly after the arrival of a physician.

LAW, CONSTITUTIONAL. International Arbitration.—An important opinion on this subject was rendered by the United States Supreme Court on Jan. 7, 1884, in the noted Weil and La Abra cases. In 1868 a convention between the United States and Mexico was concluded for the arbitration and payment of claims of citizens of either country against the Government of the other. These claims were to be submitted to a mixed commission, which was to take testimony and hear counsel. The treaty stipulated that "the President of the United States and the President of the Mexican Republic hereby solemnly and sincerely engage to consider the decision of the commissioners conjointly, or of the umpire, as the case may be, as absolutely final and conclusive upon each claim decided upon by them or him respectively, and to give full effect to such decision without any objection, evasion, or delay whatever." It was then provided that the aggregate of all the amounts awarded to citizens of one country should be deducted from the aggregate awarded to citizens of the other, and that $300,000 of the balance should be paid by the debtor to the creditor Government within twelve months from the close of the commission, and that the rest should be paid in yearly installments, not exceeding $300,000 each. It was further stipulated:

> The high contracting parties agree to consider the result of the proceedings of this commission as a full, perfect, and final settlement of every claim upon either Government arising out of any transaction of a date prior to the exchange of the ratifications of the present convention; and further engage that every such claim, whether or not the same may have been presented to the notice of, made, preferred, or laid before the said commission, shall, from and after the conclusion of the proceedings of the said commission, be considered and treated as finally settled, barred, and thenceforth inadmissible.

When the work of the commission ended, it was found that the balance against Mexico was about $1,200,000, and annual payments were duly made by that Government in accordance with the terms of the convention. Among the claims presented to the commission by citizens of the United States was one of Benjamin Weil for cotton alleged to have been seized in Mexico and confiscated by the Mexican authorities in 1864, and one by the La Abra Silver Mining Company for the loss of a mine in the State of Durango, which the owners alleged they were forced to abandon in consequence of illegal acts on the part of Mexican officers. On Oct. 1, 1875, an award of $489,810 was made in favor of Weil against Mexico, and on December

27th following one of $688,041 was made in favor of the La Abra Company.

In June, 1878, Congress passed an act providing that as often as installments should be received from Mexico, the amount should be distributed pro rata among the claimants to whom awards had been made. Meanwhile Mexico had made representations to the Government at Washington that the Weil and La Abra claims were fraudulent, and that the awards had been obtained through perjured testimony, and asked that a rehearing be had in these cases. In view of this representation, Congress, in the act of June, 1878, requested the President to investigate these charges of fraud, and provided that if he should find "the honor of the United States, the principles of public law, or considerations of justice and equity" required that the awards should be opened, and the cases re-tried, it should be lawful for him to withhold payment until the cases should be re-tried in such manner as the United States and Mexico might agree.

During the year 1879 President Hayes caused an investigation to be made, and the conclusions reached were thus given in the report of Mr. Evarts, then Secretary of State:

1. I conclude, therefore, that neither the principles of public law nor considerations of justice or equity require or permit, as between the United States and Mexico, that the awards in these cases should be opened and the cases retried before a new international tribunal or under any new convention or negotiation respecting the same between the United States and Mexico.

2. I am, however, of opinion that the matters brought to the attention of this Government on the part of Mexico do bring into grave doubt the substantial integrity of the claim of Benjamin Weil and the sincerity of the evidence as to the measure of damages insisted upon and accorded in the case of the La Abra Silver Mining Company, and that the honor of the United States does require that these two cases should be further investigated by the United States to ascertain whether this Government has been made the means of enforcing against a friendly power claims of our citizens based upon or exaggerated by fraud. If such investigation should remove the doubts which have been fairly raised upon the representations of Mexico, the honor of the United States will have been completely maintained. If, on the other hand, the claimants shall fail in removing these doubts, or they should be replaced by certain condemnation, the honor of the United States will be vindicated by such measures as may then be dictated.

3. The executive government is not furnished with the means of instituting and pursuing methods of investigation which can coerce the production of evidence or compel the examination of parties and witnesses. The authority for such an investigation must proceed from Congress. I would advise, therefore, that the proofs and the conclusions you shall come to thereon, if adverse to the immediate payment on these awards of the installments received from Mexico, be laid before Congress for the exercise of their plenary authority in the matter.

A copy of this report was sent to Congress by the President April 15, 1880. It concluded as follows: "Unless Congress should now make this disposition of the matter, and furnish thereby definite instructions to the department to reserve further payments upon these awards till the conclusion of such investigation, and to take such further order with the same thereafter as Congress might direct, it would appear to be the duty of the Executive to accept these awards as no longer open to reconsideration, and proceed in the payment of the same, pro rata with all other awards under the convention." No decisive action was then taken by Congress, and, after the close of the session, payments were made on these awards, by direction of President Hayes, the same as on the others. When President Garfield came into office, four installments had been paid to the Weil and La Abra claimants, and a fifth was ordered by him to be paid. After Mr. Arthur became President, he ordered the matter to be again investigated, and "believing that said award was obtained by fraud and perjury," he directed further payments to be withheld, and negotiated a treaty with Mexico for a re-trial of the cases. This treaty is still (March 15, 1884) pending in the Senate. Suits were thereupon brought by the claimants to compel Secretary Frelinghuysen to pay to them their share of the sixth installment paid to the United States by Mexico on Jan. 31, 1882. They contended:

1. That the awards under the convention vested in the several claimants an absolute right to the amounts awarded them respectively, and that this right was property which neither the United States alone, nor the United States and Mexico together, could take away; and,

2. That, if this were not so, the action of President Hayes, under the fifth section of the act of 1878, was conclusive on President Arthur, and deprived him of any right he might otherwise have had to investigate the charges of fraud presented by the Mexican Government, or to withhold from the relators their distributive shares of any moneys thereafter paid to the Secretary of State under the authority of the first section.

The issue thus raised was, first, as to the power of two governments to reopen an arbitration of claims of citizens under a compact providing that the decision of the commission should be "absolutely final and conclusive," and "without appeal"; that the Presidents of the two republics should "give full effect to such decisions without any objection, evasion, or delay whatsoever," and that the final action of the commission should be considered "a full, perfect, and final settlement of every claim" passed upon; and, second, as to the power of the President under such compact to withhold payment of awards pending the negotiations for a treaty providing for a re-trial of the claims. The contention relates to unpaid installments. The Supreme Court held that the two governments were free to make a new agreement, and that the President of the United States had the right to withhold payment of awards alleged to have been fraudulently obtained.

Referring to the strong language of the convention, that the decision of the commission should be "absolutely final and conclusive," etc., the Court said that this is to be construed

as language used in a compact of two nations "for the adjustment of the claims of the citizens of either against the other," and entered into to "increase the friendly feeling existing between the republics."

No nation treats with a citizen of another nation except through his government. The treaty, when made, represents a compact between the governments, and each government holds the other responsible for everything done by their respective citizens under it. The citizens of the United States having claims against Mexico were not parties to this convention. They induced the United States to assume the responsibility of seeking redress for injuries they claimed to have sustained by the conduct of Mexico, and as a means of obtaining such redress the convention was entered into, by which not only claims of citizens of the United States against Mexico were to be adjusted and paid, but those of citizens of Mexico against the United States as well. By the terms of the compact the individual claimants could not themselves submit their claims and proofs to the commission to be passed upon. Only such claims as were presented to the Governments respectively could be "referred" to the commission, and the commissioners were not allowed to investigate or decide on any evidence or information except such as was furnished by or on behalf of the Governments. While the claims of the individual citizens were to be considered by the commission in determining amounts, the whole purpose of the convention was to ascertain how much was due from one Government to the other on account of the demands of their respective citizens. As between the United States and Mexico the awards are final and conclusive until set aside by agreement between the two Governments or otherwise. Mexico can not, under the terms of the treaty, refuse to make the payments at the times agreed on if required by the United States. This she does not now seek to do. Her payments have all been made promptly as they fell due, as far as these records show. What she asks is the consent of the United States to her release from liability under the convention on account of the particular awards now in dispute, because of the alleged fraudulent character of the proof in support of the claims which the United States were induced by the claimants to furnish for the consideration of the commission.

Chief-Justice Waite, who wrote the opinion, proceeded as follows:

As to the right of the United States to treat with Mexico for a retrial, we entertain no doubt. Each Government, when it entered into the compact under which the awards were made, relied on the honor and good faith of the other for protection as far as possible against frauds and impositions by the individual claimants. It was for this reason that all claims were excluded from the consideration of the commission except such as should be referred by the several governments, and no evidence in support of or against a claim was to be submitted except through or by the Governments. The presentation by a citizen of a fraudulent claim or false testimony for reference to the commission was an imposition on his own Government, and if that Government afterward discovered that it had in this way been made an instrument of wrong toward a friendly power, it would be not only its right, but its duty, to repudiate the act and make reparation as far as possible for the consequences of its neglect if any there had been. International arbitration must always proceed on the highest principles of national honor and integrity. No technical rules of pleading as applied in municipal courts ought ever to be allowed to stand in the way of the national power to do what is right under all the circumstances. The cases cited by counsel all relate to the disposition to be made of the proceeds of international awards after they have passed beyond the reach of the Governments and into the hands of private parties. The language of the opinions must be construed in connection with this fact.

The first section of the act of 1878, said the Chief-Justice, authorizes and requires the Secretary of State to receive the moneys paid by Mexico under the convention, and to distribute them among the several claimants, but it manifests no disposition on the part of Congress to encroach on the power of the President and Senate to conclude another treaty with Mexico, with respect to any or even all the claims allowed by the commission, if in their opinion the honor of the United States demand it. At most, it only provides for receiving and distributing the sums paid without a protest or reservation, such as, in the opinion of the President, is entitled to further consideration. It does not undertake to set any new limits on the powers of the Executive. By the fifth section of that act the President is expressly authorized to refuse payment, and to negotiate a new treaty if he deemed it expedient. It is clearly within his discretion to withhold all further payments until the diplomatic negotiations between the two governments are concluded. "The United States, when they assumed the responsibility of presenting the claims of their citizens to Mexico for payment, entered into no contract obligations with the claimants to assume their frauds and to collect on their account all that, by their imposition of false testimony, might be given in the awards of the commission. As between the United States and the claimants, the honesty of the claims is always open to inquiry for the purposes of fair dealing with the government against which, through the United States, a claim has been made."

Legal-Tender Acts.—On March 3, 1884, the United States Supreme Court rendered an opinion sustaining the validity of the legal-tender acts passed by Congress both during and since the war. It holds that Congress has the constitutional power to make United States notes a legal tender in payment of private debts, either in time of war or in time of peace.

This is the third time that the court has decided this question within fourteen years. It was first called upon to consider the constitutionality of the legal-tender legislation of Congress in the case of Hepburn against Griswold, decided during the session of 1869–'70, and reported in vol. viii of Wallace's Reports. The court then decided that the acts of 1862 and 1863, making United States notes a legal tender in payment of all debts public and private, were unconstitutional so far as they applied to debts contracted before the passage of those acts. The question as to pre-existing debts was the only one raised by the case, and the only one expressly decided. The reasoning of the court, however, went to the extent that Congress had no constitutional power to make United States notes a legal tender, either for

past or future debts. The court affirmed the following principles:

There is in the Constitution no express grant of legislative power to make any description of credit currency a legal tender in payment of debts.

The words "all laws necessary and proper for carrying into execution" powers expressly granted or vested have, in the Constitution, a sense equivalent to that of the word laws, not absolutely necessary, indeed, but appropriate, plainly adapted to constitutional and legitimate ends, which are not prohibited, but consistent with the letter and spirit of the Constitution; laws really calculated to effect objects intrusted to the Government.

Among means appropriate, plainly adapted, not inconsistent with the spirit of the Constitution, nor prohibited by its terms, the Legislature has unrestricted choice; but no power can be derived by implication from any express power to enact laws as means for carrying it into execution, unless such laws come into this description.

The making of notes or bills of credit a legal tender in payment of pre-existing debts is not a means appropriate, plainly adapted, or really calculated to carry into effect any express power vested in Congress, is inconsistent with the spirit of the Constitution, and is prohibited by the Constitution.

This case was decided in conference, Nov. 27, 1869. The court then consisted of eight justices. The decision was concurred in by five justices—Chase, Nelson, Grier, Clifford, and Field. Three dissented—Swayne, Miller, and Davis. The opinion, which was written by Chief-Justice Chase, was announced from the bench, Feb. 8, 1870. Justice Grier resigned his seat Feb. 1, 1870, and on the 18th of that month Justice Strong was appointed his successor. On April 10, 1869, Congress had passed an act, to take effect in December following, increasing the number of justices from eight to nine. Justice Bradley was appointed as the additional member on March 21, 1870.

Before the court as thus constituted the question of the power of Congress to issue legal-tender notes was again brought in the suits of Knox against Lee, and Parker against Davis, reported in vol. xii of Wallace's Reports, under the title of "Legal-Tender Cases." The cases were decided May 1, 1871, and the opinion delivered Jan. 15, 1872. The court reversed its decision in Hepburn against Griswold, and held that Congress had constitutional power to make United States notes a legal tender for debts contracted both before and after the passing of the acts.

The opinion of the court was written by Justice Strong, and concurred in by Justices Swayne, Miller, Davis, and Bradley. The minority in Hepburn against Griswold, re-enforced by the two new justices, Strong and Bradley, became the majority in the second case. Chief-Justice Chase and Justices Nelson, Clifford, and Field, who with Justice Grier had formed the majority in the first case, became the minority in the second.

The acts whose constitutionality the court was then called upon to consider were passed during the war. The opinion of the majority laid great stress upon this fact, and the fact that there was then a public exigency that does not exist in time of peace. It pointed out that the legal-tender legislation was, in the opinion of Congress and the executive department of the Government, a necessary war measure and essential to the preservation of the nation. Under these circumstances the majority had no doubt that Congress had under the Constitution an implied war power to issue the legal-tender notes. But the Court seemed to imply that in other times and other circumstances a different principle might govern. It said: "This brings us to the inquiry whether they [these acts] were, when enacted, appropriate instrumentalities for carrying into effect or executing any of the known powers of Congress, or of any department of the Government. Plainly, to this inquiry, a consideration of the time when they were enacted, and of the circumstances in which the Government stood, is important. It is not to be denied that acts may be adapted to the exercise of lawful power, and appropriate to it, in seasons of exigency, which would be inappropriate at other times."

This decision did not have the usual effect of a judgment of a court of last resort—that is, of putting at rest the legal question involved. By many public men it was regarded as recognizing in Congress a vast power for mischief, and by not a few constitutional lawyers it was looked upon as an unsound interpretation of the Constitution. The fact that the Court had within a little more than a year reversed its own decision in so important a matter, that the reversal had been brought about by the concurrence of the two new members, that the judgment rested on a bare majority of one, and was vigorously opposed by four of the nine justices—these and other considerations it was asserted naturally had the effect of causing no little popular dissatisfaction with the judgment, and lessening its weight as an authority. Moreover, it was argued that what the Court had decided in the second case, was the question as to the power of Congress to issue legal-tender notes in time of war, and as a war necessity. But as the war began to recede into the past, the question loomed up whether Congress had the same power in time of peace, and this question assumed practical importance when Congress exercised the power by passing the act of 1878 providing for a re-issue of legal-tender notes.

These considerations led to a movement to bring the issue before the Supreme Court for a third time, in the hope of securing a reversal of the principle affirmed in the legal-tender cases in 1871, and with the view of at least finally settling the law one way or the other. A proposition to prepare a test case was made to Gen. Benjamin F. Butler, early in 1879, by Hon. S. B. Chittenden, a Republican member of Congress from the State of New York. The proposition was accepted, and a suit was accordingly brought in the United States Circuit Court for the Southern District of New York in the name of Augustus D. Juilliard, a citizen of

New York, against Thomas S. Greenman, a citizen of Connecticut. The complaint alleged that the plaintiff had sold the defendant 100 bales of cotton for the agreed price of $5,122.90; that the defendant had offered in payment $22.90 in gold and silver coin, and $5,100 in United States legal-tender notes which had been issued during the war and re-issued under an act of Congress of May 31, 1878; and that the plaintiff had refused to accept these notes as valid legal tender. The case was carried to the United States Supreme Court, which gave its decision March 3, 1884, sustaining the constitutionality of the act of 1878, as well as of the legal-tender acts previously passed, and holding that Congress has the constitutional power to make the treasury notes of the United States a legal tender in payment of private debts in time of peace as well as in time of war. The opinion was prepared by Justice Gray, and concurred in by seven of his associates. Justice Field alone dissented, and gave an elaborate opinion in support of his views.

The opinion of the Court is substantially given in what follows: A constitution, establishing a frame of government, declaring fundamental principles, and creating a national sovereignty, and intended to endure for ages and to be adapted to the various crises of human affairs, is not to be interpreted with the strictness of a private contract. The Constitution of the United States, by apt words of designation or general description, marks the outlines of the powers granted to the national legislature, but it does not undertake, with the precision and detail of a code of laws, to enumerate the subdivisions of those powers, or to specify all the means by which they may be carried into execution. The breadth and comprehensiveness of the words of the Constitution are nowhere more strikingly exhibited than with regard to the powers over revenue, finance, and currency. That instrument declares that Congress shall have power—

To lay and collect taxes, duties, imposts, and excises, to pay the debts and provide for the common defense and general welfare of the United States; but all duties, imposts, and excises shall be uniform throughout the United States;

To borrow money on the credit of the United States;

To regulate commerce with foreign nations and among the several States and with Indian tribes;

To coin money, regulate the value thereof and of foreign coin, and fix the standard of weights and measures.

The section which contains the grant of these and other principal legislative powers concludes by declaring that Congress shall have power "to make all laws which shall be necessary and proper for carrying into execution the foregoing powers, and all other powers vested by this Constitution in the Government of the United States, or in any department or officer thereof."

By the settled construction and the only reasonable interpretation of this clause the words "necessary and proper" are not limited to such measures as are absolutely and indispensably necessary, without which the powers granted must fail of execution; but they include all appropriate means which are conducive or adapted to the end to be accomplished, and which in the judgment of Congress will most advantageously effect it. In the case of McCulloch *vs.* Maryland (vol. iv, Wheaton's Reports), in which the power of Congress to incorporate a bank was affirmed by the Supreme Court, notwithstanding the Constitution does not enumerate, among the powers granted, that of establishing a bank, or creating a corporation, Chief-Justice Marshall said: "We admit, as all must admit, that the powers of the Government are limited, and that its limits are not to be transcended. But we think the sound construction of the Constitution must allow to the national legislature that discretion, with respect to the means by which the powers it confers are to be carried into execution, which will enable that body to perform the high duties assigned to it, in the manner most beneficial to the people. Let the end be legitimate, let it be within the scope of the Constitution, and all means which are appropriate, which are plainly adapted to that end, which are not prohibited, but consist with the letter and spirit of the Constitution, are constitutional." The rule of interpretation, says Justice Gray, thus laid down, has been constantly adhered to and acted on by this court.

The power of Congress to emit bills of credit, to incorporate national banks, to provide a currency for the whole country, is firmly established by decisions of the court. The court has also decided that the power "to borrow money on the credit of the United States" is the power to raise money for the public use on a pledge of the public credit, and may be exercised to meet either present or anticipated expenses and liabilities of the Government. It includes the power to issue, in return for the money borrowed, the obligations of the United States in any appropriate form of stocks, bonds, bills, or notes. Congress has authority to issue these obligations in a form adapted to circulation, from hand to hand, in the ordinary transactions of commerce and business. It may provide for their redemption in coin or bonds, and may make them receivable in payment of debts to the Government. The several States are prohibited from coining money, emitting bills of credit, or making anything but gold and silver coin a tender in payment of debts. But no intention can be inferred from this to deny to Congress either of these powers. Congress is neither expressly authorized nor expressly forbidden to emit bills of credit, but the Supreme Court has conceded to it the power to emit bills of credit, and of making every provision for their circulation as currency, short of giving them the quality of legal tender for private debts.

It appears to us to follow, as a logical and necessary consequence, that Congress has the power to issue the

obligations of the United States in such form, and to impress upon them such qualities as currency for the purchase of merchandise and the payment of debts, as accord with the usage of sovereign governments. The power, as incident to the power of borrowing money and issuing bills or notes of the Government for money borrowed, of impressing upon those bills or notes the quality of being a legal tender for the payment of private debts, was a power universally understood to belong to sovereignty, in Europe and America, at the time of the framing and adoption of the Constitution of the United States. The governments of Europe, acting through the monarch or the legislature, according to the distribution of powers under their respective constitutions, had and have as sovereign a power of issuing paper money as of stamping coin.

The power of issuing bills of credit, and making them, at the discretion of the legislature, a tender in payment of private debts, had long been exercised in this country by the several colonies and States; and during the Revolutionary War the States, upon the recommendation of the Congress of the Confederation, had made the bills issued by Congress a legal tender. The exercise of this power not being prohibited to Congress by the Constitution, it is included in the power expressly granted to borrow money on the credit of the United States.

This position is fortified by the fact that Congress is vested with the exclusive exercise of the analogous power of coining money and regulating the value of domestic and foreign coin, and also with the paramount power of regulating foreign and interstate commerce. Under the power to borrow money on the credit of the United States, and to issue circulating notes for the money borrowed, its power to define the quality and force of these notes as currency is as broad as the like power over a metallic currency under the power to coin money and to regulate the value thereof. Under the two powers, taken together, Congress is authorized to establish a national currency, either in coin or in paper, and to make that currency lawful money for all purposes, as regards the national Government or private individuals.

The power of making the notes of the United States a legal tender in payment of private debts, being included in the power to borrow money and to provide a national currency, is not defeated or restricted by the fact that its exercise may affect the value of private contracts. If, upon a just and fair interpretation of the whole Constitution, a particular power or authority appears to be vested in Congress, it is no constitutional objection to its existence or to its exercise that the property or the contracts of individuals may be incidentally affected. The decisions of this Court already cited afford several examples of this.

Congress, as the legislature of a sovereign nation, being expressly empowered by the Constitution "to lay and collect taxes, to pay the debts and provide for the common defense and general welfare of the United States," and "to borrow money on the credit of the United States," and "coin money and regulate the value thereof and of foreign coin"; and being clearly authorized, as incidental to the exercise of those great powers, to emit bills of credit, to charter national banks, and to provide a national currency for the whole people, in the form of coin, treasury notes, and national-bank bills; and the power to make the notes of the Government a legal tender in payment of private debts being one of the powers belonging to sovereignty in other civilized nations, and not expressly withheld from Congress by the Constitution—we are irresistibly impelled to the conclusion that the impressing upon the treasury notes of the United States the quality of being a legal tender in payment of private debts is an appropriate means, conducive and plainly adapted to the execution of the undoubted powers of Congress, consistent with the letter and spirit of the Constitution, and, therefore, within the meaning of that instrument, "necessary and proper for carrying into execution the powers vested by this Constitution in the Government of the United States."

Such being our conclusion in matter of law, the question whether at any particular time, in war or in peace, the exigency is such, by reason of unusual and pressing demands on the resources of the Government or of the inadequacy of the supply of gold and silver coin to furnish the currency needed for the uses of the Government and of the people, that it is, as a matter of fact, wise and expedient to resort to this means, is a political question to be determined by Congress when the question of exigency arises, and not a judicial question to be afterward passed upon by the courts. To quote once more from the judgment in McCulloch *vs.* Maryland: "Where the law is not prohibited, and is really calculated to effect any of the objects intrusted to the Government, to undertake here to inquire into the degree of its necessity would be to pass the line which circumscribes the judicial department and to tread on legislative ground." (Vol. iv, Wheaton's Reports, p. 423.)

Of the eight justices who concurred in the judgment of the Court, Justice Miller took part in the two former decisions of this question, dissenting from the opinion of the majority in Hepburn against Griswold, which denied to Congress the power to issue legal-tender notes, and agreeing with the majority in Legal-Tender Cases that Congress has such power. Justice Bradley was not a member of the court when Hepburn against Griswold was decided; he was one of the majority in Legal-Tender Cases. The other six justices—Waite, Harlan, Woods, Matthews, Gray, and Blatchford—who concur in the opinion of the Court in Juilliard against Greenman, have come upon the bench since the second of the two former cases was decided. Justice Field has taken part in the decision of all three cases, and in the latest one delivered an elaborate dissenting opinion, adhering to the same principles maintained by him in the other two, namely, that Congress has no constitutional power to make United States notes a legal tender.

On March 10, 1884, propositions to amend the Constitution were brought forward as follows: by Senator Bayard, of Delaware, and by Representatives Hewitt and Potter, of New York, that Congress shall not have power to make anything but gold and silver coin a legal tender for the payment of debts—Mr. Potter's containing the proviso, "except after a declaration of war, when the public safety may require it"; by Senator Garland, of Arkansas, that the legal-tender notes issued by Congress shall never exceed $350,000,000, except by a two-third vote of each branch.

Power of Congress touching Elections.—An important opinion on this subject was rendered by the United States Supreme Court on March 3, 1884. The question was raised in what are known as the "Georgia Ku-klux cases," on petitions for writs of *habeas corpus* to release a number of persons convicted in the Federal Circuit Court for the Northern District of Georgia on the charge of threatening, beating, and otherwise intimidating colored voters at an election in that State for a member of Congress. The offense set forth in the indict-

ment was created by acts of Congress passed in 1870 and 1871, and is now covered by sections 5508 and 5520 of the Revised Statutes of the United States, which are as follow:

SECTION 5508. If two or more persons conspire to injure, oppress, threaten, or intimidate any citizen in the free exercise or enjoyment of any right or privilege secured to him by the Constitution or laws of the United States, or because of his having so exercised the same; or if two or more persons go in disguise on the highway, or on the premises of another, with intent to prevent or hinder his free exercise or enjoyment of any right or privilege so secured, they shall be fined not more than five thousand dollars and imprisoned not more than ten years; and shall, moreover, be thereafter ineligible to any office, or place of honor, profit, or trust created by the Constitution or laws of the United States.

SEC. 5520. If two or more persons in any State or Territory conspire to prevent by force, intimidation, or threat, any citizen who is lawfully entitled to vote, from giving his support or advocacy, in a legal manner, toward or in favor of the election of any lawfully qualified person as an elector for President or Vice-President, or as a member of the Congress of the United States; or to injure any citizen in person or property on account of such support or advocacy; each of such persons shall be punished by a fine of not less than five hundred nor more than five thousand dollars, or by imprisonment, with or without hard labor, not less than six months nor more than six years, or by both such fine and imprisonment.

The question was, whether these sections are constitutional, whether Congress has the power to prescribe crimes against the elective franchise at an election in a State at which Federal officers are voted for, and to impose punishment for such crimes. The Court decides this question in the affirmative. In the opinion, Justice Miller says: "That a government whose essential character is republican, whose Executive head and legislative body are both elective, whose most numerous and powerful branch of the legislature is elected by the people directly, has no power, by appropriate laws, to secure this election from the influence of violence, of corruption, and of fraud, is a proposition so startling as to arrest attention and demand the gravest consideration. If this Government is anything more than a mere aggregation of delegated agents of other States and governments, each of which is superior to the General Government, it must have the power to protect the elections on which its existence depends from violence and corruption. If it has not this power, it is left helpless before the two great natural and historical enemies of all republics, open violence and insidious corruption."

To the argument that, because no express power is delegated to Congress to provide for preventing violence exercised on the voter as a means of controlling his vote, no such law may be enacted by Congress, he replies: "It destroys at one blow, in construing the Constitution of the United States, the doctrine, universally applied to all instruments of writing, that what is implied is as much a part of the instrument as what is expressed. This principle, in its application to the Constitution of the United States, more than to almost any other writing, is a necessity, by reason of the inherent ability to put into words all derivative powers—a difficulty which the instrument itself recognizes by conferring on Congress the authority to pass all laws necessary and proper to carry into execution the powers especially granted, and all other powers vested in the Government, or any branch of it, by the Constitution."

The opinion cites the power of Congress to pass laws to punish theft or robbery of the treasury of the United States, and depredations on the mails, although Congress is not expressly authorized to enact such laws. The contention that the States can pass the necessary laws to preserve the purity of elections and protect voters, is met by pointing out the fact that the existence of State laws against counterfeiting coin of the United States has never been held to supersede the acts of Congress passed for that purpose, or to justify the United States in failing to enforce its own laws to protect the circulation of the coin which it issues. The Court refers also to the attempts of Congress to protect officers of the Government in the exercise of their duties in hostile communities, in the nullification difficulties in South Carolina, and in the late war during the troubles growing out of the enforcement of the draft. Justice Miller asks, if it be not doubted that Congress has the power to provide laws for the proper conduct of elections for Representatives in Congress, is such power annulled because an election for State officers is held at the same time and place? and says: "This question answers itself, and it is only because Congress, through long habit and long years of forbearance, has, in deference and respect to the States, refrained from the exercise of these powers, that they are now doubted."

The Court holds that the fifteenth amendment of the Constitution, by its limitation on the power of the States in the exercise of their right to prescribe the qualifications of voters in their election, and by its limitation of the power of the United States over that subject, clearly shows that the right of suffrage was considered to be of supreme importance to the national Government, and was not intended to be left within the exclusive control of the States. The opinion closes as follows:

In a republican government like ours, where political power is reposed exclusively in representatives of the entire body of the people chosen at short intervals by popular elections, the temptations to control these elections by violence and by corruption is a constant source of danger. Such has been the history of all republics, and though ours has been comparatively free from both these evils in the past, no lover of his country can shut his eyes to the fear of future danger from both sources. If the recurrence of such acts as these prisoners stand convicted of, are too common in one quarter of the country, and give omen of danger from lawless violence, the free use of money in elections, arising from the vast growth of recent wealth in other quarters, presents

equal cause for anxiety. The rule to show cause in this case is discharged, and the writs of *habeas corpus* denied.

(For the opinion of the Supreme Court declaring unconstitutional that part of the "Ku-klux act" passed by Congress in 1871, and now embodied in section 5519 of the Revised Statutes, see the "Annual Cyclopædia" for 1882, page 457.)

LITERATURE, AMERICAN, IN 1883. The total number of books published in the United States for the year 1883 did not much exceed the aggregate of 1882. The work done by American publishers has been, as usual, largely reprints from English plates, or importations of sheets bound and published under an American imprint. Of what may be called distinctively American literature, that is, the products of American authors, there has not been any notable increase in number of books, though the average quality distinctly indicates a higher intellectual standard. It must be said, however, that in the severer lines of thought and study, theology and religion excepted, there has not been shown the same relative activity as in the more popular forms of literature. This is specially the case in science, metaphysics, sociology, economics, and kindred subjects. On the other hand, the showing in fiction, biography, history, travel, poetry, and general literature has been signally brilliant and satisfactory. In theology the contributions have been a distinctive feature of the publications of the year, including books which deal with theology from the agnostic stand-point.

The total number of books published during the year in the United States, classified and compared with those of 1882, will be found in the following summary taken from the "Publishers' Weekly," which is probably as approximately close as is possible to be obtained. This list includes reprints of foreign books as well as books by American authors:

	1882.	1883.
Fiction	767	670
Law	261	397
Theology and religion	326	375
Juvenile books	278	331
Medical science, hygiene, etc	188	211
Education, language, etc	221	197
Poetry and drama	182	184
Biography, memoirs, etc	184	161
Literary history and miscellany	155	158
Descriptive travel, etc	185	155
Useful arts	87	146
History	118	119
Social and political science	112	106
Physical and mathematical science	106	90
Fine arts and illustrated books	91	75
Humor and satire	85	47
Sports and amusements	28	22
Domestic and rural	20	22
Mental and moral philosophy	21	15
Total	3,365	3,481

It need not be said that the bulk of the above quantity of books is of ephemeral value, or else of a professional and technical sort. In our rapid sketch of the publications of 1883 only the notable ones will be mentioned, and a distinction made between the books written by American authors and those emanating from a foreign source.

Fiction.—Fiction is the most important class, both as regards the number of books and the high degree of literary excellence attained by many of them. F. Marion Crawford continued the notable success made in "Mr. Isaacs" by "Dr. Claudius" (Macmillan & Co.), and "To Leeward" (Houghton, Mifflin, & Co.). One of the most powerful novels of the year was "But yet a Woman" (Houghton, Mifflin, & Co.), by Prof. A. S. Hardy, which made a distinct mark on the literature of the year. Other memorable works of fiction which created considerable discussion both at home and abroad were Mrs. Burnett's "Through One Administration" (James R. Osgood & Co.); Bret Harte's "In the Carquinez Woods" (Houghton, Mifflin, & Co.); Howells's "A Woman's Reason" (James R. Osgood & Co.); Tourgee's "Hot Ploughshares" (Fords, Howard, & Hulbert); Constance Woolson's "For the Major" (Harper & Brothers); "Arius the Libyan" (D. Appleton & Co.); and "The Bread-Winners" (Harper & Brothers). The latter two novels were anonymous, and notable examples of imaginative work. The first-named novel gave a vivid picture of the conflicts and discussions of early Christianity and of the imperial court of Constantine. "The Bread-Winners" is noticeable as a study of some of the most interesting phases of contemporary life, equally marked by vigorous realism and delicacy of touch. Other novels by American authors worthy of mention were "Guenn, a Wave on the Breton Coast" (James R. Osgood & Co.), by Blanche Willis Howard; "Dust" (Fords, Howard, & Hulbert), and "Fortune's Fool" (James R. Osgood & Co.), both by Julian Hawthorne, and equally marked by great power and great defects; Miss Tincker's "Jewel in the Lotos" (J. B. Lippincott & Co.); Edgar Fawcett's "An Ambitious Woman," a well-written story of New York society (Houghton, Mifflin, & Co.); Frank Lee Benedict's "The Price She Paid" (J. B. Lippincott & Co.); "His Sombre Rivals," by E. P. Roe (Dodd, Mead, & Co.); "The Led Horse Claim," by Mary Hallock Foote (James R. Osgood & Co.); "The Priest and the Man, or Abélard and Héloïse," by William Wilberforce Newton (Cupples, Upham, & Co.); "Hand and Ring" (G. P. Putnam's Sons), by Anna Katharine Green; "A Castle in Spain," a posthumous novel by James De Mille (Harper & Brothers); "Stephen M. D.," by the author of "The Wide Wide World" (Robert Carter & Brothers); "Judith, a Chronicle of Old Virginia," by Marion Harland (Fords, Howard, & Hulbert); "A Washington Winter," by Mrs. Madeleine Dahlgren (James R. Osgood & Co.); "An Honorable Surrender," by Mary Adams (Charles Scribner's Sons); "A Newport Aquarelle," by Miss Maud Howe (Roberts Brothers); Miss Olney's "Fairy Gold" (J. B. Lippincott & Co.);

"A Fashionable Sufferer" (Houghton, Mifflin, & Co.) by Augustus Hoppin; "Mr. and Mrs. Morton," by a Bostonian (Cupples, Upham & Co.); "A Righteous Apostate," by Marchioness Lanza (G. P. Putnam's Sons); "A Woman of Honor," by H. C. Bunner (James R. Osgood & Co.); Edward King's "The Gentle Savage" (James R. Osgood & Co.); "Beyond the Gates," by Elizabeth Stuart Phelps (Houghton, Mifflin & Co.); and "The Diothas," anonymous (G. P. Putnam's Sons). Other anonymous novels worth mention are "His Second Campaign" and "Fanchette," added to the "Round Robin Series" (James R. Osgood & Co.); and "A Daughter of the Philistines" and "Princess Amélie," added to the "No Name Series" (Roberts Brothers). To American fiction for 1883 must also be added several collections of short tales of unusual excellence. These are "Dialect Tales," by Sherwood Bonner (Harper & Brothers); Henry James's "Siege of London and other Stories" (Houghton, Mifflin, & Co.); and "Nights with Uncle Remus," a continuation of Joel Chandler Harris's striking studies of Southern negro folk-lore (James R. Osgood & Co.). Among more prominent novels by English authors, reprinted by American publishers, were Rhoda Broughton's "Belinda" (D. Appleton & Co.); "Frescoes" and "Wanda," by Ouida (J. B. Lippincott & Co.); "Portia" and "Rossmoyne," by "The Duchess" (J. B. Lippincott & Co.); "Yolande" and "Shandon Bells," by William Black (Harper & Brothers); "King Capital," by William Sime (G. P. Putnam's Sons); Lucas Malet's "Mrs. Lorimer" (D. Appleton & Co.); "Donal Grant," by George MacDonald (D. Lothrop & Co.). To the "Leisure-Hour Series" (Henry Holt & Co.) have been added "A Great Treason" and "A Story of Carnival," by Mary A. M. Hoppus; "Gideon Fleyce," by H. W. Lucy; "Geraldine Hawthorne," by Beatrice M. Butt; "The Admiral's Ward" and "The Executor," by Mrs. Alexander; "No New Thing," by W. E. Norris; "In the Olden Time," by Miss Roberts; "Beyond Recall," by Adeline Sargent; and an anonymous novel, "A Chelsea Householder." "Homespun Stories," by Ascot R. Hope (D. Appleton & Co.), was a volume of striking short tales. Other noticeable English novels, which have been reprinted in the cheap libraries, such as the "Franklin Square," "Seaside," "Lovell's," etc., are Mrs. Forrester's "Jane," Mrs. Oliphant's "Sir Tom," "The Ladies Lindores," and "It was a Lover and his Lass," Hardy's "Romantic Adventures of a Milkmaid," Robert Buchanan's "Annan Water" and "Love Me Forever," Anthony Trollope's "Mr. Scarborough's Family" and "The Land-Leaguers," Frances E. Trollope's "Like Ships upon the Sea," Payn's "Thicker than Water," Mrs. Lynn Linton's "Ione Stewart," Besant's "All in a Garden Fair," Saunders's "A Noble Wife," Wilkie Collins's "Heart and Science," Shorthouse's "The Little Schoolmaster Mark," McCarthy's "The Maid of Athens," "My Trivial Life and Misfortunes" (anonymous), Mrs. Riddle's "A Struggle for Fame," Annie Thomas's (Mrs. Cudlip) "Jenifer," William Clark Russell's "A Sea Queen," Miss Macquoid's "Her Sailor Love," Miss Yonge's "Stray Pearls," Countess von Bothmer's "Aut Cæsar aut Nihil," Miss Taylor's "Senior Songman," Miss Betham Edwards's "Disarmed" and "Pearla," Laurence Oliphant's "Altiora Peto," Mary Cecil Hay's "Bid Me Discourse," and Miss Braddon's "Golden Calf" and "Phantom Fortune." To the above record may be added several translations from Continental authors, such as Daudet's "L'Evangeliste" (T. B. Peterson & Brothers); Mrs. Werner's "Banned and Blessed" (J. B. Lippincott & Co.); Mrs. Greville's "Guy's Marriage," and Zola's "In the Whirlpool" and the "Bonheur des Dames" (T. B. Peterson & Co.); Enault's "Christine," Richter's "Invisible Lodge," and Auerbach's "Master Bieland" (Henry Holt & Co.); Galdo's "Marienella," Dahn's "Felicitas," and Ebers's "A Word, only a Word" (W. S. Gottsberger); and a striking series, entitled "The Surgeon's Stories," from the Swedish of Topelius, including "Times of Gustaf Adolf," "Times of Battle and Rest," and "Times of Charles XII" (Jansen, McClurg, & Co.).

Biography.—The work of American writers in Biography was striking in extent and quality. "The Biography of William Cullen Bryant," by Parke Godwin (D. Appleton & Co.), was a judicious and elaborate study of a poet who made a foremost mark on American letters, and who was also one of the prominent journalists of the country. "The Autobiography of Thurlow Weed," edited by his grandson, Thurlow Weed Barnes (Houghton, Mifflin, & Co.), was an interesting revelation of a remarkable man; and Dr. Morgan Dix's "Memoirs of John Adams Dix" (Harper & Brothers) attracted deserved notice. Several valuable additions were made to the "American Statesman Series" (Houghton, Mifflin, & Co.). These were "Thomas Jefferson," by John T. Morse, Jr., "James Monroe," by D. C. Gilman, "Albert Gallatin," by John Austin Stevens, and "Daniel Webster," by Henry Cabot Lodge. "The Life of James Buchanan," by George Ticknor Curtis (Harper & Brothers), was an able if a somewhat one-sided study. Lyman Abbot's "Henry Ward Beecher" (Funk & Wagnalls) aimed to depict the aspect of the age which produced him as well as the man himself, a feature also noticeable in the "Autobiography of Charles Biddle" (E. Claxton & Co.), which was a vivid account of an interesting period of history. To the same period as the latter belongs Muzzey's "Reminiscences and Memorials of the Men of the Revolution." "Political Recollections," by Hon. George W. Julian (Jansen, McClurg, & Co.), gave an interesting sketch of public affairs and men from 1840 to 1872; and "Reminiscences of Public Men," by W. W. Perry, was a work of similar

field and value. Carroll's "Twelve Americans" (Harper & Brothers) attempted a sketch of representative men in different walks of life. Other works of considerable interest were "Recollections of a Drummer Boy," by Rev. Harry Keifer (James R. Osgood & Co.), a reminiscence of experiences during the late war; "Recollections of a Naval Officer," by W. H. Parker (Charles Scribner's Sons); "Memoir of John Keese, Wit and Littérateur," by William L. Keese (D. Appleton & Co.); "Abélard and Héloïse," by Mrs. Abby Sage Richardson (James R. Osgood & Co.), a new study of the two celebrated lovers; and Miss Titcomb's "Early New England People"; "Quincey's "Figures of the Past," and Lanman's "Leading Men of Japan." The latter-named book gave an entertaining account of people, institutions, and prominent personages in the most progressive empire of the East. Among religious biographies may be mentioned "Life of Adoniram Judson," by Edward Judson (Anson D. F. Randolph & Co.); "Autobiography and Letters of Orville Dewey, D. D.," by his daughter, Elizabeth Dewey (George H. Ellis), a study of an eminent orator and scholar; "Life and Mission of Emanuel Swedenborg," by Benjamin Worcester (Roberts Brothers); "Life of Bishop William Rollinson Whittingham," by William Francis Brand (E. & J. B. Young & Co.); and "Autobiography of Bishop Erastus O. Haven" (Phillips & Hunt), edited by Rev. Dr. C. C. Stratton. The year was rich in literary biography. F. H. Underwood's "Life of John Greenleaf Whittier" (James R. Osgood & Co.) was rivaled by a biography of the same poet by W. Sloane Kennedy (D. Lothrop & Co.). The latter-named biographer also wrote a "Life of Oliver Wendell Holmes" (S. E. Cassino & Co.). B. G. Lovejoy's "Life of Bacon" (Estes & Lauriat), George W. Cooke's "George Eliot" (James R. Osgood & Co.), Mrs. Julia Ward Howe's "Life of Margaret Fuller" (Roberts Brothers), Austin's "Life of Longfellow" (Houghton, Mifflin, & Co.), and Francis E. Cooke's "Theodore Parker" (Cupples, Upham, & Co.), were all books of more than ordinary value and literary charm. Other biographical studies to which attention may be called as possessing much political and historical interest are the "Life of Alexander H. Stephens," by Richard Malcom Johnson and William Hande Browne, and "The Life and Times of S. S. Prentiss," by Hon. Joseph D. Shields (J. B. Lippincott & Co.). Some other biographies worthy of mention are "Life of Adelaide Phillips," by Mrs. R. C. Waterson (A. Williams & Co.); Bucke's "Walt Whitman"; Waters's "Life of William Cobbett"; Grace Greenwood's "Queen Victoria" (Anderson & Allen); "Life of Gen. Ambrose E. Burnside," by Ben Perley Poore (J. A. & R. A. Reid); "The Washington Irving Correspondence," and Stone's "Our French Allies." The reprints by American publishers of biographical works written by English or other foreign authors include many of signal value and interest. Among these, special attention may be called to "The Correspondence of Thomas Carlyle and Ralph Waldo Emerson" (Houghton, Mifflin, & Co.); "Letters and Memorials of Jane Welsh Carlyle," edited by J. A. Froude (Charles Scribner's Sons); Bosworth Smith's "Life of Lord Lawrence" (Charles Scribner's Sons); "Life, Letters, and Literary Remains of Edward Bulwer, Lord Lytton," by his son the Earl of Lytton (Harper & Brothers); "Anthony Trollope's Autobiography" (Harper & Brothers); Köstlin's "Life of Luther" (Charles Scribner's Sons); "Life and Achievements of Edward Henry Palmer," by Walter Besant (E. P. Dutton & Co.); Hall's "Retrospect of a Long Life" (D. Appleton & Co.); and Madame Gautier's "Richard Wagner" (A. Williams & Co.). To these should be added the new volumes in the "English Men of Letters Series" (Harper & Brothers), Morison's "Macaulay," Mrs. Oliphant's "Sheridan," and Dobson's "Fielding"; in the "Famous Women Series" (Roberts Brothers), Miss Thomas's "George Sand," Miss Mathilde Blind's "George Eliot," Mrs. Gilchrist's "Mary Lamb," Miss Robinson's "Emily Brontë," and Miss Helen Zimmern's "Maria Edgeworth"; in "English Classics," Fowler's "Shaftesbury and Hutchinson" (G. P. Putnam's Sons); in "Foreign Classics," Graham's "Rousseau" (J. B. Lippincott & Co.); and the "Life of Sir William Rowan Hamilton," by Robert Perceval Graves (J. B. Lippincott & Co.).

History.—In History, American literature in 1883 was noticeably rich. Among the earliest in publication, and certainly foremost in interest, was the "History of the People of the United States" (Vol. I), by John Bach McMaster (D. Appleton & Co.). In this work the author has followed the method of Macaulay and Green, and presented a vivid picture of American life in its customs, manners, social characteristics, etc. Probably no book of the year made a greater sensation. Another notable issue by the same house was a new and revised edition, thoroughly rewritten, of Bancroft's "History of the United States" (Vols. I, II, III). This contains the final touches of the author. Another work, similar in scope to that of McMaster's, is entitled "A History of the American People," by Arthur Gilman (D. Lothrop & Co.), and is marked by ability and research. "Mexico," by Hubert Howe Bancroft (Bancroft & Co.), was the first volume of the Spanish-American section of a gigantic undertaking, covering the ethnology and history of the whole region of the Pacific coast from British Columbia to the Isthmus of Panama. Noticeable among the histories was the literature of the late civil war. Foremost among these were volumes in the "Campaigns of the Civil War" series, and the "Navy in the Civil War" series, both published by Charles Scribner's Sons. "The Shenandoah Valley in 1864," by George E. Pond, was a judicial and vividly written work.

The "Virginia Campaign of 1864–'65," by Gen. A. A. Humphreys, was by an accomplished soldier, whose position as chief of staff and military attainments gave him a peculiarly favorable opportunity of judgment. The same author had also previously contributed "From Gettysburg to the Rapidan." The series was concluded by a "Statistical Record of the Armies of the United States," by Frederick Phisterer, which gave all the figures, both in money and men, involved in the war. The naval series, supplementing the foregoing, consisted of three volumes, all published during the year. "The Blockade and the Cruisers," by J. Russell Soley, contributed an account of sea-coast operations, which is both trustworthy and well written. Admiral Daniel Ammen covered another section of the same field in "The Atlantic Coast," and "The Gulf and Inland Waters," by Commander Mahan, finished the series. The two series constitute a consecutive and, on the whole, very ably written history of the military and naval operations of the late war. There were other interesting contributions to war-literature in this department. Col. T. A. Dodge wrote "A Bird's-Eye View of our Civil War" (James R. Osgood & Co.), and from the same firm we had "Brook Farm to Cedar Mountain," by Gen. George D. Gordon. "Bullet and Shell," by George F. Williams, treated the war from the stand-point of the private soldier in a picturesque fashion (Fords, Howard, & Hulbert). Under the title of "The Secret Service of the Confederate States; or, How the Confederate Cruisers were equipped," by James D. Bulloch (G. P. Putnam's Sons), there was an interesting monograph, giving a great mass of hitherto unknown facts. Properly belonging to war-literature, too, was the "Diplomatic History of the Civil War," being the fifth volume of the "Works of William H. Seward," edited by George E. Baker (Houghton, Mifflin, & Co.), a book which will probably remain a permanent and standard authority. "Anecdotes of the Civil War," by Gen. E. D. Townsend, late adjutant-general, also possessed considerable historical value (D. Appleton & Co.). The "American Commonwealth" series (Houghton, Mifflin, & Co.) aims to cover a unique and important field, State histories in their relation to national history. Three volumes were issued in 1883: "Virginia, a History of the People," by John Esten Cooke; "History of Georgia," by Charles C. Jones, LL. D.; and "Oregon, the Struggle for Possession," by William Barrows. The latter work gives a succinct account of the narrow miss by which the United States escaped losing the enormous territory contained in Oregon and Washington Territory. A work of interest to statesmen, merchants, and political economists is found in the "Financial History of the United States," by Albert S. Bolles (D. Appleton & Co.). Not to be overlooked in the year's record of historical research is the series written and published under the auspices of the Johns Hopkins University. These works touch the legal and institutional aspects of American history. Among them may be mentioned "Local Government in Illinois," by Albert Shaw; "Local Government in Pennsylvania," by E. R. L. Gould; "Local Government and Free Schools in South Carolina," by B. J. Ramage; "Local Government in Michigan and the Northwest," by E. W. Bemis; "Introduction to American Institutional History," by Edward A. Freeman; "Genesis of a New England State (Connecticut)," by Alexander Johnson; "Germanic Origin of New England Towns," by H. B. Adams; "Normal Constables in America," by H. B. Adams; "Parish Institutions of Maryland," by Edward Ingle; "Saxon Tithingmen in America," by H. B. Adams; and "Village Communities of Cape Ann and Salem," by H. B. Adams. These works will prove themselves exceptionally valuable to the philosophical student of history. Other works of local and antiquarian interest are, "A History of the Schenectady Patent in the Dutch and English Times," edited by Maj. McMurray, U. S. A.; "History of Bristol, R. I.," by Wilfrid B. Munro (J. A. & R. A. Reid); "History of Hardwicke, Mass." by Lucius R. Paige (Houghton, Mifflin, & Co.); "History of the Union League of Philadelphia," by George Parsons Lathrop (J. B. Lippincott & Co.); and "Orderly Book of Sir John Johnson in 1777, during the Revolution," by W. L. Stone (Joel Munson's Sons). On the side of religious history several important contributions have been made by American historians. The first volume of Dr. Philip Schaff's "History of the Christian Church, Ante-Nicene Christianity, A. D. 100–325" (Charles Scribner's Sons), was issued. This is to be completed in four volumes. The "History of the Reformation," by Prof. G. P. Fisher, D. D., of Yale College (Charles Scribner's Sons), was the work of one of the most accomplished ecclesiastical scholars of the country. Rev. George A. Jackson's "Post-Nicene Greek Fathers" (Appletons' "Christian Literature Primers") was a concise sketch of more than ordinary interest. Other works in religious history were "History of Indian Missions on the Pacific Coast" (Am. S. S. Union); the "History of the Methodist Episcopal Church in the United States" by Rev. P. Douglass Garrie (John E. Potter & Co.); and the "History of the Episcopal Church in Connecticut," by Rev. Edward Beardsley, D. D. (Houghton, Mifflin, & Co.). A book which must not be overlooked, as bearing an important relation to the history of the country, is the Hon. G. P. Williams's "History of the Negro Race in the United States" (G. P. Putnam's Sons), notable as being the work of a negro scholar, marked by literary skill and research. Other histories of the year worthy of mention were, Prof. Herbert Tuttle's "History of Prussia" (Houghton, Mifflin, & Co.); "Mediæval Civilization," by G. B. Adams (Appletons' "History Primers");

"Mosaics of Bible History," and "Mosaics of Grecian History," by Marcius and Robert P. Willson (Harper & Brothers); "Pioneers of the Western Reserve," by Harvey Rice (Lee & Shepard); "Quaker Invasion of Massachusetts," by R. P. Hallowell (Houghton, Mifflin, & Co.); "Short History of Rhode Island," by George Washington Greene, LL. D. (J. A. & R. A. Reid); "Stories of American History," by C. M. Yonge and H. H. Weld (D. Appleton & Co.); and Stephens's "History of the United States," revised to 1883 (E. J. Hale & Son). An important series was begun under the general name of "Minor Wars of the United States" (Dodd, Mead, & Co.), and thus far includes Richard Markham's "King Philip's War," Rossiter Johnson's "War of 1812" and "Old French War," and Horatio O. Ladd's "War with Mexico."

Among the notable historical works by foreign authors published under an American imprint were Count de Paris's "History of the American Civil War," 3d volume (Porter & Coates); Sir Gavan Duffy's "Four Years of Irish History" (Cassell & Co.); "The Expansion of England," by J. R. Seeley (Roberts Brothers); Froude's "Short Studies on Great Subjects," 4th series (Charles Scribner's Sons); Freeman's "Impressions of the United States" (Henry Holt & Co.); Lacombe's "Growth of a People" (Henry Holt & Co.); "Frederick II and Maria Theresa," by Duc de Broglie (Harper & Brothers); "A History of Latin Literature," by George Augustus Simcox (Harper & Brothers); "Literary History of England" by Mrs. Oliphant (Macmillan & Co.); and "Huguenots of France," by H. M. Baird, and "Underground Russia, by Stepniak (Charles Scribner's Sons). The latter work gave a revelation of the interior character and workings of Nihilism from the stand-point of one of its most noted chiefs, Pierre Lavroff.

Travel. — In travel and description American authorship was quite fruitful. "Old Mexico and the Lost Provinces," by W. H. Bishop (Harper & Brothers), appears to have been careful in its facts as well as picturesque in its treatment. A similar volume devoted to old Spain, "Spanish Vistas," by G. P. Lathrop, was issued by the same house, and was notable both in its literary matter and illustrations. The popularity of the Spanish Peninsula as a field for the literary traveler is also shown in several other books by well-known authors. "A Family Flight through Spain," by Edward Everett Hale and Miss Susan Hale (D. Lothrop & Co.), professed to give the adventures of a traveling party consisting of father, mother, children, and one or two friends. Mr. Hale was also the author of "Seven Spanish Cities" (Roberts Brothers), which gave a graphic account of the principal centers of Spanish civilization. Henry Day's "From the Pyrenees to the Pillars of Hercules" (G. P. Putnam's Sons) was a cursory but readable sketch; and "In the Shadow of the Pyrenees," by Henry Vincent, conveyed much curious information concerning the hardy and half-savage race known as the Basques, who differ so widely from all the peoples of Western Europe. "Spanish Ways and By-Ways," by William Howe Downes (Cupples, Upham, & Co.), was attractive alike in its descriptions and illustrations; and "Through Spain on Donkey-Back," by Robert Louis Stevenson (D. Lothrop & Co.), recommended itself by freshness of observation. Howard Conkling's "Mexico and the Mexicans" (Taintor Brothers, Morrill, & Co.) was a work full of facts concerning the people, their institutions and resources, by an old resident. Among works of literary and philosophical travel, "A Walk in Hellas," by Denton J. Snider (James R. Osgood & Co.), possessed unquestionable merit. It treated Greece of to-day in the light of Greece of the past, and all those classic memories which make Hellenic soil memorable. Rev. H. M. Field, who has repute as an extensive traveler and a spirited writer, was represented in two new works, "Among the Holy Hills," and "On the Desert" (Charles Scribner's Sons). The latter-named work also contained a judicious study of the recent imbroglio in Egypt, which led to its possession by England. Mrs. A. K. Dunning's "Through the Desert" (Presbyterian Board of Publication) deserves passing mention; and "Among the Mongols," by Rev. J. Gilmour (American Tract Society), was a readable record of missionary experiences amid barbarian races. "From the Hudson to the Neva," by David Ker (D. Lothrop & Co.), embodied the experiences of a traveler in a romantic guise. "An American Four-in-Hand in Great Britain," by Andrew Carnegie (Charles Scribner's Sons), was a graphic and breezy record of a drive through Great Britain, from Windsor Castle to Inverness, Scotland, by a party of ladies and gentlemen. Adventures of a different sort, but hardly less interesting, were described in "Across the Continent with the Fifth U. S. Cavalry," by Captain George F. Price, U. S. A. (D. Van Nostrand & Co.). William Winter's "English Rambles" (James R. Osgood & Co.) recalled interesting literary and historic memories gracefully. One of the best books of the year was "Germany seen without Spectacles," by Harry Ruggles (Lee & Shepard), which was caustic and incisive, but apparently judicial. T. B. Aldrich, the poet, embodied his experiences during a vacation in "Ponkapog to Pesth" (Houghton, Mifflin, & Co.), the first name in the title being the location of the author's American country home, the latter the goal of his journey. "Round about Rio: A Picture of Life and Scenes in and about the Great Metropolis of the Southern Hemisphere, Rio Janeiro," by Frank D. Y. Carpenter (Jansen, McClurg, & Co.), indicated lively descriptive talent on the part of the young traveling naturalist. A book by Charles Dudley Warner, entitled "A Round-about Journey" (Houghton, Mifflin, & Co.), gath-

ered together the reminiscences of a protracted and leisurely journey through Europe and the East. A well-written account of Oriental travel was contributed by William W. Warren, under the title of "Life on the Nile in a Dahabieh" (Lee & Shepard). This work also included shore-excursions between Cairo and Assouan, and a tour in Egypt and Palestine in 1866–'67. "The Middle Kingdom," by Prof. Wells Williams (Charles Scribner's Sons), thoroughly revised and rewritten, was among the most important publications of the year, as it is, perhaps, the most exhaustive and thorough study of China, its history, institutions, and customs, easily available for the general reader. The painful interest which was kept at tension for many months in the case of the Arctic explorer De Long, turned deserved attention to the work edited by Mrs. Emma De Long, called "The Voyage of the Jeannette: The Ship- and Ice-Journals of George W. De Long, Lieutenant-Commander U. S. N., and Commander of the Polar Expedition, 1879–'81" (Houghton, Mifflin, & Co.). This pathetic record is the lost man's own story, and is one of the most interesting narratives of Arctic adventure and suffering written for many years. In connection with the above may be mentioned "Ice-Pack and Tundra," by W. H. Gilder (Charles Scribner's Sons), which described the experiences of the expedition sent out by the United States Government in search of Commander De Long's party. Among works of travel may be classed several noticeable books, which embodied reminiscences either of the author or of other travelers in a fictitious form, such as "Our Boys in China," by Harry W. French (Lee & Shepard); "The Bear-Worshipers of Yezo and the Island of Karafuto," by Edward Grey (Lee & Shepard); and "The Boy Travelers in Africa," by Col. T. W. Knox (Harper & Brothers). It need hardly be said that the latter three works were designed specially for the amusement and instruction of the young. Other books of travel and description were "On the Wing: Rambling Notes of a Trip to the Pacific," by Mary E. Blake (Lee & Shepard); "The Storied Sea," by Susan E. Wallace (James R. Osgood & Co.); "Travels and Observations in the Orient," by Hon. Walter Harriman (Lee & Shepard); and "Guide to Mexico," by Alfred R. Conkling (D. Appleton & Co.); Mark Twain's "Life on the Mississippi," and Stoddard's "Red-Letter Days Abroad" (James R. Osgood & Co.). The latter-named two books were among the literary successes of the year in their class.

The most noteworthy American reprints of foreign authors were Willis's "In the Land of the Lion and the Sun." James's "Wild Tribes of the Soudan" (Dodd, Mead, & Co.), Robinson's "Sinners and Saints" (Roberts Brothers), "A Visit to Ceylon and India," by Ernst Haeckel (S. E. Cassino & Co.), Miss Bird's "Golden Chersonese" (G. P. Putnam's Sons), Symonds's "Italian By-Ways" (Henry Holt & Co.), "Egypt, Palestine, and Phœnicia," by Felix Bovet (E. P. Dutton & Co.), "John Bull and his Island," by Max O'Rell (Charles Scribner's Sons), and J. J. Rein's "Japan" (A. C. Armstrong & Son).

Poetry.—The additions to American poetry do not show marked development of poetic genius, or promise of forthcoming poets to take the place of those who long since won their spurs, and are one by one taking their leave of us. A few of the poetical ventures, however, show vigorous and genuine poetic quality. "Poems," by Jones Very (Houghton, Mifflin, & Co.), were marked by a subtile beauty and an insight into the analogies of physical and emotional life which attracted wide attention. "Songs of an Idle Hour," by William J. Coughlin (A. Williams & Co.), and "Songs of Toil and Triumph," by J. L. McCreary (G. P. Putnam's Sons), contained much verse marked by genuine feeling and some technical skill. A similar recognition may be extended to "Stray Chords," by Julia R. Anagnos (Cupples, Upham, & Co.), and "Verses," by Kate Vannah (J. B. Lippincott & Co.). "Lyrical Recreations," by Samuel Ward (Macmillan & Co.), may be fairly called American, though issued by an English publisher, and the verses were bright and agreeable, if in no sense great. Longfellow's "Michael Angelo" (Houghton, Mifflin, & Co.), if in no essential sense a dramatic poem, as apparently designed, displayed the finest qualities of the lamented poet's genius, with an even riper breadth of treatment. "Mercedes and other Lyrics," by Thomas Bailey Aldrich (Houghton, Mifflin, & Co.), had the delicate qualities of this author's verse, and Whittier's "Bay of Seven Islands, and other Poems" (Houghton, Mifflin, & Co.), showed no decadence in the aged Quaker poet's lyrical fire and tenderness. "Love Poems of Louis Barnaval," edited by Charles De Kay (D. Appleton & Co.), was noticeable for a somewhat tropical exuberance. W. W. Story's "He and She, or A Poet's Portfolio" (Houghton, Mifflin, & Co.), was a collection of poems marked by grace and strength. Taylor's "Dulce Domum" (S. C. Griggs & Co.) was a good piece of work by a well-known Western poet. "Love Poems and Sonnets," by Owen Innsly (Cupples, Upham, & Co.), and "Poems of Passion," by Ella Wheeler (Belford, Clarke, & Co.), possessed the merits of feeling and good treatment. Other poetic works, to which we can only give passing mention, were "Angeline," "Brangonar, a Tragedy," "Joan of Arc," "Mirabeau, a Historical Drama," "Sibyl," and "The Nazarene," all by George H. Calvert (Lee & Shepard); "Claribel and other Poems," by Walter Malone (John P. Morton & Co.); "Destiny and other Poems," by M. J. Serrano (G. P. Putnam's Sons); "Elfrida, a Drama," by Dishon Rishell (J. B. Lippincott & Co.); "Legends, Lyrics, and Sonnets," by Frances L. Mace (Cupples, Upham,

& Co.); "Poems for Children," by Celia Thaxter (Houghton, Mifflin, & Co.); "Calumet of the Coteau," by P. W. Norris (J. B. Lippincott & Co.); and the Memorial edition of Bryant's poems, edited by Parke Godwin (D. Appleton & Co.). Among the numerous anthologies published may be specially mentioned "English Verse," edited by Linton and Stoddard, in five volumes (Charles Scribner's Sons), with a prefatory essay by Stoddard; "Fair Words about Fair Woman," edited by O. B. Bunce (D. Appleton & Co.); "Palgrave's Golden Treasury," revised and brought down to date by John Foster Kirk; and "Surf and Wave," by Anna L. Ward (T. Y. Crowell & Co.).

Productions of English poets reprinted by American publishers included several works of superior worth and beauty. Robert Browning's "Jocoseria" (Houghton, Mifflin, & Co.) was an excellent sample of his strong dramatic genius. Owen Meredith's "Poems and Lyrics of the Joy of the Earth" (by the Earl of Lytton) ranks well with his best work, and Edwin Arnold's "Indian Idyls" (Roberts Brothers) was one of the leading poetical productions of the year. In these idyls the author gave a noble English setting to many of the tales and legends given in the "Mahâb-hàrata," the well-known cycle of Sanskrit poems. Edmund Gosse's "On Viol and Flute" (Henry Holt & Co.), and Austin Dobson's "Old World Idyls and other Verses" (Scribner & Welford) were marked by the delicate and dainty touch characteristic of these poets. "Mano," by Rev. Richard Watson Dixon (George Routledge & Sons), was a poetical history of the time of the close of the tenth century, relating the adventures of a Norman knight, and possessed a quaint interest. Algernon Charles Swinburne's "A Century of Roundels" (R. Worthington) displayed all of this well-known poet's characteristic melody of form.

General Literature.—In general literature, including literary history, critical essays, and literary miscellany, were several notable publications. Sidney Lanier's "English Novel" (Charles Scribner's Sons) sketched the evolution of modern fiction from early literary forms. "Development of English Literature and Language," by Prof. A. H. Welsh (S. C. Griggs & Co.), was a contribution to literary history showing painstaking industry. M. W. Hazeltine's "Chats about Books," essays reprinted from the New York "Sun" (Charles Scribner's Sons), was a volume of noteworthy criticism. In "The Reading of Books," by Prof. Charles F. Thwing (Lee & Shepard), much valuable suggestion was given. John F. Genung made a contribution to critical literature in Tennyson's "In Memoriam, its Purpose and its Structure" (Houghton, Mifflin, & Co.). Oliver Wendell Holmes appeared in a fresh volume (Houghton, Mifflin, & Co.), "Pages from an Odd Volume of Life, a Collection of Essays, 1857–1881." "Books and how to use them," by J. C. Van Dyke (Fords, Howard, & Hulbert), was a valuable manual of advice to readers and students. Joel Benton's "Emerson as a Poet" (M. L. Holbrook & Co.) was a study of the poetry of the "great transcendentalist" by an enthusiastic admirer. In "Pen-Pictures of Modern Authors" and "Pen-Pictures of Victorian Authors" (G. P. Putnam's Sons), W. Shepard sketched the lights of modern English literature. Prof. C. E. Norton edited the "Carlyle-Emerson Correspondence" (James R. Osgood & Co.), a book fascinating to all those interested in literature. James E. Freeman's "Gatherings from an Artist's Portfolio in Rome" (Roberts Brothers) embodied the more notable experiences of many years of foreign life. Brinton's "American Hero-Myths" was a contribution of value to the ethnology and history of North America prior to the coming of the white man. "Games and Songs of American Children," by W. W. Newell (Harper & Brothers), is worthy of attention for its interesting treatment of a novel subject. The second volume of Baldwin's "An Introduction to English Literature" effectually carries out the plan of the first. James Jackson Jarves's "Italian Rambles" (G. P. Putnam's Sons) was an attractive study of Italian art, life, and literature. One of the interesting books of the year was Josiah Quincy's "Figures of the Past, from the Leaves of Old Journals" (Roberts Brothers). Other books of interest were Arthur Penn's "Home Library" (D. Appleton & Co.), Wheeler's "By-Ways of Literature," "The Modern Sphinx," by M. J. Savage (George H. Ellis), "The Battle of the Moy, or How Ireland regained her Independence" (Lee & Shepard), "Short Studies in Literature," by A. P. Southwick, A. M. (Eldredge & Son), and "A Lost Function in Romance," by Carroll Bryce (G. P. Putnam's Sons).

The list of reprints of important English books is quite rich in noteworthy titles. Among these may be specially noted Ashton's "Humor, Wit, and Satire of the Eighteenth Century," "Early English Literature," by Bernhard Ten Broek (Henry Holt & Co.); "Characteristics," by A. P. Russell (Houghton, Mifflin, & Co.); "Classical and Modern Essays," by F. W. H. Myers (Macmillan & Co.); "Colin Clout's Calendar," by Grant Allen (Funk & Wagnalls); "English Literature in the Eighteenth Century," by Thomas Sargent Parry (Harper & Brothers); "Asbjornsen's Folk and Fairy Tales," translated by H. L. Brockstad (A. C. Armstrong & Son); Prof. Thistleton Dyer's "Folk Lore of Shakespeare" (Harper & Brothers); "Heroes and Kings, Stories from the Greek," by Rev. Alfred J. Church (Scribner & Welford); "In Strange Company," by James Greenwood (Scribner & Welford); "Landmarks of English Literature," by Henry J. Nicholl (D. Appleton & Co.); Lord Bacon's "Promus of Formularies," edited by Mrs. Henry Pott (Houghton, Mifflin, & Co.); Buckland's "Story of English Literature," Wagner's "Epics and Romances of the

Middle Ages," Simcox's "History of Latin Literature" (Harper & Brothers); Firdusi's "Epic of Kings," translated from the Persian by Mrs. Helen Zimmern (Henry Holt & Co.); Dr. David Pryde's "Highways of Literature" (Funk & Wagnalls); Ireland's "Book-Lover's Enchiridion" (Houghton, Mifflin, & Co.); Tourgueneff's "Poems in Prose" (Cupples, Upham, & Co.); Horne's "History of the Literature of the Scandinavian North," translated by Prof. Rasmus Andersen (S. C. Griggs & Co.); Blackie's "Wisdom of Goethe" (Charles Scribner's Sons); Macdonald's "Imagination and other Essays" (D. Lothrop & Co.); "Recollections of my Childhood and Youth," by Ernest Renan (G. P. Putnam's Sons); "Letters and Memorials of Jane Welsh Carlyle," edited by James Anthony Froude (Harper & Brothers); "Select Letters of Percy B. Shelley," edited by Richard Garnett (D. Appleton & Co.); Gosse's "Seventeenth Century Studies" (Scribner & Welford); "The Story of Ida," by Francesca, edited by John Ruskin (John Wiley & Sons); "The Story of My Heart," by Richard Jefferies (Roberts Brothers), and Bishop Thirlwall's "Letters to a Friend," edited by Dean Stanley (Roberts Brothers).

Science.—While the literary contributions to American science were not many, there were several of importance. "The Law of Heredity," by W. K. Brooks (John Murphy & Co.), was an acute and careful application of the Darwinian hypothesis to the facts involved in heredity, with much that indicated original research. It was one of the notable scientific books of the year. Prof. Alexander Winchell's "World Life, or Comparative Geology" (S. C. Griggs & Co.), made a valuable contribution to popular science, presenting leading geological facts in a fascinating manner. The same gift of popular exposition was characteristic of "Excursions of an Evolutionist," by John Fiske (Houghton, Mifflin, & Co.), a book likely to attract even non-scientific people by its charm of treatment. "Natural Instincts in Men and Animals," by P. A. Chadbourne, was a readable presentation of interesting facts. In "Our Northern and Eastern Birds" (R. Worthington), Edward A. Samuels offered a contribution to science, which will be prized by naturalists. The same field was largely covered by Stearn's "New England Bird-Life" (Lee & Shepard). Rev. J. H. Wythe, M. D., was the author of an interesting elementary treatise on "Easy Sermons in Vegetable Biology; or, Outlines of Plant-Life" (Philips & Hunt). Another work on the same subject was "Wonders of Plant-Life," by Sophie B. Herrick (G. P. Putnam's Sons). Students of comparative anatomy and physiology will find a use for the "Hand-Book of Vertebrate Dissection," in three parts, elaborately illustrated, by Prof. H. Newell Martin, M. D., and Dr. W. A. Moale (Macmillan & Co.). "North America," by Prof. Hayden, U. S. Geological Survey, and Prof. Selwyn, F. R. S., of Canada Geological Survey (Scribner & Welford), was a compendium of geography and travel. The more important scientific publications of the United States Government were "Cruise of the U. S. Steamship Corwin in Alaska and the Northwest Arctic Ocean, in 1881, with Notes on Glaciation, Natural History, and Anthropology," by John Muir, E. Nelson, and Dr. Irving Rosse"; "A History of the Interoceanic Canal Problem," by Lieut. J. S. Sullivan, U. S. Navy; "Twelfth Annual Report of the U. S. Geological and Geographical Survey of the Territories," by Capt. F. V. Hayden, U. S. Engineers, embracing Wyoming and Idaho, one volume being entirely devoted to the Yellowstone Park; "Report of the Fish Commission for 1880–'81–'82"; "Astronomical and Meteorological Observations made during 1879 at the U. S. Naval Observatory"; "An Account of the Progress of Astronomy in 1882," by Prof. E. G. Holden, of the Smithsonian Institution; and "Geology of the Comstock Lode and Washoe District," by George F. Becker.

The American issues of English scientific books, and of translations from Continental authors, were numerous and valuable. To the "International Scientific Series" (D. Appleton & Co.) were added "Animal Intelligence," by George J. Romanes, an excursion into the domain of what might be called the psychology of the lower orders of life; Joly's "Man before Metals," an investigation of the prehistoric human race; Hospitalier's "Modern Applications of Electricity," and "The Organs of Speech," by George Hermann von Meyer, a study of articulate sound. Frank Buckland's "Log-Book of a Fisherman and Zoölogist" (Scribner & Welford) was a vivacious narrative; and Prof. Ray Lankester's "Degeneration, a Chapter in Darwinism," an able work, worthy of attention. R. A. Proctor, distinguished as a popular expositor, has added two books to his many, "Nature Studies" (Funk & Wagnalls) and "Mysteries of Time and Space." Vol. III of "Mathematical and Physical Papers," by George Gabriel Stokes M. A., D. C. L. (Macmillan & Co.), reprinted from the original papers and journals, was a valuable contribution to scientific literature. Among the important reprints special attention may be called to the "Northwest Coast of America" (Dodd, Mead, & Co.). This embodies the results of recent ethnological researches from the collections of the Royal Museum of Berlin, published by the directors of the ethnological department.

Politics, Economics, and Social Science.—In this domain there were a considerable number of noteworthy books from American authors. One of the ablest was by Lester F. Ward, entitled "Dynamic Sociology, or Applied Social Science" (D. Appleton & Co.). The book was a masterly argument in favor of greater centralization, or what is known as paternalism in government, and an attack on the *laissez*

faire theory of government and society. "French and German Socialism," by Richard S. Ely (Harper & Brothers), gave a comprehensive and well-studied sketch of the political and social theories which are now agitating the public mind, and of the men who have represented them prominently. The theory of "Land and Labor in the United States," by W. G. Moody (Charles Scribner's Sons), was based on opposition to monopoly, pursuing in some degree the plan proposed by Mr. George. The great interest felt in the study of economics was shown in the number of works published on political economy during the year. Though some of these seem to have been primarily designed for collegiate instruction, they were so written as to appeal to the interests of the general reader. Principal among these may be designated "Political Economy," by A. L. Perry (Charles Scribner's Sons), "Political Economy," by Dr. John M. Gregory (Van Antwerp, Bragg, & Co.), and "Political Economy," by Francis A. Walker (Henry Holt & Co.). The latter of these works, by one of the most accomplished statisticians in the country (late chief of the United States Census Bureau), attracted marked attention by its searching and vigorous treatment of economical questions. A book worthy of note, by its simple and lucid discussion of complex questions, was "What Social Classes owe to Each Other," by Prof. W. G. Sumner, of Yale College. As a brief statement of fundamental principles it could not easily be surpassed. Henry George, the well-known author of "Progress and Poverty," appeared in another work further amplifying the theory associated with his name, entitled "Social Problems" (Belford, Clarke, & Co.) Luther Henry Porter's "Outlines of the Constitutional History of the United States" (Henry Holt & Co.) was a noticeable review of the period antedating the adoption of our Constitution, the debates contingent on its discussion and adoption, and the changes which have since been made in it. "People and Politics," by E. W. Hosmer, M. D. (James R. Osgood & Co.), discussed the relations of people to government in an attractive way. In "Political Facts, a Text-Book of History," by George Fitch (John B. Piet & Co.), the author gave a history of parties and their conflicts in the United States. Other works relating to economics were "The Silver Dollar," by Henry Carey Baird (Henry Carey Baird & Co.), discussing the true standard of payment in the United States; "Taxation," by Prof. J. H. Canfield (G. P. Putnam's Sons), and "Labor and Capital," by Edward Kellogg (John W. Lovell & Co.). Part II of the "American Citizen's Manual," by W. C. Ford (G. P. Putnam's Sons), was a useful hand-book of information. Among publications of a general political character, attention may be properly called to "Works of James Abram Garfield," edited by Burke A. Hinsdale (James R. Osgood & Co.), and "Works of William H. Seward," edited by George H. Baker, a revised edition (Houghton, Mifflin, & Co.).

First among the works of foreign authors, reissued in the United States, must be placed Part VIII of Herbert Spencer's "Descriptive Sociology" (D. Appleton & Co.), published under the title of "The Social History of France." In this large folio are given the elements of French social development for the past two thousand years, classified and tabulated for the use of the general student. Sir Henry Maine's "Early Law and Custom" (Henry Holt & Co.) was an able dissertation on the evolution of law. Other publications which the student of public interests will find it worth while to investigate are "False Hopes," by Goldwin Smith (John W. Lovell & Co.); "Investigations in Currency and Finance," by W. Stanley Jevons (Macmillan & Co.); "New Golden Age and Influence of the Precious Metals upon the World," by R. Hogarth Patterson (Scribner & Welford); "Principles of Political Economy," by Henry Sidgwick, M. A. (Macmillan & Co.); "The Science of Politics," by Sheldon Amos, M. A. (D. Appleton & Co.'s "International Scientific Series"); T. M. Farrer's "State in its Relation to Trade" (Macmillan & Co.); "The English Village Community," by F. Seebohm (Scribner & Welford); and "Wealth Creation," by Augustus Mongredien, with an introduction by Simon Sterne (Cassell & Co.).

Philosophy and Metaphysics.—In this direction American thought was in some respects noticeable. "The Conflict in Nature and Life" (D. Appleton & Co.) was a strong work by an anonymous author, a study of the antagonism in the constitution of things, and an attempt to elucidate the problem of good and evil. In it the conclusion was reached that in neither optimism nor pessimism could the true philosophy of life be found, but rather in meliorism, or contentment with the best that might be practicable. Dr. Asa Mahan's "Critical History of Philosophy" (Philips & Hunt) gave a history of the development of metaphysical thought and theory, viewed from the Christian standpoint. S. Harris's "Philosophical Basis of Theism" (Charles Scribner's Sons) is a work which attracted even more attention in England than it did in the United States. "Energy, Efficient and Final Cause" (Scribner's "Philosophic Series," No. 2), by Rev. Dr. James McCosh, of Princeton College, is by one of the leading metaphysicians of the English-speaking world. "Kant's Critique of Pure Reason —a Critical Exposition," by Prof. George H. Morris, Ph. D. (S. C. Griggs & Co.), was Vol. I of "German Philosophical Classics." It attempts to elucidate the most abstruse and obscure of metaphysical systems. Vol. II in the same series is a critical exposition of "Schelling's Transcendental Idealism," by Prof. John Watson, LL. D. "Man a Creative First Cause," by Rowland G. Hazard (Houghton, Mifflin, & Co.), embodies two lectures de-

livered before the Concord School of Philosophy in July, 1882. Other works of some interest were "Evolution," by R. C. Adams (G. P. Putnam's Sons); "Evolution and Christianity," by J. F. Yorke (Henry Holt & Co.); "Philosophy and Christianity," by G. S. Morris (Carter & Brothers); and "Dynamic Sociology," by L. F. Ward (D. Appleton & Co.).

The most notable of foreign works in this department of thought reissued in the United States was Dr. Henry Maudsley's "Body and Will" (D. Appleton & Co.). As an exposition of scientific materialism it must take a high rank, though the logic of the author leads to a dreary pessimism. Two works by the well-known French metaphysician, Paul Janet, entitled "Final Causes" and "Theory of Morals" (Charles Scribner's Sons), were also among the important contributions of the year to philosophy. The author finds the *rationale* for the notion of final cause in the contemplation of the moral order of the human mind. In his theory of ethics M. Janet agrees with Bentham and Herbert Spencer, in assuming that the moral sense presupposes an experience of pleasure or advantage to be derived from virtuous action, but goes further, and asserts with Kant that the autonomy of the will must finally legislate over the moral world. The seventh volume of "Philosophic Classics for English Readers" introduces us to a study of "Hegel" by Prof. Edward Caird (J. B. Lippincott & Co.). It was edited for American publication by William Knight, LL. D. "Spinoza's Ethics," translated from the Latin by William Hale White (Scribner & Welford), is accompanied by a critical dissertation and brings a little-known but great thinker within the reach of American readers.

Religion.—The works issued in the department of theology and religion included many volumes of sermons and biblical commentaries. Only a few of the latter, such as can be regarded as important contributions to religious study, will be mentioned. Dr. G. T. Ladd's "Doctrine of Sacred Scriptures" (Charles Scribner's Sons) was a scholarly and able statement of the orthodox deductions; "Grounds of Theistic and Christian Belief," by Dr. G. P. Fisher (Charles Scribner's Sons), presented the logic of religion as against agnosticism; "Critique of Design-Arguments," by Dr. L. E. Hicks (Charles Scribner's Sons), covered the ground of natural theology very fully; Baker's "Ten Theophanies" (Houghton, Mifflin, & Co.) gave an historical study of the appearances of divinity to man as revealed in the religions of the world; Vol. II of Dr. Philip Schaff's "History of the Christian Church" (Charles Scribner's Sons) was devoted to the ante-Nicene period of Christianity, A. D. 100–825. From the same publishers, and under the editorial supervision of the same author, came Vols. IV and V of the "International Revision Commentary on the New Testament." Dr. Schaff, in connection with Rev. Dr. J. Fulton, also edited the "Index Canonum" (E. & J. B. Young & Co.), being the Greek text, with a translation and a complete digest of the code of canon law of the early Christian Church before it was divided. The editorial labor of Dr. Schaff also appeared in the "Companion to the Greek Testament and the English Version" (Harper & Brothers); Schermerhorn's "Sacred Scriptures of the World" (G. P. Putnam's Sons) is a study of the sacred books of the great religions. Religious histories of considerable interest were issued in Allen's "Christian History in the Three Great Periods," and Part II of Rev. James Freeman Clarke's "Ten Great Religions," devoted to a comparison of all religions (Houghton, Mifflin, & Co.). Charles Nordhoff's "God and the Future Life" (Harper & Brothers) discussed the theory of Christian immortality. The "Scriptural Idea of Man," by Dr. Mark Hopkins (Charles Scribner's Sons), describes its contents accurately in the title. "Jesus, the World's Saviour," by Dr. Lorimer (S. C. Griggs & Co.), was a popular exposition of the theology of the Atonement. "Molinos, the Quietist," by John Bigelow (Charles Scribner's Sons), sketched the career of a remarkable figure in the mediæval Church; and "Golden Thoughts, by Miguel Molinos," was the title of a collection from the teachings of the same religious enthusiast, published by the same firm. P. C. Mozoomdar's "Oriental Christ" (George H. Ellis) presented the views of a Hindoo thinker on Christology in a singularly suggestive manner. "The Philosophical Basis of Theism," by Dr. Samuel Harris (Charles Scribner's Sons), was an examination of the personality of man with reference to his capacity to know and serve God. Bishop Samuel Harris's "Relation of Christianity to Civil Society" (Bohlen Lectures for 1883) was a valuable contribution to current religious discussion (T. Whittaker). The works of the Rev. Orville Dewey, the celebrated Unitarian preacher, including a new life, were issued by the American Unitarian Association. Rabbi J. M. Wise was the author of "Judaism and Christianity," and of "Moses, the Man and Statesman" (Bloch & Co.). From Dr. J. H. Green came a study of Old Testament history, also under the title of "Moses and the Prophets" (Robert Carter & Brothers). The last volume of "Yale Lectures on Preaching," delivered annually in the Divinity Course at Yale College, was by President E. G. Robinson (Henry Holt & Co.).

In Dr. James Strong's "Irenics" (Phillips & Hunt), a series of six volumes, the theologian attempted to show the virtual agreement between science and the Bible, Nature and the supernatural, the divine and the human in Scripture, the Old and New Testament, Calvinism and Arminianism, and divine benevolence and future punishment. "Bible Theology and Modern Thought" is the title of a work by T. L. Townsend (Lee & Shepard), setting forth the relative position of these two great forces in the conflict of modern opinion.

Rev. George A. Jackson's "Post-Nicene Greek Fathers" (D. Appleton & Co.) sketched the patristic literature and its authors, A. D. 325–370. "Gates into the Psalm Country," by Dr. M. R. Vincent (Charles Scribner's Sons), was an interesting study of the Davidic literature of the Old Testament. "Foundations of Religious Belief" (Bishop Paddock Lectures, 1883), by Dr. W. D. Wilson (D. Appleton & Co.), was the title of a collection of theological addresses to seminary students. Books which attracted more than ordinary attention were "Right and Wrong Uses of the Bible," by Rev. Heber C. Newton (John W. Lovell Co.), and Dr. Morgan Dix's "Lectures on the Calling of a Christian Woman" (D. Appleton & Co.). "Epochs of Church History," by Dr. E. A. Washburne (E. P. Dutton & Co.), treated of the great periods of ecclesiastical growth. Rev. W. C. Gladden's "Christian League of Connecticut" (Charles Scribner's Sons) discussed the possibilities of a union of sects in religious work. "English Style in Public Discourse," by Prof. Austin Phelps (Charles Scribner's Sons), was a capable manual of pulpit rhetoric. Other works dealing with the philosophical and didactic sides of theology and religion, worthy of mention, were "Atheism and Theism," by Rev. John Wilson (J. B. Lippincott & Co.); "Beliefs about the Bible," by Rev. M. J. Savage (George H. Ellis); Little's "Biblical Lights and Sidelights"; Briggs's "Biblical Study"; "Certitude, Providence, and Prayer," by Dr. James McCosh (Charles Scribner's Sons), a metaphysical study of the reasons for faith and devotion; "The Church Idea," by Dr. W. R. Huntington (E. P. Dutton & Co.), an essay on Christian unity; Sherwood's "History of the Cross" (Funk & Wagnalls); "The Doctrine of Probation, examined with Reference to Current Discussion," by Dr. G. H. Emerson (Universalist Publishing Co.); "Mystery of Creation and Man," by Dr. L. C. Baker (J. B. Lippincott & Co.); "The Outermost Rim and Beyond," by Charles Van Norden (A. D. F. Randolph & Co.); and Dr. J. G. Adams's "Inner Life" (Universalist Publishing Co.). The following were the principal collections of sermons and lectures published during 1883: Dr. Taylor's "Contrary Winds, and other Sermons" (A. C. Armstrong & Co.); "Lectures and Addresses," by Dr. Thomas Guard (Phillips & Hunt); "Principles of Agnosticism applied to Evidences of Christianity," by Dr. J. A. Harris (Thomas Whittaker); "The Radical Pulpit: Discourses in Advanced Thought," by Dr. O. B. Frothingham and Felix Adler (Truth-Seeker Co.); "Sermons," by Rev. William Cooper Mead (Dodd, Mead, & Co.); "Sermons on Future Punishment," by Dr. Randolph McKim (Thomas Whittaker); "Sermons from Plymouth Pulpit," by Henry Ward Beecher (Fords, Howard, & Hulbert); "Sermons on the Higher Life," by Dr. L. R. Dunn (Walden & Stowe); "Sermons preached in English Churches," by Rev. Phillips Brooks (E. P. Dutton & Co.); and "Sermons," by Rev. David Swing (Jansen, McClurg, & Co.).

The more important works by British and foreign authors issued under American imprint were: "An Analysis of Religious Belief," by Viscount Amberley (Truth-Seeker Co.); Dr. Robson's "Bible: Its Revelation, Inspiration, and Evidences" (Thomas Nelson & Sons); Dr. Oldenberg's "Buddha," translated by William Hoey; "Boy Life: Its Trial, Strength, and Fullness—Sundays in Wellington College, 1859–'73," by his Grace the Archbishop of Canterbury (Macmillan & Co.); Dr. Gebhard Ullhorn's "Christian Charity in the Ancient Church" (Charles Scribner's Sons); Crass's "Coals from the Altar" (Thomas Whittaker); Bithell's "Creed of a Modern Agnostic" (George Routledge & Sons); "Dorner on the Future State," edited by Dr. Newman Smyth (Charles Scribner's Sons)—an admirable statement of the orthodox views on eschatology; Canon Farrar's "Early Days of Christianity" (Cassell & Co.); Cardinal Manning's "Eternal Priesthood" (John Murphy & Co.); Dr. McLear's "Evidential Value of the Holy Eucharist: Boyle Lectures, 1870–'80" (Macmillan & Co.); Dr. Hefele's "History of the Councils of the Church," Vol. III, A. D. 431–455 (Scribner & Welford); Matthew Arnold's "Isaiah of Jerusalem" (Macmillan & Co.); "Luther and other Leaders of the Reformation," by Principal Tullock (Scribner & Welford); Zschokke's "Meditations on Life, Death, and Eternity," translated by Frederica Rowen (Houghton, Mifflin, & Co.); Beard's "Reformation of the Sixteenth Century," and Monier Williams's "Religious Thought and Life in India" (Scribner & Welford); "Rivers of Life; or, Sources of the Faiths of Man in All Lands," by Gen. J. G. R. Furlong (J. W. Bouton); "Sermons and Discourses," by the late Dr. McHale, Archbishop of Tuam (Catholic Publication Society); Dean Stanley's "Sinai and Palestine" (A. C. Armstrong & Co.); "Sacred Books of the East," Vols. XVIII, XIX (Macmillan & Co.); Dr. Bernhard Weiss's "Life of Christ" (Scribner & Welford); "The New Testament Scriptures: Their Claim, History, and Authority—Croall Lectures for 1882," by Dr. A. H. Charteris (Robert Carter & Brothers); and "Sermons," by Rev. C. H. Spurgeon, consisting of "Saint and Saviour," "The Present Truth," "Types and Emblems," "John Ploughman's Talks," "John Ploughman's Pictures," "The Treasury of David," and "Gleanings among Sheaves" (Robert Carter & Brothers); Herzog-Schaff's "Religious Cyclopædia," Vol. II (Funk & Wagnalls); and McIlvaine's "Wisdom of Holy Scriptures" (Charles Scribner's Sons).

Law.—The principal American law books were "Abbott's Supplementary Digest to the New Edition Digest" (Baker, Voorhis, & Co.); Phillips's "Treatise on the Law of Mechanics' Lien" (John D. Parsons, Jr.); Vol. II of "American Probate Reports" (Baker, Voorhis, & Co.); Vols. XIV and XV of "Blatch-

ford's U. S. Circuit Court Reports" (Baker, Voorhees, & Co.); "Great Opinions by Great Judges," by William L. Snyder, and "Law of the Federal Judiciary" (Baker, Voorhis, & Co.); Hein's "New York Supreme Court Reports," Vols. XXVIII and XXIX (W. C. Little); "Laws of Marriage," by Dr. John Fulton (E. & J. B. Young & Co.); Martin's "History of the Bench and Bar of Philadelphia" (Rees, Welsh, & Co.); Bliss's "New York Code of Civil Procedure" (Baker, Voorhis, & Co.); "The Law of Descent," by Anson Bingham (John D. Parsons, Jr.); and "The Law of Divorce," by H. Hargreaves (Bradstreet & Co.); and the following works issued by the United States Government: "Decisions of the Department of the Interior, July 1, 1881, to June 30, 1883"; "Proceedings of the Second Trial of the Star Route Cases," published in four volumes; "Statutes at Large of the United States, from December, 1881, to March, 1883. Together with "Recent Treaties"; and "Richardson's Reports of Decisions U. S. Court of Claims, December Term, 1882."

Medical. — The American medical works of most importance published in 1883 were Merrill's "Digest of Materia Medica and Pharmacy," and Mann's "Manual of Psychological Medicine and Allied Nervous Diseases" (P. Blakiston, Son, & Co.); "A Treatise on Insanity in its Medical Relations," by Dr. W. A. Hammond; Bartholow's "Therapeutics," a new edition (D. Appleton & Co.); and Sayre's "Lectures on Orthopedic Surgery and Diseases of the Joints" (D. Appleton & Co.); Vol. III of "The Principles and Practice of Surgery," by Dr. D. Hayes Agnew (J. B. Lippincott & Co.): Stearns's "Insanity—Its Causes and Prevention" (G. P. Putnam's Sons); "Physical Exploration of the Lungs," by Dr. Austin Flint (Henry C. Lea's Sons & Co.); and Part III of the surgical volume of the "Medical and Surgical History of the War of the Rebellion" (United States Government).

Miscellaneous. — Among books of interest, not classified above, the following may be noted: "Music in America," by F. L. Ritter, and "Music in England," by the same author (Charles Scribner's Sons), both comprehensive studies by a competent critic and historian; "Troja: Results of the Latest Research and Discoveries on the Site of Homer's Troy," by Dr. Henry Schliemann (Harper & Brothers); "A Little Girl among the Old Masters," a bright book on art for young people, by W. D. Howells (James R. Osgood & Co.); "History of Ancient Sculpture," by Mrs. Lucy M. Mitchell (Dodd, Mead, & Co.); "Historical Hand-Book of Italian Sculpture," by C. C. Perkins, a compact sketch of the rise and decadence of the plastic arts in Southern Europe (Charles Scribner's Sons); "Talks on Art," by W. G. Hunt (second series), the opinions of one of the most intellectual and suggestive of American artists (James R. Osgood & Co.); Clara Erskine Clement's "Outline History of Painting" (James R. Osgood & Co.); "A Fashionable Sufferer, or Chapters from Life-Comedy," a satire by Augustus Hoppin (Houghton, Mifflin, & Co.); "A Midsummer Lark," by W. H. Croffut, a humorous book of travel (Henry Holt & Co.); "The Battle of Coney Island, or Free Trade overthrown," by an Eye-Witness (J. A. Wagenseller); and "Why We Laugh," by Hon. S. S. Cox (Harper & Brothers). Among valuable Government publications may be mentioned various volumes connected with the Tenth Census Report, "Statistics of the Population of the United States," "Compendium of the Tenth Census," in two volumes; "Manufactures of the United States, Tenth Census, 1880," and "Productions of Agriculture, Tenth Census, 1880"; "Report of the Director of the Mint on Precious Metals"; and Vols. VIII and IX of "The War of the Rebellion," a compilation of the official record of the Union and Confederate armies.

LITERATURE, BRITISH, IN 1883. An examination of the list of books published in Great Britain brings to light no work of startling merit and novelty, though many have appeared which are important, and which aid in giving the year a favorable standing in the history of literature. Following will be found those more significant works in the different classes, original and translations, which have specially attracted attention:

Theology and Religious Literature.—The Gospels and Epistles have been published, with annotations, in Dr. Plummer's "St. John," Dr. Westcott's "Epistles," Canon Farrar's "Epistle to the Hebrews," in which he claims the authorship for Apollos, differing, therefore, with many of the leading modern as well as ancient scholars. Dr. Maclear has annotated the "Gospel of St. Mark," and Dr. Godet the "Epistle to the Romans." Dr. Joseph Parker has written a study of the "Inner Life of Christ," Dr. Charteris has published six lectures in defense of "The New Testament Scriptures," and Dean Stanley has published his "Addresses and Sermons" delivered in America. Canon Freemantle's work on "The Gospel of the Secular Life" is notable; Rawlinson's "Religions of the Ancient World" is a valuable contribution to the history of theology; as is also Dr. Moffat's "Church in Scotland." An important addition to extant histories of the Order of Jesus is "The Records of the English Province" of the order by Mr. Foley, the English Jesuit; while Dr. Griesinger has issued a complete history of the Jesuits from an adverse stand-point. Dr. McHale has issued his work on "The Roman Catholic Archbishops of Tuam"; the collection of English diocesan histories has been extended; and Mr. Stanley Lane-Poole has written on Mohammedanism, in eight papers collected under the title of "Studies in a Mosque."

Biography and History.—These subjects, as usual, have been largely treated. The "English Men of Letters" series includes the names, for the year, of Macaulay, Sheridan, Fielding, and

Addison. The third volume of the "Life of Bishop Wilberforce" completes the work; Dean Swift's Life has been written by Mr. Henry Craik; and an edition of the "Letters of Shelley" is edited by Mr. Richard Garnett. Of course the publication of Mr. Froude's "Letters and Memorials of Mrs. Carlyle," and of the Carlyle-Emerson correspondence, attracted general attention and discussion. Dean Bradley's "Recollections" of Dean Stanley, and Bishop Thirlwall's "Letters," have also awakened much public interest. The occurrence of the fourth centenary of Luther drew from Mr. Froude a short sketch of the great reformer; and the "Life of Luther," by Köstlin, has appeared in several editions. Among works of special interest are the sketches of Arthur Hugh Clough, by Waddington; Augustus De Morgan, the renowned mathematician, by his wife; Prof. Clerk Maxwell, by Oliver Madox Brown; and Dante Gabriel Rossetti, by Sharp. There have appeared also lives of Hegel, Shaftesbury, Hutcheson, Hamilton, and of the Greek Philosophers, as the year's contribution to philosophical biography. In science, besides the collection of "Heroes of Science," there have been published Dr. Smiles's "Life of Nasmyth," the "Life of Sir William Logan," geologist, and the "Memoir of John Duncan," who was a Scotch botanist. The field of historical biography was largely covered in 1883: The "Life of Don John of Austria," by Sir William Sterling Maxwell; "Life of Sir Henry Durand"; the "Lords Advocates of Scotland from the Close of the Fifteenth Century"; the "History of Marie Stewart," by her secretary, Claude Nau, now first printed from the original manuscript; Madame Junot's "Memoirs"; the "Life of Lord Hawke," admiral of the fleet under George II; the "Diaries and Letters of Philip Henry," and the "Diary of Richard Cocks," who was a merchant in Japan in the seventeenth century. The autobiographies of Anthony Trollope and Sir Archibald Alison are the most important of the literary biographies; while the "Retrospect of a Long Life," by S. C. Hall, has hardly attracted less attention than these. Mr. Percy Fitzgerald's "Royal Dukes and Princesses of the Family of George III," and his sketches of "Kings and Queens of an Hour"; Grace Greenwood's "Life of Queen Victoria"; Mr. Gladstone's life, with contemporaneous biography of eminent men, by Thomas Archer; and C. R. Low's "Life of General Wolseley," are to be enumerated; and Thomson's "Life of Bewick," the engraver, and Archer's "English Dramatists of To-Day," conclude our selections from among the biographical works.

In history, specifically, the leading publication is the continuation of the voluminous series of "Historical Papers," which does not lessen either in interest or importance. The "History of London," by Loftie, bears evidence of industry and painstaking. Mr. J. R. Seeley has written "The Expansion of England"; English county history has received accessions in Mr. Mason's "Norfolk," Watson's "Roman Lancashire," and Fleet's "Glimpses of our Ancestors in Sussex." Irish history is recounted by Rev. Dennis Murphy, in "The History of Cromwell's Irish Campaign," and Sir Gavan Duffy's "Four Years of Irish History"; "London under the Four Georges" is written about by Mr. Fitzgerald Molloy. Lord Stratford's "Campaign in the Crimean War" has been described by Skene, Sir William Muir's account of "The Early Caliphate" should be noted, and the list closes with Brassey's "History of the British Navy."

Travel and Adventure.—America, during 1883, was specially favored by English tourists, and we have three works giving the account of their journeyings. Mr. Edward A. Freeman's "Impressions," perhaps, attracted the most attention of the three; Mr. Phil Robinson's "Saints and Sinners" gives a rather favorable view of Mormon life; and Mr. T. S. Hudson describes lightly the country he traversed in his "Scamper through America." Mr. Freeman's "English Towns and Districts," Mr. George Augustus Sala's "Living London," and Richard Jefferies in his "Nature near London," perform the same task for England. Spain has been discussed by Gallenga in "Iberian Reminiscences," and in Mrs. Middlemore's "Stories round a Posada Fire." Mr. R. L. Stevenson has given an account of canoe-travel on the rivers of France, in "An Inland Voyage." Mrs. Burnaby has written "The High Alps in Winter." "In the Alsatian Mountains," by Katharine Lee, "On Summer Seas," by Mrs. Scott Stevenson, and Mr. A. J. C. Hare's "Cities of Southern Italy and Sicily," with the "Walk in Hellas," of Mr. Snyder, are specimen books of Continental travel. Mr. John Geddie's "Historical and Descriptive Account of Russia," and a translation from the Polish, entitled "Siberian Pictures," conclude the volumes of European travel. The East has been liberally described in a number of interesting works: "Moorish Lotus-Leaves" is the rather fanciful title of a book by Messrs. Cowan and Johnson. Cairo is considered in "Five Months at Cairo and in Lower Egypt," by Gabriel Charmes, and Miss Whateley's "Scenes from Life in Cairo." The subject of pyramid study is advanced in Mr. C. Staniland Wake's "The Origin and Significance of the Great Pyramid," and Mr. Petrie's "The Pyramids and Temples of Gizeh." "Egypt and the Egyptian Question," by Mr. Mackenzie Wallace, created a sensation in England by its plain treatment of the subject. Capt. Burton and Commander Cameron's "To the Gold Coast for Gold," Col. Durnford's "A Soldier's Life in South Africa," Mr. Mitford's "Through the Zulu Country," Mr. Ellis's "Land of Fetish," and Rev. Mr. MacDonald's "Africana," are the principal works in African travel. Two books which have been generally praised are Miss Bird's "Golden Chersonese," and Prof. Haeck-

el's "Visit to Ceylon." Mrs. Murray-Aynsley has described "Our Tour in Southern India," and Mr. Tolmer has issued his very entertaining volume of "Reminiscences." "The Land of the Lion and the Sun," by Dr. Wills, and "Across Chrysê," by Mr. Colquhoun, are also volumes of Asiatic travel. General voyaging has been described in a number of pleasing works, including "The Voyage of the Wanderer," Mrs. Bridge's "A Lady's Travels round the World," Dr. Coppinger's Pacific "Cruise of the Alert," Miss Gordon Cumming's "Fire Fountains," being her account of a visit to the Sandwich islands, Mr. Bradshaw's "New Zealand as it Is," and Powell's "Among the Cannibals of New Britain."

Science.—Philosophy and social science have been treated by some of the leading thinkers of the day: Mr. Herbert Spencer has published the fifth part of his "Political Institutions," Mr. Sidgwick has issued his "Principles of Political Economy," and other works in these directions are Mongredieu's "Wealth Creation," Farrer's "The State in its Relation to Trade," and the "Free-Trade Speeches" of the Rt. Hon. C. P. Villiers. More strictly philosophical are "The Ultimatum of Pessimism," by James William Barlow; "Prolegomena to Ethics," by the late T. H. Green; Dr. Pressensé's "Study of Origins," Spinoza's "Ethics," translated by W. H. White, Mr. W. D. Ground's examination of Herbert Spencer's "Structural Principles," Mr. Courtney's "Studies in Philosophy," Mr. Gostwick's "German Culture and Christianity," and Mr. Stuckenburg's "Life of Kant." In the literature of evolution we have Hick's "Critique of Design Arguments," Cobbe's "Darwinism in Morals," Wilson's "Chapters on Evolution," and Zimmerman's "Theories of Darwin." Socialism is reviewed in Kaufman's "Socialism and Communism in their Practical Application," "French and German Socialism in Modern Times," by Ely; and Jevons's "Methods of Social Reform." An important work on international law is "The Rise and Growth of the Law of Nations," by Mr. John Hosack. The subjects in natural science have been considered in a number of prominent works: first among these are the two volumes continuing the series of official reports of the "Voyage of the Challenger"; Martin Duncan has published a popular "Natural History" in six volumes. The prolific Mr. Proctor has published a volume which he calls "Nature Studies," and an essay on "The Great Pyramid," in which he combats the theories of its occult intent. Mr. Francis Galton has continued his peculiar line of investigation in "Human Faculty," a collection of essays. Miscellaneous works in various departments of science are Marshall's work on "The Frog," Hopley on "Snakes," Wall's "Indian Snake-Poisons," "Gold, its Occurrence and Extraction," by Lock; "Glass in the Old World," by Wallace-Dunlop; and "Man before Metals," by Joly. In language and literature we have had a large number of notable works, general and special. Of the first of these should be mentioned Anna Buckland's "Story of English Literature," and Mr. T. S. Perry's "Essays on English Literature," Mr. Saintsbury's "Short History of French Literature," Horn and Anderson's "Scandinavian Literature," and Mr. Gosse's "Seventeenth Century Studies" in English poetry. An addition to the Bacon controversy has been made in the publication of Mrs. Pott's edition of Bacon's "Promus of Formularies and Elegancies," designed to display the frequent appearance in Shakespeare's writings of mannerisms peculiar to Bacon. Dr. Ingleby has written "Shakespeare's Bones," with a view to encourage the examination of the great dramatist's grave. "Shakespeare as an Angler," and "Shakespeare as a Lawyer," have been studied by Rev. H. N. Ellacombe and Mr. Heard, respectively. "Notes on Shakespeare's Plays," by Mrs. Kemble, "Animal Lore of Shakespeare's Time," by Emma Phipson, and "Shakespeare's Flora," by L. H. Grindon, are further efforts toward the elucidation of these subjects. "Gay's Fables," with a memoir, have been edited by Mr. Dobson, and "Milton's Sonnets" by Mr. Pattison. A "Sketch of French Literature" has been published by Mr. Saintsbury, who has also edited a collection of "French Lyrics" for the Parchment Library. G. Vigfusson and F. York Powell have issued a volume of "Old Northern Poetry," reaching to the thirteenth century. Mr. M. T. Tatham has made a prose translation of the "Philoctetes" of Sophocles, and Mr. Morshead has translated into English verse "The Suppliant Maiden" of Æschylus. Mr. C. A. M. Fennell has edited Pindar's "Nemean and Isthmian Odes," and a prose translation of Dante's "Purgatorio," by the late W. S. Dugdale, has been published with the original text. Mr. Sellar's "Roman Poets of the Augustan Age," and Mr. Simcox's "History of Latin Literature," complete our citations of the classical work of the year. The "Encyclopædia Britannica," revised edition, has reached its sixteenth volume (M), and Dr. Ogilvie's "Imperial Dictionary" has appeared in a new edition. The second volume has appeared of "The Halkett and Laing Dictionary of Anonymous and Pseudonymous Literature." Mr. W. J. Van Eys has issued the first grammar ever published in English of the Basque language.

Works on Art.—Perrot and Chipiez's works on "Art in Ancient Egypt," and "Art in Chaldæa and Assyria," deserve the first notice in this department. Other works of interest are Scott's "Renaissance of Art in Italy," Mrs. Clement's "Outline History of Painting," Mr. Wilmot Buxton's "English Painters," Lucy Crane on "Art and the Formation of Taste," Mr. Ruskin's four Oxford lectures on the "Art of England," and Tristram Ellis's "Sketching from Nature." Somewhat more practical in

character is Wheatley and Delamotte's "Art-Work in Porcelain, Gold, and Silver."

Poetry and Essays.—The year has not been remarkable for its poetic contributions to literature. Mr. Browning has published "Jocoseria," and Mr. Swinburne "A Century of Roundels." Edwin Arnold has given forth his "Pearls of the Faith" and "Indian Idyls." Mr. J. O. Wright has made a collection of the poems of John Ruskin, Mr. Gosse's work is entitled "On Viol and Flute," Mr. F. W. Myers appeared in "A Renewal of Youth," Mr. George Meredith has published "Poems and Lyrics of the Joy of Earth." Other works deserving of mention are a new collection of Austin Dobson's selected poems, called "Old World Idyls," Mr. Lewis Morris's "Songs Unsung," Justin McCarthy's "Serapion," Mr. Charles Merivale's "The White Pilgrim," and Canon Dixon's "Mano." In Essays and Sketches we have Mr. Froude's "Short Studies on Great Subjects," 4th series, Myers's "Essays," divided into "Classical" and "Modern," in the two volumes issued; Rev. Paxton Hood's "Scottish Characteristics," and Mr. Phil Robinson's pleasant contribution to literary ornithology, "Poets' Birds." Of a more specifically historic character are Mr. Ashton's "Humor, Wit, and Satire of the Seventeenth Century," Mr. Jones's "History of Crowns and Coronations," and Mr. A. G. Hill's "Organs and Organ-Cases of the Middle Ages and the Renaissance."

Fiction.—From the late Anthony Trollope's works left in manuscript there were published last year three: "Land-Leaguers," "Kept in the Dark," and "Mr. Scarborough's Family." Wilkie Collins was heard from in "Heart and Science," Mr. Black published "Yolande" and "Shandon Bells." Mr. Thomas Hardy also produced two new works, viz., "The Strange Adventures of a Milkmaid" and "Two on a Tower." Mr. James Payn published "Kit" and "Thicker than Water"; Mrs. Oliphant, "The Ladies Lindores," "It was a Lover and his Lass," and others; the author of "Molly Bawn" gave us "Rossmoyne" and "Portia"; Mrs. Forrester "June," and Miss Rhoda Broughton "Belinda." Clark Russell published "A Sea Queen," Miss Yonge "Stray Pearls," Miss Macquoid "Her Sailor Love," Walter Besant "All in a Garden Fair," and Robert Buchanan "Love me Forever." From Manville Fenn we had "Eli's Children," from Mrs. Leith Adams "Geoffrey Sterling," from Joseph Hatton "A Modern Ulysses," and from F. W. Robinson "Women are Strange." Mary Cecil Hay has produced "Bid me Discourse," Hawley Smart "At Fault," and Laurence Oliphant "Altiora Peto." Frances Eleanor Trollope has written "Like Ships upon the Sea," and Miss Betham Edwards "Pearla." From Miss Braddon we have had "The Golden Calf" and "Phantom Fortune," from Annie Thomas "Friends and Lovers" and "The Colthorpe Cousins," and from Florence Marryat "Facing the Footlights" and "Peeress and Player." D. Christie Murray has published "By the Gates of the Sea" and "Hearts."

LITERATURE, CONTINENTAL, IN 1883. The record for the present year is more than usually full and interesting. In some respects activity in literature has been greater than in 1882, although there are no very startling facts to lay before the reader. As heretofore, we give our *résumé* in the alphabetical order of countries.

Belgium.—In religion and morals the most important publication of the year is M. G. d'Alviella's "Contemporary Evolution in Religion among the English, the Americans, and the Hindoos." It has attracted considerable attention, as being no less liberal than learned and exact. Laveleye has brought out a new edition of his "Contemporary Socialism," and various other writers have contributed works of value in this department. The study of history continues to be a favorite with the Belgians. Vanderhaegen's "Bibliotheca Belgica" has been completed; and M. Namèche has brought his "Cours d'Histoire Nationale" down to the period of Charles V's reign in the Netherlands. Numerous monographs on local history have also appeared. Since the appointment of a Minister of Public Instruction in Belgium much attention has been given to educational questions, and several volumes have been published this year on the subject. Other subjects have received their fair share of notice—such as political economy, philology, the fine arts, etc. In the domain of the history of letters is M. F. Nève's "Literary Epochs of India," which is regarded as important and valuable. Besides the numerous publications in French, it deserves to be noted that Flemish literature is displaying more power and wider range than usual. Several volumes of poetry also have appeared, and dramatic literature has been very productive. In the death of Hendrik Conscience, Flanders has lost its greatest writer in his special line, and the demonstrations in his honor, at the time of his funeral in Brussels, are said to have been more imposing than any which have yet taken place, even at the burial of kings.

Denmark.—The number of books published in Denmark this year is about the same as in 1882; but there are few works which have appeared that can be regarded as of much importance. Romances and novels are more numerous than lyric poetry and dramas. H. Goldschmidt has produced "Tales and Pictures of Real Life," which are quite equal to his previous contributions. Schandorph, Gjellerup, Elmgaard, Nielsen, and others, have done their share in this kind of literature, though the critics are not enthusiastic over any of their publications. Poetry and the drama offer nothing special for notice. General and political history has been but slightly cultivated, while on the history of literature and art and of allied topics the publications have been numerous. G. Brandy has brought out a capital vol-

ume of criticism entitled "The Romantic School in France," and in his "Men and Works" he has collected a number of valuable essays about modern authors. A new history of Danish literature has been begun by P. Hansen; and several works on the fine arts have appeared. The centenary celebration of the distinguished theologian and writer, Grundtvig, gave rise to a number of publications; as did also the commemorative festival in honor of the fourth centenary of the birthday of Martin Luther. The autobiography of the Danish primate, Martensen, has aroused not only interest but more or less of sharp contradiction and comment. In addition may be named here several good books of travel, a volume or two on philosophy, and a few contributions to popular questions of the day, such as "Liberty," "Education," etc.

France.—Literary activity in the republic has flowed in about the usual channels in 1883. Poetry is of small account this year. Victor Hugo has furnished nothing new, but has given his energies to rendering exact a complete edition of his works. Other writers of verse in France at present hardly deserve special mention. The novel seems to be assuming the normal form of the literature of to-day. Zola and his so-called "naturalistic" school have not produced much this year; but Halévy, Theuriet, Ch. Edmond, F. du Boisgobey (called "the French Wilkie Collins"), and a number of others, have been as active and successful as ever. Literary and philosophical criticism has been almost at a stand-still; but, on the other hand, the publication of documents and hitherto unpublished papers is furnishing large material for work in this department at no distant day. These documents and papers refer to Madame d'Epinay, Madame de Chateaubriand, M. de Rémusat, the "Diplomates of the Revolution," the "Captivity and Death of Louis XVII in the Temple," "Les Rois Frères de Napoléon I," etc. Religious history supplies several publications of merit. Kühn's "Life of Luther" is excellently done; Bersière's "Coligny" deserves much praise, as does also Lagrange's "Life of Mgr. Dupanloup." One of the most curious and peculiarly French publications, more or less of a religious character, are the brilliant skeptic and critic Renan's "Souvenirs of his Childhood and Youth." They are pronounced to be of much value (like the "Confessions" of Rousseau), though marked by a good deal of pretension, egotism, and *naïveté*, and they may be termed a remarkable psychological document. The Roman history of M. V. Duruy has reached its sixth volume, and is a work of superior merit in a well-trodden field. Mention also should here be made of MM. Perot and Chipier's "History of Ancient Art"; De Vaux's "Palestine"; the Count de Paris's volumes V and VI of his "History of the American Civil War"; the documents relating to the Spanish Succession, Louis XIV, and William III., etc. During 1883 great gaps have been made in the ranks of French authors. Jules Sandeau, Laprade, H. Martin (the national historian), François Lenormant, and others of less note, have gone the way of all the earth. Their loss is very great to France, and in measure to all civilized nations.

Germany.—If one may trust statistics, literary activity in Germany during 1883 has been fifteen times as great as in the British Empire. This is probably so, but it can hardly be asserted of the highest and most enduring form of literature. In history we have the venerable Leopold von Ranke's "Weltgeschichte," which gives, in clear impressive outline, the history of the Roman Empire, and depicts, in a manner worthy of its importance, the gradual rise of Christianity and its final fusion with the Roman Empire, from a purely historical point of view. Able critics pronounce this to be far superior to any contemporaneous historical production in Germany or elsewhere. Also, O. H. am Rhyn's great work on the "History of Civilization" has reached its conclusion in a sixth volume; and Hans Prutz, likewise, has dealt freely and with tolerable fullness on the history of the Crusades, and their relationship to art and civilization. Biographical literature has been more than usually rich this year. O. Baisch's life of the German landscape-painter, J. C. Reinhart (1847), is full of interesting matter. Another volume of correspondence between W. von Humboldt's secretary and a lady friend has been issued; Schopenhauer's personal recollections and a portion of his letters have been published; and a life and critical estimate of R. Wagner have made their appearance. Philosophy has little or nothing of moment to show this year. A few volumes on Oriental systems, Hartmann's Pessimism reviewed and examined, Inductive Logic, etc., are all that can be named in this connection. Lyric poetry has been largely and successfully cultivated by numerous writers; and the drama, considerably influenced by Schopenhauer's philosophy, has been enriched by the pessimistic tragedies of Richard Vosz. Most of the dramatists are also writers of novelettes, and they deal with all sorts of subjects and in all sorts of ways. The writers of novels and romances are very numerous, and the country has been flooded with their productions. Paul Heyse stands at the head in his special line. Georg Ebers, Felix Dahn, Alfred Meissner, to say nothing of inferior names, have contributed abundantly to the romance literature of the year. F. Spielhagen, who is ranked as the most eminent novelist of the day, has published his criticisms on works of fiction, and gives it as his opinion that the novel is "the only admissible epic of the present." W. Scherer's "History of German Literature" has reached its conclusion, and is highly praised by the critics on account of its style and fullness of thought. O. Wedingen's work on the same subject is regarded as of inferior merit.

The literature relating to Goethe and Schiller still receives a large share of attention, and it is presumable that Germany will never hear too much about those mighty men of genius.

Holland.—The record of 1883 as to Holland is necessarily brief and not very important. There has been manifested a strong disposition to make large and frequent use of the dialects of the different provinces, in works of travel and narrative, so that every province is said now to have its representative in literature. A number of interesting books about the Dutch East Indies have appeared. Although not much verse has been written this year, some good poems have found their way into the periodicals. The novels of 1883 have been numerous and successful, and several historical novels have shown what Dutch writers are capable of doing in this line. History and philology have received their usual share of attention. De Jonge's "Rise of the Dutch Empire in the East Indies" is being continued by Mr. Van Deventer; and M. Rogge is editing a list of the editions and translations of all Grotius's works, and he is aided by competent scholars in rendering due justice to the great scholar and statesman. Prof. de Vries is slowly continuing the "Woordenboeck," and Verdam has published the sixth part of his "Dictionary of Middle-Dutch." The second volume also of Spinoza's "Opera" has made its appearance.

Hungary.—During the year much attention has been bestowed upon collected editions of the great writers of the country, such as John Arany, Antony Csengery, etc. The first volume, too, has appeared of Count Széchenyi's Memoirs, edited by A. Zichy. The great novelist of Hungary, M. Jokai, sustains his reputation in "The Echo of Forty Years." Since the death of Tourguénief, it is asserted that there is no writer in Europe to whom Jokai yields. Dramatic literature has been characterized by much activity and fair production. In history, Hungarian *savants* have been a good deal occupied in collecting and editing original materials, such as the "Codices Diplomatici," "The Archives of the Fugitives," "Hungary and the League of Cambray," etc. A number of excellent works on the recent history of the country have also been published. In science proper, some progress has been made, and in philology and linguistics Hungarian scholars have done their share.

Italy.—One of the most important events in the literary progress of Italy is the creation of a great "Istituto Storico," or Historical Institute. There is excellent promise in such an institution, and it will materially aid the strong national desire to compile an elaborate and definitive history of Italy. Some fifty years ago Cæsare Cantie conceived the idea of a universal history, at which he has been at work ever since, and has been constantly improving and enlarging. It is hoped by his countrymen that he will live to bring it to a completion. Minghetti, one of the veterans of Italian literature, is still at work, and has published several more volumes on politics and economy. Illustrated works have met with much success, such as the "Illustrazione Italiana," and "La Natura"; and illustrated editions of standard writers have become more and more popular. A. de Gubernatis has established the "Revue Internationale," which is to appear twice a month, and has already made its mark. In brief, there has been, during 1883, a large number of literary, artistic, biographical, economical, and scientific publications; and there is no room to doubt that, with her splendid advantages, Italy will always hold a prominent position in the literature of the world.

Norway.—Notwithstanding the prevalence of considerable political disturbance in Norway for several years, activity in literature has not subsided. It has become perhaps rather too controversial and polemical; but in general it has shown, during 1883, no little point and vigor. The poet Björnstjerne Björnson took his share in politics, but has, nevertheless, published two dramas which are pronounced by the critics to be of a high order of merit. The usual number of novels has appeared from A. Garborg, Jonas Lie, A. Kielland, and others; but lyric poetry has been very scanty, all comprised in two collections of polemical verses. A contribution to the history of literature has been made by H. Jaeger, in his "Norwegian Authors" (1842–'57); and also a contribution to the history of music, in A. Grönvold's "Norwegian Musicians." There have also been a few publications in science, logic, mental philosophy, church history, and classics; but they are not of special importance in the year's literary progress.

Poland.—The literature of Poland has been to a considerable degree influenced by the fact that 1883 beheld the two-hundredth anniversary of the raising the siege of Vienna. Besides elaborate works, like "John Sobieski and his Age," and "The Campaign of Vienna," numerous monographs, historical, archæological, and military, have been published, relating to Sobieski and his deeds, as well as the famous siege of Vienna; and the anniversary festival gave rise to many poems, lectures, speeches, etc. The "Letters of Sobieski to his Wife" were also brought out in a new edition for popular use. Some efforts have been made in lyric poetry and the drama; but the outcome is not very striking or particularly valuable. The novel-writers have displayed about their usual activity, and have generally sustained their previously earned reputation. Two or three additions have been made to ecclesiastical history and literature; the writings of Supinski, the first of Polish economists, have been published in five volumes; and the valuable correspondence of the poet Krasinski has now been issued in complete form. Also, Estreicher's very full and useful work, "Po-

lish Bibliography," has reached its eighth volume.

Russia.—In the early part of 1883 Tourguénief, the great Russian writer, published his last two contributions to literature, "Poetry in Prose" and "Clara Militch." His death caused wide-spread lamentation, not only in his native land, but everywhere where his genius and wonderful power have been felt and recognized. Among living writers of romance and fiction, Stchedrin and Garshin have produced a number of excellent novels and tales; but besides these there has been hardly anything published which is above mediocrity. In poetry and the drama nothing of moment has been produced; but in the domain of science better results have been attained. Church history has been enriched by the publication of a number of works, especially the twelfth and last volume of the "History of the Russian Church," by the late Metropolitan of Moscow, Makary. The Imperial Russian Historical Society has issued four more volumes of its "Transactions" (vols. 35 to 38), in which is contained a large amount of interesting and valuable matter. History in general has been largely cultivated; and anthropology has been admirably treated in a work by Ziber, entitled "Sketches of Primitive Economic Culture." Social science and legal subjects have been treated of with more than usual fullness this year; and art, archæology, and ethnography have received their full share of attention. Also, numerous books of travel have appeared, and the contributions to geographical science have been of especial value.

Spain.—The number and variety of books printed in Spain this year were unusually large, both original and translated, in the departments of science and letters. F. Picatoste has published a "Popular Dictionary of the Spanish Language," and R. Barcias has completed the fifth and last volume of his "Complete Etymological Dictionary of the Spanish Language." Provincial history has been freely cultivated, as of Leon, Galicia, Navarre, Catalonia, etc. The dialects, too, have excited much attention, such as the Provençal in the east, the Gallego and Bable in the west, and the Basque in the north, and a number of works in relation to these has been published. Light literature, in the way of novels, poetry, humorous works, etc., has considerably improved. Alarcon, Valera, Galdós, Gonzalez, and many others, have been at work, with good success. Additions to the drama have been few, but the lower dramatic art, called *juguetes cómicos*, a sort of composition resembling the French *vaudeville*, has become more in vogue than ever. The Royal Geographical Society has labored diligently, and its fourteenth volume of Transactions has appeared. The text-printing societies in the Peninsula have brought out a number of important works. Among these are Vol. II of "Cancionero General," "El Cultu Sevillano," "Documentos Inéditos para la Historia de España," together with photo-lithographic reproductions of books printed in the fifteenth century.

Sweden.—Literary activity in Sweden this year has been steady and fairly productive. An original work on Shakespeare has appeared, which is much praised by the critics; and Tegnér's G. M. Armfelt, "the Northern Alcibiades," the favorite of Gustavus III, is already rated as a standard on this topic. In history, several competent workers have produced good fruit, and illustrated books have attained great popularity. The most prolific and gifted of the younger Swedish poets is Strindberg; he has furnished his countrymen with a collection of lyrics, which are largely satirical and manifest much originality. Dramatic literature, novels, essays, tales, poetical anthologies, and the like, have been quite numerous, and have met with gratifying success. Nordenskiöld has published the second and third volumes of his work, containing the scientific observations made by the Vega expedition. Among scientific productions may be named here Prof. Mittag-Leffler's "Acta Mathematica," and the conclusion of the famous posthumous work of Elias Fries, entitled "Icones Selectæ." To these should be added Ridqvist's great work, "The Laws of the Swedish Language," the first volume of which appeared some thirty years ago; and a collection of the philosophical writings of the eminent Swedish philosopher, J. C. Bostrom. The beautiful heraldic work by Klingspor, entitled "Baltisches Wappenbuch," is completed, and has excited universal admiration.

LOUISIANA. State Government.—The following were the State officers during the year: Governor, Samuel D. McEnery, Democrat; Secretary of State, William A. Strong; Treasurer, E. A. Burke; Auditor, Allen Jumel; Attorney-General, John C. Egan; Adjutant-General, P. G. T. Beauregard; Superintendent of Public Instruction, E. H. Fay; Register of Lands, J. G. Richardson; Commissioner of Agriculture and Immigration, W. H. Harris. Judiciary—Supreme Court: Chief-Justice, Edward Bermudez; Associate Justices, Felix P. Poché, Robert B. Todd, Thomas C. Manning, and Charles E. Fenner.

Legal Decisions.—On the 5th of March, decisions were rendered by the Supreme Court of the United States in several cases affecting the State. The allied cases of the State of New Hampshire and the State of New York against the State of Louisiana were original actions to enforce the payment of consolidated bonds of Louisiana. The Legislatures of the plaintiff States had passed acts permitting their respective Attorney-Generals to bring suit upon such bonds as should be assigned to the State by citizens thereof.

Chief-Justice Waite quotes the eleventh amendment to the Constitution, which provides that the "judicial power of the United States shall not be construed to extend to any suit in law or equity, commenced or prosecuted

against one of the United States by citizens of another State, or by citizens and subjects of any foreign state." He then says:

Under the operation of this amendment the actual owners of the bonds and coupons held by New Hampshire and New York are precluded from prosecuting these suits in their own names. The real question, therefore, is whether they can sue in the name of their respective States after getting the consent of the State; or, to put it in another way, whether a State can allow the use of its name in such suit for the benefit of one of its citizens. The language of the amendment is in effect that the judicial power of the United States shall not extend to any suit commenced or prosecuted by citizens of one State against another State. No one can look at the pleadings and testimony in these cases without being satisfied beyond all doubt that they were in legal effect commenced and are prosecuted solely by the owners of the bonds and coupons. The State and Attorney-General are only nominal actors in the proceeding. The bondowner, whoever he may be, is the promoter and manager of the suit. He pays the expenses, is the only one authorized to conclude a compromise, and if any money is ever collected it must be paid to him without even passing through the form of getting into the treasury of the State. The State is nothing more nor less than a mere collecting agent of the owners of the bonds and coupons, and, while the suits are in the name of States, they are under the control of individual citizens, and are prosecuted and carried on altogether by and for them.

It is contended, however, that notwithstanding the prohibition of the amendment the States may prosecute the suits because, as "'sovereign and trustee of its citizens,' a State is clothed with the right and faculty of making an imperative demand upon another independent State for payment of debts which it owes to the citizens of the former." There is no doubt but one nation may, if it see fit, demand of another nation payment of debts owing by the latter to citizens of the former, but States are not nations, either as between themselves or toward foreign nations. They are sovereign within their spheres, but their sovereignty stops short of nationality. Their political status at home and abroad is that of States in the United States.

If the citizens themselves had ample means of redress without the intervention of their Government under the Constitution as it was originally construed, the citizen of one State could sue another State in the courts of the United States for himself, and obtain the same relief that his State could get for him if it should sue. Certainly when he can sue for himself there is no necessity for the power in his State to sue in his behalf, and we can not believe it was intended by the framers of the Constitution to allow both remedies in such a case. Therefore the special remedy granted to the citizen himself must be deemed to have been the only remedy a citizen of one State could have under the Constitution against another State for redress of his grievances, except such as the delinquent State saw fit itself to grant.

In other words, the giving of direct remedy to the citizen himself was equivalent to taking away any indirect remedy he might otherwise have claimed through the intervention of his State, upon any principle of the law of nations. It follows that when the amendment took away the special remedy there was no other left; nothing was added to the Constitution by what was thus done; no power taken away by the grant of special remedy was restored by the amendment. The effect of the amendment was simply to revoke the new right that had been given and leave the limitations to stand as they were. The evident purpose of the amendment was to prohibit all suits against States by or for citizens of other States, or aliens, without the consent of the State to be sued, and in our opinion one State can not create a controversy with another State within the meaning of that term as used in the judicial clauses of the Constitution by assuming the prosecution of debts owing by other States to its citizens. Such being the case, we are satisfied that we are prohibited both by the letter and spirit of the Constitution from entertaining these suits, and the bill in each of them is dismissed.

The two cases of Elliott and others against the Treasurer and Auditor of the State of Louisiana were a suit in equity and one for a *mandamus* to compel the executive officers of the State to comply with the contract between the State and the bondholders, made in 1874—that is, to go on collecting the 5½ mills for the debt fund, which was authorized by the previous Constitution, without any special levy by the Legislature. It also put at issue the validity of the provision of the debt ordinance of 1879, which remitted the January interest of that year on State consols, and turned over the money collected to the general fund.

Among the more important parts of Chief-Justice Waite's opinion are the following:

It is clear that it was the intention of the State of Louisiana to enter into a formal contract with the holders of the bonds issued under the act of 1874, to levy and collect an annual tax of five and a half mills on the dollar of assessed value of all real and personal property in the State, and to apply the revenue derived therefrom to the payment of the principal and interest of the bonds, and to no other purpose. It is equally clear that the object of the State in adopting the debt ordinance in 1879 was to stop the further levy of the promised tax, and to prevent the disbursing officers from using the revenue from previous levies to pay the interest falling due in January, 1880, as well as the principal and interest falling due thereafter. That the Constitution of 1879, on its face, takes away the power of the executive officers to comply with the terms of the act of 1874 can not be denied, as against everything but the outstanding bonds and coupons. This Constitution is the fundamental law of the State, and it is only invalid so far as it impairs the obligation of contracts, on the faith of which the bonds and coupons were taken by their respective holders. The question, then, is whether the contract can be enforced, notwithstanding the Constitution, by coercing the agents and instrumentalities of the State, whose authority has been withdrawn in violation of contract, without having the State itself in its political capacity a party to the proceedings; the relief asked will require the officers against whom the process goes to act contrary to the positive orders of the supreme political power of the State, whose creatures they are, and to which they are ultimately responsible in law for what they do. They must use the public money in the treasury and under their control in one way, when the supreme power has directed them to use it in another, and they must raise more money by taxation, when the same power has declared that it shall not be done.

The remedy sought by the bondholders implies power in the judiciary to compel the State to abide by and perform its contracts for the payment of money, not by rendering and enforcing a judgment in any ordinary form of judicial procedure, but by assuming control of the administration of the fiscal affairs of the State to the extent that may be necessary to accomplish the end in view. In the opinion of this court the judiciary has not this power. It is insisted, however, that the money already in the treasury collected from the tax levied for the year 1879 constitutes a trust fund of which individual defendants are *ex-officio* trustees, and that they may be enjoined as such trustees from diverting it from the purpose to which it was pledged under contract. But the indi-

vidual defendants are the several officers of the State who, under the law, compose the board of liquidation. That board is in no sense the custodian of this fund. The Treasurer of the State is the keeper of the treasure collected from this tax, just as he is the keeper of other public moneys. He holds them, but only as agent of the State, not as a trustee. If there is any trust, the State is trustee, and, unless the State can be sued, the trustees can not be enjoined. The officers owe their duty to the State alone, and have no contract relations with bondholders. There is nothing in the cases cited by counsel which, in the opinion of the court, authorizes the relief which is asked. When a State submits itself without reservation to the jurisdiction of the court in a particular case, that jurisdiction may be used to give full effect to what the State has, by its act of submission, allowed to be done; and if the law permits the coercion of public officers to enforce any judgment that may be rendered, then such coercion may be employed for that purpose, but this is very far from authorizing courts, when the State can not be sued, to set up its jurisdiction over officers in charge of public moneys. The decree in the suit in equity, and judgment in that for mandamus, are affirmed.

Finances.—The State Treasurer had the following cash balances on hand to the credit of the various funds, March 31, 1883:

General fund, 1883	$30,582 82
General fund, 1882	4,688 81
General fund, 1881	8,109 24
General fund, 1880	3,493 04
General fund, 1879	3,593 12
Current school fund, 1883	.....
Current school fund, 1882	62,197 71
Current school fund, 1881	7,708 26
Current school fund, 1880	4,608 82
Current school fund, 1879	2,242 27
Charity Hospital, 1881	65 87
Interest-tax fund, 1882	55,425 15
Interest-tax fund, 1881	98,109 80
Interest-tax fund, 1880	91,497 80
Interest-tax fund, 1879	810,149 45
Interest-tax fund, 1878, and previous	4,901 78
Levee construction and repair, 1878	1,652 86
Levee construction and repair, 1877, and previous	821 22
Charity-Hospital fund, 1882	20 45
Poll-tax fund, 1879	66 87
Levee and drainage fund	17,540 06
Free-school fund	14,848 59
District-levee fund	7,188 41
General-engineer fund	9,078 56
Interest and redemption $5 bonds	3,111 92
Judicial-expense fund	10,877 49
Ouachita subsidy	141 14
Caddo subsidy	3,375 70
Militia	950 00
Trust fund	300 00
Repairs of State-House	20 00
General account	18,619 63
Total	$775,876 76

The Treasurer also made the following statement:

The bonded debt is about $11,800,000, requiring at 2 per cent. say $236,000 per year: the Treasurer has paid reduced interest for 1880, $126,432; for 1881, $127,054; for 1882, $112,256—showing that over half the bondholders have accepted the proposal to take 2 per cent. for five years, and 4 per cent. thereafter.

State Lands.—Much controversy has taken place regarding a contract entered into between Gov. Wiltz and John McEnery for the recovery of lands due the State from the United States. It was claimed that "the contract provides that scrip shall be issued to the contractor, which he can place on any land. In other words, when he recovers 1,000 acres of seamarsh, worth say 10 cents an acre, he gets scrip for 500 acres, which he can place on other land belonging to the State, worth say $1 per acre. Or if the tract recovered shall be five eighths swamp and three eighths good land, he may take the latter and leave the State the least valuable portion, and have besides a little surplus scrip to put somewhere else."

It was also claimed that under the terms of the contract the State had been defrauded with the connivance of Register Richardson, who resigned on the 30th of June. Gov. McEnery, when attacked on account of this contract, replied that it was in full force when he came into office, and he had no power to annul it.

Levees.—The drainage from over 1,200,000 square miles of the Mississippi valley, concentrated above Louisiana's northern boundary, can only be kept within the banks of the Mississippi by a line of levees extending from Arkansas on one side and from Baton Rouge on the other, to the Gulf of Mexico, 720 miles. Add to this the 305 miles of levees built along the interior streams—the Lafourche, Atchafalaya, Des Glaizes, Black, Tensas, and Roundaway—and we have a total of 1,025 miles.

From Jan. 1, 1879, to May 31, 1883, the State expended for levees $1,617,311, out of a total of cash expenditures for all purposes of $8,876,872—over 18 per cent. From 1869 to 1879 the cash expenditures for levee purposes amounted to $8,733,121. Since 1869, then, Louisiana has spent for levees $10,350,432.

A Levee Convention, consisting of representatives from thirty-four parishes and several railroads, was held at Baton Rouge on the 18th and 19th of June. The Governor submitted a message containing various recommendations. The action of the convention was embodied in the report of a committee on the Governor's message and in resolutions. The following are the essential portions of the report:

1. The inauguration of a plan to prevent the cutting of the levees, and the use of them as highways. Under existing laws, the local authorities are not invested with sufficient power to prevent the use of the levees as roadways, and to impose proper penalties. We would therefore recommend the passage of laws giving to the police juries full and ample power to pass laws and ordinances defining and providing adequate punishment for such offenses.

2. Maintaining and repair of levees. We would recommend the passage of an act to compel work upon the levees by the adult citizens living in the levee district, such work to be under the control and direction of the police juries. We further recommend that the police juries be urged to exercise the important powers intrusted to them by existing laws for the maintenance and protection of levees, and especially to the use of the levees as roads or their cutting for roadways or rice-flumes. We approve the suggestion of the Governor in reference to the just responsibility of railroads to contribute to the maintenance and support of the levees which protect their property.

We recommend the formation of chartered volunteer companies of levee guards in towns and cities; the erection of station or signal houses at convenient points by the people of the vicinity. The said station-houses to be used as depots for materials and appliances to stop crevasses or to strengthen weak points.

3. Improvement of navigation. The convention has by independent resolutions fully indorsed the

sentiments expressed by the Governor in reference to the Mississippi River Commission. The committee heartily recommends the suggestion of the Governor in reference to the appointment of an executive committee of ten so organized as to be readily assembled, the duty of the committee to be to act in concert with other bodies of a like character and to be ready with all necessary information to go before Congress at its next and ensuing sessions in behalf of the interests of the people of this State.

Among the resolutions were the following:

That we earnestly appeal to his Excellency the Governor of Louisiana to immediately adopt such means and measures as may be necessary to place the entire convict force at work on the levees of the State.

That the chairman of this convention appoint a committee of ten delegates to confer with the representatives of the Mississippi Valley, Texas and Pacific and Morgan railroads, to receive any proposition tending toward their assisting in the matter of keeping a general system of levees in conjunction with the State.

That concerning the Red and Atchafalaya rivers, we deem inexpedient and hurtful to the commercial interests of the people of the Red river country and those of the tributaries, any attempt to divert the course of that river away from the Mississippi, and that the waters of the Red should be deflected from the Atchafalaya.

Democratic Convention.—When the question of candidates to be voted for at the election in April, 1884, came to be discussed, much opposition to the renomination of Gov. McEnery, led by the New Orleans "Picayune," manifested itself within the Democratic ranks. The primaries were attended with much excitement, and in some instances with violence. The convention met in Baton Rouge on the 18th of December; a prolonged struggle over contested seats ensued, and an adjournment was not reached till midnight of the 20th. Gov. McEnery was renominated by a vote of 220½, to 178½ for Francis T. Nicholls. An attempt to make the nomination unanimous failed. The ticket was completed as follows:

Lieutenant-Governor, Clay Knobloch, of Lafourche; Treasurer, E. A. Burke, of Orleans; Attorney-General, M. J. Cunningham, of Natchitoches; Secretary of State, Oscar Arroyo, of Plaquemines; Auditor, O. B. Steele, of Union; Superintendent of Education, Warren Easton, of Orleans.

"With the exception of the gentleman nominated for the attorney-generalship," says the "Picayune," "all the nominees are of the McEnery faction, and the ticket as a whole gives no promise of that reform in the management of the party and the administration of the State of which both are so much in need."

Among the resolutions adopted by the convention were the following:

That we declare our hostility to the entire principle of lottery dealings. The Constitution declares gambling to be a vice, yet it encourages that vice in its worst form, not only inciting to breaches of faith and embezzlement in the effort to get rich on the turn of the wheel, but demoralizing society, corrupting politics, and impeding legislation; and we demand that the Legislature to be chosen at the ensuing election shall enact such legal measures as are necessary for their suppression.

That the convict-labor of the State should be appropriated and assigned to labor on the public levees, under the direction and control of the State authorities, by such legislation as may be necessary.

Sugar and Rice.—The year 1882–'83 witnessed the heaviest production of sugar ever made in Louisiana since the war.

There were 120,555 acres of cane crushed, or 25,523 acres more than the previous year, and the average yield per acre was 2,782 pounds where the vacuum-pan was used, or 2,368 pounds where open kettles or the ordinary steam-train were used. The first arrival of sugar comprised 20 barrels white clarified from the Forlorn Hope Plantation, parish of Iberville, and came in October 7th.

The crop amounted to 303,066,258 pounds of sugar, equivalent to 241,220 hogsheads. The production of open-kettle or old-process sugars amounted to 184,860,390 pounds, or 150,292 hogsheads. The production of clarified or centrifugal sugars amounted to 118,205,868 pounds, or 90,927 hogsheads.

The total product of molasses for the season amounted to 15,716,755 gallons, of which 4,255,411 gallons represented centrifugals and 11,461,344 gallons were open-kettle or old-process molasses. During the year 1881–'82 the production amounted to 9,691,104 gallons, of which 2,926,186 gallons were centrifugals and 6,764,918 gallons were open-kettle molasses.

The production of rice in Louisiana for the season of 1882 amounted to 187,217 barrels of clean rice. The crop the previous year amounted to 55,422,180 pounds, or 240,966 barrels of clean rice. The crop for the season of 1880 amounted to 61,331,840 pounds, or 266,658 barrels of clean rice.

New Orleans.—The domestic exports from the port of New Orleans to foreign countries during the fiscal year (Sept. 1st to Aug. 31st) 1882–'83, compared with former years, were:

Total exports,	1882–'83	$95,230,968
"	1881–'82	68,190,431
"	1880–'81	104,150,450
"	1879–'80	93,335,880
"	1878–'79	63,624,797
"	1877–'78	84,831,724
"	1876–'77	70,197,732
"	1875–'76	83,894,190
"	1874–'75	71,462,267

Of the exports in 1882–'83, $79,665,176 represented cotton, $7,455,961 wheat, and $4,366,675 corn.

The imports of foreign products and manufactures into the port of New Orleans during the fiscal year 1882–'83, compared with former years, were:

Total imports,	1882–'83	$9,414,015
"	1881–'82	11,993,852
"	1880–'81	12,413,270
"	1879–'80	10,915,042
"	1878–'79	7,141,989
"	1877–'78	11,433,142
"	1876–'77	9,522,559
"	1875–'76	11,602,873
"	1874–'75	12,356,469

The custom-house figures for the years 1882–'83 and 1881–'82 exhibit the following:

	Number of vessels.	Tonnage.
This year, entered	1,152	1,062,880
" cleared	1,158	1,068,267
Last year, entered	897	998,079
" cleared	953	1,088,859

LOUVAIN, THE REFORMATORY PRISON AT. Louvain is a city of Belgium, fifteen miles northeast of Brussels. The management of its reformatory prison is based on the principle that even in the most corrupt man there is a germ of good sentiments and feeling, the development of which can be secured by making the prison a place of repentance and amendment. The first condition required for this end is the separation of the prisoner from bad counsels and bad examples. This introduces the cell system. But in the erection of the building at Louvain the results of experience were kept in view. It was believed that the numerous cases of madness and suicide in cell-prisons were not caused by the system of separate confinement in itself, but by the bad application of it. Thus, on adopting the form of a star in the construction of the building (an arrangement found most convenient for watchfulness), it was determined to change entirely the material and moral treatment of the prisoners. The cells are airy and well lighted. Water is brought to them in abundance by a pipe with a stop, which is opened at pleasure within, but which is controlled by a key on the exterior. There is a similar arrangement for the gas-jet, and by a special contrivance it can be made to furnish the heat required for the prisoner's trade. A wash-stand, water-closet hermetically closed, several book-shelves, a table, a chair, and a folding-bed, compose the furniture. There are also the tools or machines necessary for the prisoner to prosecute some work. Here are seen tailors, shoemakers, saddlers, bookbinders, carpenters, locksmiths, etc. Some of the prisoners are bakers; others scullions, or head cooks. The cookery of the latter is not very nutritious, but it is not unwholesome. The bread is better than that of the French; in the other articles of food there is no comparison. In the French prisons, the inmates receive during the week only soup, and on Sunday a little meat, while at Louvain they have bread in the morning, soup at noon, vegetables at night, and meat twice a week.

The prisoners have also the liberty to buy "knick-knacks" with a little of the money which they earn; the rest is kept for them until the expiration of their sentences. These sums are comparatively large; for in this prison most of the clothing and equipments of the Belgian army are made, and the Government pays as good wages as to the free workmen.

When any kinds of work were to be done which required the labor of many persons together, it was found very troublesome to maintain the rule of separation. At first it was decided never to suffer two convicts to labor together, except under the special watch of a guard who should prevent any communication between them. But this proved insufficient. The problem was solved under the principle upon which the establishment was founded. It was indispensable to protect the convict, on his going out of prison, against disagreeable recognition by his old fellow-prisoners. It has been said that the first requisite for the encouragement of a repentant criminal to persevere in his reformed life, was to prevent his disgrace from being cast upon him, if possible. Thus, upon the arrival of the convict at the prison, he is taken to the director, to whom he tells, in confidence, his name; in exchange he receives a number, by which only he is henceforth known. He then goes to the dressing-room, and after undergoing the changes required by the rules, he puts on a large bonnet which conceals his features, and has only the two openings for the eyes. He never goes from his cell, or receives any person there, without concealing his countenance in this manner. Thus he continues, or believes that he continues, entirely unknown.

One very forcible objection to the cell system is the mute state in which the convicts are kept. Absolute silence is a very severe chastisement; it often causes madness, and, in any case, it is not in itself an agent of improvement. That danger has been avoided at Louvain. If the convicts can not converse among themselves, they are in constant connection with their guards and with the overseers, who come and go continually. Besides, they are visited every day by the director or his assistant, or the distributors of food, the clergy, or rabbi. Twice a week, and sometimes oftener, they have a long visit from the teacher. All the prisoners are obliged to go to school. There is an amphitheatre where the pupils can see the professor, but can not see one another. They are really separated by a door, which each one closes as he reaches his place. Lest they might be recognized by the voice, all questions are forbidden during the lesson; but the instructor afterward goes to each cell to assure himself that his explanations have been understood. Thus, in a novel manner, the monotony of the imprisonment is broken.

Again, the kind of labor imposed on the convicts is their safeguard against hypochondria. In other prisons labor is repulsive, as nearly all is done by machinery. At Louvain the labors require a certain mental application, and therein the convicts find a real relief. This organization also enables a convict to fit himself to obtain a livelihood if he came to the prison without having learned a trade; or to make a change if he does not wish afterward to resume his old trade. The results of this system are excellent, if we can believe the statistics of the first twenty years that the prison has been in operation. The cases of suicide or madness are not more numerous, for the population, than in the cities of Belgium, though

the convicts have a thousand means by which to take life. The awls, paring-knives, scissors, and leather straps, abound in the cells.

So far as relates to subsequent or second committals, while in France they count as high as forty-one to forty-eight per cent., at Louvain they scarcely exceed six per cent. The reason of this difference seems to exist not only in the system itself, the administration of which is very intelligent, but also, and especially, in the chosen officers. The lowest guards obtain their places by competition. But this does not satisfy the director, who has them continually under his eye; he desires that they should regard their employment as a mission to which they should wholly devote themselves.

"At the time of our first visit to Louvain," says the journal "La France," "we came strongly prejudiced against the single-cell system generally, so that it was not without surprise that we observed the calm air of the prisoners. They seemed to have even a kind of attachment for their sad home. Here one sees wreaths of ornamented paper all around the cell; in others, the spaces for the vessels were covered with odd ornaments, which revealed a certain taste in the unfortunate ones who had arranged them; in some there were natural flowers in a pot on the work-bench. These flowers had been gathered by the convict in the yard, where he daily made a promenade. These yards do not resemble the dungeons where French prisoners turn back and forth like imprisoned deer. They are oblong little gardens, inclosed on the sides by the high walls and terminating at the ends by gratings, one of which facilitates the watch of the guards placed at a central point, and the other presents the vast kitchen-gardens of the prison. The product of the little gardens goes to some of the convicts, who can cultivate a corner as they please during their recreation, and eat the fruit and gather the flowers. We were no less astonished to see bouquets in the penitentiary-cells, and on entering the office of the director, M. J. J. Paul, an accomplished man, we could not refrain from saying to him, 'Sweet prison, sir, where the convicts are permitted to make the air which they breathe fragrant with the perfume of flowers.' 'I know it is an infraction of the regulations,' he replied, 'but I have given an order to the guards not to remove them. When a criminal begins to decorate his cell, by attaching himself to flowers, he has become less obdurate. If one of them finds in his yard a bird fallen from a nest, which he desires to keep in his cell, I close my eyes again and rejoice, for that man will become better.'"

LUTHER QUADRICENTENNIAL. Saturday, Nov. 10, 1883, was the four-hundredth anniversary of the birthday of Martin Luther. There were many reasons why the occasion should be celebrated. That religious and social movement which he originated is one of the few great dividing-points in the history of civilization. The preceding four centuries belong distinctively to mediæval history; the four centuries which have since elapsed belong as distinctively to modern history. More than half of Christendom holds that this religious movement has been a great and almost unmixed evil; less than half hold that it has been a great and almost unmixed good. But there are few men in our day who do not hold that the social and political reforms which sprang out of and have accompanied this movement have been of the highest benefit. It would not be easy to find a Roman Catholic who would wish civil governments to be restored to the state in which they were at the close of the fifteenth century. Few would, even in theory, hold that the Church should be re-established as it was in the times of Alexander VI, Julius II, and Leo X. Indeed, the reformation which went on within the Church was hardly less notable than that which went on from it in the lifetime of Luther, and for a generation thereafter; and that reformation within the Church can be traced, mediately or immediately, to the revolt which Luther headed against the Church.

It is easy to affirm that if there had been no Martin Luther there would have been some other man or men who would have done all that he did, and better than he did it. Nothing is easier than to speculate upon what might have been. But there was a Martin Luther, by whom, through whom, and often in spite of whom, certain great things were brought about. Luther's countrymen, and not a few others, hold that these things were among the most notable recorded in human history.

Luther's life was a warfare. His weapons were thoughts and words, which in the long run have ever proved themselves mightier than armies and armaments. One of the most thoughtful of American authors, writing of "Luther and his Place in History," says: "He spoke for all future ages. His words saved Germany, and created Modern History. The Gothic and German races rose to rare prosperity at the touch of Luther's genius; the Latin races rejected his teachings, and have for three centuries slumbered in dull reaction and decay. He died at the age of sixty-three, the master intellect of the Teutonic race."

The countrymen of Luther have never been unmindful of their debt to this peasant's son. He gave them a common language, the first requisite to a national unity, lying even deeper than mere unity of race. Not that, as some have said, he created the modern German language. To create a language is what no one man, no cycle of men, has ever done. But in adopting in his writings, and especially in his translation of the Bible, the Franconian dialect, remote on the one hand from what was known as the High Dutch, and on the other from the Low Dutch, yet still intelligible to all, he fixed the forms of that dialect as the language for the people. His guiding purpose was, so to

write that his words should be understood "by the mother in the house, the children in the streets, and the common man in the markets." The translation of the New Testament was almost wholly his own work. Some of the manuscripts of this translation are still extant, and they evince the labor which the work cost him. There are passages which have been corrected and recorrected half a score of times before the exact form was at last attained; but now it seems strange that any other words or collocation of words should have been thought of. In the translation of the Old Testament Luther needed much assistance, for, besides a few rabbis, there was not in all Europe a tolerable Hebrew scholar. So much aid did he receive from these rabbis, that the company of translators was jestingly called "the private Sanhedrim." But, even in this part of the undertaking, the real work of translation was Luther's. His co-laborers might enable him to understand what the Hebrew writers had said in their own language, but Luther alone was competent to make them say it in German. He himself tells what a task it was: "We are working hard," he writes to a friend, "to bring out the prophets in our mother-tongue. Ach Gott! what a great and difficult work it is to make the Hebrew writers speak German!" But he did make them do it, so far at least as he understood them; and his intense sympathy with them went far to enable him to penetrate the very soul of their Oriental thought and phraseology.

So adequate for all purposes has Luther's translation proved, that it is not until our own immediate day that any serious attempt at even a revisal has been made. A German revised translation has just been completed, and the first printed copy of it was presented to the Emperor of Germany on the day of this Lutheran quadricentennial.

Very much of Luther's abundant literary work was for the time merely. He occupied, in a measure, the place now filled by the editor. Newspapers and regular periodicals did not then exist; but Luther's pamphlets and broad-sheets partially supplied their place. In one year he put forth nearly two hundred of these treatises, all dealing with current matters, which to him and to others seemed of vital import. All of them have been reprinted again and again. His "Table-Talk," jotted down mainly from memory by one and another of his disciples, is among the most readable of books to this day. He lacked little of being a great poet. He was all his life too busy to be able to spend much time in fitting rhymes and scanning syllables; yet some of his hymns are immortal. The "Ein' feste Burg ist unser Gott" is not merely a psalm of worship, but has been also the national battle-hymn, the German anthem of hope and encouragement, from Luther's day to our own; and wherever this Luther commemoration was solemnized, this hymn formed the fitting prelude.

The great secret of the strength of Luther is, that he was German to the very core of his being. He, as it were, created the German nation, because he was himself a German of the Germans. Julius Köstlein, the latest, and by far the best, biographer of Luther, fairly sums up the national estimate of the man, which is in the main that of the great body of the Protestant world. Köstlein's "Life of Luther" appeared in German ten years ago; an English translation of it was brought out at the time of this commemoration. Köstlein says: "No German has ever influenced so powerfully as Luther the religious life, and, through it, the whole history of his people. No other one has ever, in his whole personal character and conduct, so faithfully reflected the peculiar features of that life and history, and has been enabled by that very means to render us a service so effectual and popular. If we recall to fresh life and remembrance the great men of past ages, we Germans shall always put Luther in the van."

In Germany.—There were in Germany some reasons why this four-hundredth anniversary of Lutheranism—which is but another expression for Germanism—should have a special significance. The consolidation of the disjointed German states into a nation, which had been one of the dreams of Luther's life, had within less than half a generation come to be an established fact, after centuries of unavailing effort. To give a tangible evidence of this great fact, a colossal statue of Germania had been planned, to be placed opposite Bingen on the Rhine. This statue, thirty-three feet high, stands upon a lofty pedestal, erected upon a bold bluff, looking down upon and seeming to keep watch over a long stretch of that historic stream, now for the first time wholly German. It was just ready for unveiling in the autumn of this year. The inscription on its base reads, "In memory of the unanimous and victorious uprising of the German nation, and the restoration of the German Empire, 1870–1871." Herr Stocker, the court preacher at Berlin, speaking to an English audience upon commemoration-day, emphasized the vital connection between Luther and this "victorious uprising." "Prussia," he said, "like other countries, owes its growth to the Lutheran Reformation; and when the Crown Prince of Germany laid a wreath upon Luther's grave at Wittenberg, he well knew what he was doing. He gave public recognition to the truth that the new German Empire had its rise in the Protestant spirit."

The precise mode of the celebration in Germany developed itself but slowly. If any special day was to be chosen, one would imagine that the anniversary of Luther's birth would at once have suggested itself. But for some reason the authorities of Wittenberg—the place of all others most intimately associated with the public life of the reformer—chose to hold their celebration two months earlier, on Sept.

12th. The Crown Prince had been deputed by his father, the aged Emperor, to represent him on this occasion, and 50,000 persons were assembled as spectators of the ceremonies. "Unser Fritz" performed his part with decorous zeal. At the appointed time he went in state to the Castle church, and placed a magnificent laurel-wreath upon the grave of Luther. In the mean while a long procession had been moving toward a large hall—the same in which Luther had delivered those lectures which made the university famous in his day. This was now reconsecrated as Luther Hall; the Crown Prince saying at the close of the proceedings: "May this festival serve as a holy exhortation to us to uphold the great benefits of the Reformation, and to strengthen our resolution to be ever ready to defend the Evangelical creed, liberty of conscience, and religious toleration! May Luther's anniversary help to confirm us in the resolve to enliven the Protestant feeling, preserve the German Evangelical Church from disunion, and lay the foundations of an everlasting peace!"

Germany is not all Protestant, and the Catholics could not be expected to look with favor upon a commemoration like this, which it was now evident would assume a national character. The Wittenberg celebration was hardly over when it was proposed that the Catholics should observe the month of October as a "month of prayer." It was especially urged that the Catholic children throughout Germany should "join together in fervent supplications to Heaven for a speedy reunion of all Christian peoples within the fold of the one true Church." This recommendation was carried out to a very considerable extent, though it could hardly call forth much enthusiasm.

The preliminary celebration at Wittenberg was essentially the imperial one; that at Berlin was rather municipal and civic, though the Emperor and the royal family bore some part in it. On Friday the capital began to put on a festal aspect. Flag-staffs were raised on the roofs, and decorations pervaded the streets and public buildings. A somewhat cynical correspondent does not fail to notice that "the shopkeepers, great and small, appear to combine gratitude to the great reformer with an effort to turn an honest penny, by exhibiting his portrait in their windows for sale." As evening fell, the bells of the churches sounded their loudest peals, and on Saturday, at half-past seven in the morning, they rang out again. The pupils of all the public schools marched in long procession to attend divine worship; and as the churches were insufficient to contain them, services were also held in public halls. The grand procession moved early from the town hall toward the church of St. Nicholas, the oldest place of worship in Berlin. The procession was much like those with which we are familiar, wanting, however, the military element. In front moved heralds and musicians. Then followed the Protestant clergy, the professors and students of the university, the chief officials of the city, of the kingdom of Prussia, and the empire. Last came the minor officials and common citizens. By noon the church was crowded. After a pause of half an hour, the Emperor, the Crown Prince, and the princes William and Frederick Charles made their appearance. Then the liturgy was recited, drums were beaten, trumpets blown, and Luther's "Ein' feste Burg" pealed forth like a song of victory to the roar of the great organ. General-Superintendent Brückner delivered the sermon of the day. It was a long and not over-brilliant discourse, the leading theme being that "Luther's grandest work, and most precious legacy to the world, was the purification of the Christian faith."

The celebration at Eisleben was by far the most characteristic one which we find described. In this mining town Luther was born, and here he died. His connection with Eisleben was in both respects altogether accidental. His parents resided in the neighboring village of Mansfeld. His mother had gone to Eisleben in order to make some household purchases, when he was born. Not long afterward his father took up his residence at Eisleben, and here Luther's boyhood was passed. He himself supposed that he was born at Mansfeld. He was sent to school at Mansfeld at the age of twelve, and it does not appear that he was ever after that in his native town for more than a few days, until a month before his death. He went there, not from any longings to revisit the home of his childhood, but for the purpose of bringing about a reconciliation between the two Counts of Mansfeld, who were at feud. The weather was inclement, and he was seized with a severe cold, which resulted in pneumonia. He was not thought to be in special danger until the day before his death. Only four days previous he had delivered his last sermon.

Eisleben possesses few memorials of Luther. The house in which he was born is still standing in the street that bears his name, though somewhat changed. It was partially burned in 1594, but was restored at the expense of the town, and was again restored in 1817; but the interior of the lower part remains unaltered. The entrance is modern, and over the door is a bust of Luther, and this inscription: "In this house Dr. Martin Luther was born, 10th of November, 1483.—God's word is Luther's lore; therefore fails it never more." The house in which he died is also standing, near the market-place. On the front is a small tablet which simply says, "In this house Dr. Martin Luther died, the 18th of February, 1546." The humble house in which he was born is uninhabited and unfurnished, except for a few relics of Luther, which are of doubtful authenticity. In the more pretentious dwelling in which he died, the guest of the town-clerk, Luther's death-chamber and the sitting-room are unoccupied and unfurnished.

Nowhere in Germany has the memory of Luther taken stronger hold than in this mining region of Saxony. People of all orders and degrees set themselves to celebrate this four-hundredth anniversary, and 30,000 visitors swarmed into the little town. The great event of the day was the unveiling of a statue of Luther in the market-place. It is of bronze, nine feet high, standing upon a low granite plinth. The figure represents the reformer as he was at what may be esteemed the crisis of his career, that 10th day of December, 1520, when he publicly burned the papal bull before the Elster gate of Wittenberg. Clad in his academical robes, he stands erect, his left hand holding the Bible closely pressed to his heart. In the right hand the bull is held aloft, to be flung into the flames. This tells the story of the Reformation as conceived by Luther: God's word against the decrees of the Pope.

LUTHER'S STATUE IN EISLEBEN.

The dawn of the bright November day was ushered in by peals of church-bells. In good time the magistrates walked in procession to the church of St. Andrew, where Luther had

delivered his last sermon from the antique pulpit, now garlanded with evergreens. The hallelujah chorus was sung, and then Chaplain Frommel, from Berlin, delivered the sermon. As the clocks struck twelve, the ceremony of unveiling the statue began. "Ein' feste Burg" was sung; and then the worthy Burgomaster Martin gave an account of the memorial statue. All heads were then bared as the covering was removed, while the choir struck up that other noble hymn of Luther's, "Praise ye the Lord, the mighty King." Dr. Koegel, the Emperor's chaplain, pronounced the inaugural oration, formally presented the statue to the town, and dismissed the auditory with the benediction. In the afternoon an official dinner was given.

But these official ceremonials were not the most interesting part of the Eisleben celebration. The people of the region arranged an addition to the programme. When Luther came thither, an imposing reception had been given to him. It was resolved to revive this upon a far larger scale by an historical procession. First came the mounted heralds, trumpeters, and banner-bearers of the counts of Mansfeld, followed by knights and squires, huntsmen and falconers, lords and ladies, all clad in the picturesque costume of four hundred years ago, distributed into various groups, as the scene has been handed down by the old chroniclers. Then came those representing the civic authorities of the good town; then Luther himself, seated in the gorgeous chariot of the count, his three young sons, and his friend Justus Jonas, by his side. After them were the citizens of Eisleben and the surrounding region. Everybody had done his best to present himself as his forefathers might have looked. There were merchants in long coats of red velvet; gardeners in light green; all schools and guilds with the various emblems of their crafts; feudal retainers with crossbows and javelins—all mingling together in gay confusion. One might have thought a bit of the fifteenth century had suddenly dropped into the closing years of the nineteenth.

In Denmark and Sweden.—In Denmark and Sweden the day was universally celebrated as a high festival. The schools were closed, public business was suspended, and meetings were held in the churches, where the great deeds of Luther were set forth.

In France.—In France the Protestants form an inconsiderable part of the community, and of these the Lutherans are an insignificant fraction. French Protestantism has always had little sympathy with Luther, looking rather to Calvin as its founder; and just now anything German is not in the best esteem in France. Nevertheless, the adherents of the "reformed" and those of the "free" church could not be unmindful of the occasion. In Paris, at least one crowded meeting was held, and the great German was warmly eulogized. Pastor Walbaum extolled his activity, joyousness, sensibility, and heroism, declaring that, in spite of some short-comings, "he had been equaled by no man since Paul." M. Recollin went so far as to admit that, great as Calvin was, "Luther was far more expansive and universal." M. de Pressensé, speaking for the "Free Church," eulogized Luther as the "ideal representative of the German race in its best features, and at its finest period; he was the great emancipator of souls." He also took occasion to repel the invectives which the Catholic press had recently been heaping upon Luther.

There had been no lack of such attacks, the foremost assailant being the "Univers," the recognized organ of the Clerical party. This periodical averred that "Germany is really celebrating her own debasement by the man who was the direct or indirect author of massacres so numerous that, could the bones of those who had lost their lives through the influence of his pernicious teachings be exhumed, they would whiten the whole soil of Germany. He was a denier of free-will, and of the value of good works. He died in consequence of a gross debauch; and Heaven itself had visibly interposed to brand his memory with infamy; the tree under which he took shelter on his flight from Worms had been blasted by lightning, and a thunder-bolt had twice struck the church in which he was buried. In another life he has the destiny which he prepared for himself, for, according to his own confession, he had while on earth too much dealing with the devil to deserve to escape eternal damnation," and much more of the like import. The "Univers" also gives place to a paper by Bishop Freppel, who used to lecture upon Luther at the Sorbonne. He was "amazed at the glorification, at this day, of the man who denied free-will, declared good works prejudicial to salvation, set all nations at variance, and was the very incarnation of intolerance"; and declared that it was a "huge joke on the part of the Crown Prince of Germany to designate this coming Lutheran commemoration as the festival of toleration."

In England.—In England the day was very widely celebrated, large meetings being held in every considerable town and city. The higher ranks of the Anglican clergy took little part in the movement; the notable exceptions being the Archbishop of York, the Bishop of Liverpool, and Canon Farrar. The archbishop, in the hierarchy, stands second to the Archbishop of Canterbury, and consequently second, after the royal family, in order of precedence, outranking all dukes, earls, and barons. He had some weeks before accepted an invitation to deliver a sermon upon Luther on this commemoration-day. The Dean of York ranks next to him in the archdiocese, being in special charge of the ordinary services of York Minster, the cathedral church. He took alarm at this intimation of the archbishop, and wrote to the newspapers to the effect that Luther was a foreigner, and not of the Anglican communion, and so not to be, as it were, canonized,

and added that any formal church service in which the Lutheran movement should be publicly commemorated "would gender strife, encourage discord, and hinder individual spiritual life." If such an encomium were to be pronounced by the archbishop in the minster, he himself would be absent from the service. The archbishop purposed to deliver the sermon, not in the cathedral, but in another church in the city. He, however, took prompt occasion to affirm his right to deliver it in the minster, and at the same time to set forth his own position in the matter. To the "Times" he wrote: "Every time we use the church service, and particularly the holy communion service in our churches, we affirm the Reformation. Every candidate who is ordained, and every clergyman who receives a benefice does, by signing the Thirty-nine Articles afresh, which attest the Reformation. Every year, when the convocation meets within the precincts of the minster, we return thanks, in the convocation prayer, for the blessings of the Reformation, and for our deliverance from the papal tyranny which once here prevailed. While it is true that the English Reformation was accomplished in a different manner from the Reformation in Germany and other countries, yet it is nevertheless true that the possibility of a religious reformation in any part of Europe sprang in a large part from the intense personal conviction and contagious faith of one man—Martin Luther."

This York discourse, delivered on Saturday, was repeated on Sunday, Nov. 11th, in Westminster Abbey. It embodied a eulogistic statement of the great facts in Luther's career, closing with a summation of the reasons why he should be held in special reverence by the Church of England. "The Anglican Church," said the archbishop, "bears a much nearer resemblance to the German Reformed than to the Protestant system which prevailed in Switzerland. Our Church joined with Luther in protesting against the Zwinglian doctrine of the eucharist; and, out of the Thirty-nine Articles, not less than fourteen were derived from the Confessions of Augsburg and Würtemberg. It has, moreover, been conclusively shown that in countries where the Reformed religion prevailed, there was more order, more liberty, greater prosperity, greater industry and enterprise, than existed in countries which professed the Roman Catholic religion. This was not the result of race, but was equally evident when comparison was made between populations of the same race professing the two different religions. How great, therefore, is the debt we owe to the great reformer whose teachings had brought about such results! This was certainly a memory which Englishmen would never let die."

What may be styled the popular movement in England was headed by the Earl of Shaftesbury, the chairman of the Lutheran Commemoration Committee. Among the immense meetings held was one at Exeter Hall, where clerical and lay orators spoke in the same strain with those from whom citations have been made.

In America.—In the United States the commemoration was widely observed, though without any ostentatious public display. On Sunday, Nov. 11th, the day following the anniversary of Luther's birth, there were few prominent Protestant pulpits in which the work of the great German was not made the theme of comment and eulogy. Large meetings were held in New York, Philadelphia, Boston, Brooklyn, Baltimore, Chicago, Pittsburg, Princeton, and other places. In Cincinnati, Monsignor Capel delivered two discourses in the cathedral, in which he treated of Luther from the Catholic stand-point.

LUTHERANS. Considerable discrepances exist between the computations of the statistics of the several Lutheran bodies in the United States as given in the different year-books.

The "Church Almanac" (General Council) gives summaries as follows:

	Ministers.	Congregations.	Members.
General Council, ten synods.....	684	1,812	216,987
Synodical Conference, six synods	1,143	1,880	288,497
General Synod, South, six synods	180	289	19,060
General Synod, North, twenty-three synods.....	840	1,377	128,927
Eleven independent synods.....	554	1,457	142,522
Total.....	3,351	6,265	797,543

Brobst's "Lutherische Kalender," also representing the General Council, gives:

	Ministers.	Congregations.	Members.
General Council, ten synods.....	680	1,329	211,509
Synodical Conference, five synods	965	1,373	237,817
General Synod, South, six synods	165	241	17,774
General Synod, North, twenty-three synods.....	855	1,436	129,204
Independent synods.....	718	1,697	197,164
German Synod of Iowa.....	178	290	25,000
Norwegian Augustana Synod....	21	56	3,500
Total.....	3,582	6,422	821,968

The German Synod of Iowa and the Norwegian Augustana Synod, classed in the "Church Almanac" among the independent synods, are regarded in the Brobst "Kalender" as affiliated in sympathy with the General Council, though not officially connected with it. If their members were added to those of the General Council, the strength of that body would be, according to Brobst, 879 ministers, 1,675 congregations, and 240,009 members. The sum of the members shows, according to Brobst, an increase during the year in the entire Lutheran Church of 153 pastors, 292 congregations, and 36,181 communicants.

Of educational institutions connected with the several bodies and particular synods, the "Church Almanac" enumerates 19 theological seminaries, 18 colleges and universities, 29 academies, and 16 seminaries for young women. The charitable and benevolent institu-

tions comprise 25 orphanages, 8 hospitals, 1 home for the aged and infirm, 1 institute for the deaf and dumb, 4 emigrant missions, under the care of different bodies, in New York city, and 1 emigrant mission in Baltimore. The whole number of periodicals is 87, of which 30 are in the English language, 28 in German, 7 in Swedish, and 22 in Norwegian and Danish.

The General Council.—The General Council met in the city of New York, October 18th. The Rev. Dr. A. Spaeth, of Philadelphia, presided. The business of the session consisted chiefly in the continuation of the regular discussion of the ninety-five theses of Luther and the review of the progress of the various missionary and publishing enterprises of the body. The discussion of Luther's theses, to which the Council statedly devotes a part of the time of every annual meeting, has been instituted for the comparison of views among the members of the body, and for mutual enlightenment in doctrine, and does not take the shape of formal action. On the present occasion the fifth, sixth, and seventh theses, declaring the impotency of the Pope in the forgiveness of sins, were considered, as follows:

The Pope neither wisheth to nor can remit any punishments save those which he, of his own will, or according to the canons, hath inspired.

The Pope can not forgive any sin, except so far as he doth declare and confirm God's forgiveness; or, indeed, when he forgiveth reserved cases, where, if they be despised, the sin remaineth still.

God verily forgiveth no man's sins, without at the same time subjecting him in all things in humility to his vicar, the priest.

A strong desire was expressed for the union of the synods of the United States on the occasion of the four-hundredth anniversary of the birth of Martin Luther; and the corresponding secretaries were instructed to enter into correspondence with the synods which are one with the Council in the unity of the faith, with that end in view.

The Board of Foreign Missions reported that its receipts for the year had been $7,278, and that its estimates for expense for the coming year amounted to $10,000. The mission is in the Presidency of Madras, India, and has its principal stations at Rajamundry and Samulcotta, with numerous sub-stations. It employed four American and European missionaries, two native pastors, two woman missionaries, two evangelists, and forty teachers, and returned 722 children in the schools and 465 persons baptized during 1882 and the first six months of 1883. The German Home Mission Committee had received during the year $4,447, and had expended $4,410. Three missionaries had been dispatched to Canada, seven had been appointed to fields within the United States, and a traveling missionary was employed in Texas. The committee was unable to meet the demands made upon it for additional laborers. Thirty-four students were, however, under preparation at institutions in Germany to engage in its work. The Swedish Home Mission Committee had missions at San Francisco, Cal., Astoria and Portland, Oregon, and Puget Sound, Washington Territory, in Idaho, at Salt Lake City, and in Colorado. The Emigrant Mission had given shelter in its home in New York city to more than 15,000 persons. The House and its mission was now generally known, and the Home Missionary Society in Europe was very generally co-operating with the committee. Mission stations had been established in Bremen, Hamburg, and Antwerp. Castle Garden was regularly visited at each arrival of passengers. The Swedish Augustana Synod was sustaining a mission in connection with the committee's work. A recommendation that the Home Mission Committees be advised to secure the services of one or more traveling missionaries for the purpose of organizing congregations along the line of the Northern Pacific Railroad, and of securing sites for churches, etc., was offered, and referred to the next meeting of the Council. A general committee, which had been appointed the year before in furtherance of the same object, reported progress. A declaration was adopted to the effect that the co-operation of women in the work of the Church was greatly desired. "But as the *Church* is the proper channel through which all efforts are to be directed, the Council can recognize no other. It must leave to the individual congregation the right to direct its own affairs. If it deem it wise to organize woman's mission societies, it can do so, and will no doubt have the approval of the Council."

The General Synod.—The General Synod met in its thirty-first biennial convention at Springfield, Ohio, May 16th. The Rev. J. G. Morris, D. D., LL. D., was chosen president. Reports were made by the several boards having charge of the benevolent enterprises of the synod, of their operations during the previous two years. The Board of Church Extension had received $41,791, and had expended $39,325. It had completed its work in aid of the mission in Brooklyn, N. Y., was helping to build a church in Chicago, Ill., and was arranging for architectural plans to assist in building churches in the mission-fields. The plan for securing an income by apportioning among the churches the amount they would be asked to contribute had been worked with satisfaction and success. The Board of Publication had increased its net assets by $14,016, the present amount being $61,767, and reported sales for the year ending March 31, 1883, of $49,049. It had been able to appropriate from its profits $5,000 to the benevolent work of the Church as represented in the organizations connected with the General Synod. A history of the Lutheran Church in America was in preparation under its direction. The Committee of the Pastors' Fund had received $1,951, and expended $1,541. The Board of Home Missions had received $38,407, and had paid to missionaries $24,040. It had the care of 53 missions, which represented 63 congregations, having 3,680 members. The

missions had contributed for all purposes the sum of $96,544; 18 stations had been added to the list of missions during the two years past, 15 had become self-sustaining, and three had been discontinued. The Board of Foreign Missions had received $50,741, and reported an increase of 65 per cent. in the contributions of the preceding two years. Its missions were in India, where the first native minister had recently been licensed, and West Africa. The mission in India (Guntoor) returned 6,813 communicants, 1,958 pupils in day-schools, and 4,111 Sunday-school scholars. The mission at Muhlenberg, Africa, returned one ordained missionary, one unordained missionary, and one native licensed minister, 120 church-members, 70 of whom were communicants, 40 day-scholars, and 150 Sunday-school scholars.

A communication was received with favor from the delegate of the General Synod, South, and it was resolved to send a delegate to the next meeting of that body. Satisfaction was expressed that the Synod, South, had decided to carry on its foreign mission work under the auspices of the General Synod. The Synod declared that it hailed as one of the most auspicious outlooks of the Church in America the prospect of securing a "common service" for all English-speaking Lutherans, on the general and definite basis of the common consent of the pure Lutheran liturgies of the sixteenth century, and expressed readiness to labor to that end and to unite with the General Synod, South, and the General Council in any judicious movement to accomplish it. A committee was appointed to have the charge, under the direction of the Home Board, of the work of Indian missions. Observances were recommended to be made on Nov. 10, 1883, in honor of the birthday of Martin Luther.

Norwegian Lutheran Synods.—The Norwegian Lutherans in the United States are represented in four synods. The largest is the Evangelical Lutheran Synod, which is characterized by the strictness of its doctrine and rules of discipline. It includes about 200 preachers, and has a college at Decorah, Ia., a theological school at Madison, Wis., and several academies. The Augustana Synod has between 30 and 40 preachers, and a seminary at Marshall, Wis. The Norwegian-Danish Conference originated in a schism in the latter body, but has grown to exceed it, having 85 ministers and 24,000 communicants. Its college and seminary are at Minneapolis, Minn. Hauges Synod originated in a sect founded by Elling Eielson, a lay preacher, includes 20 ministers, and has a seminary at Red Wing, Minn.

Movement for the Institution of Bishops.—A feeling has been growing among the Lutherans of the General Council, especially among the Swedish members, whose church in their native country is episcopal, in favor of the institution of bishops. A convention met at Easton, Pa., March 27th and 28th, for the consideration of this subject. The Rev. John Kohler, D. D., of Allentown, Pa., presided. Papers were read on "The Episcopate in the Early Church"; "The Episcopate in the German Reformation"; and "Should we have the Episcopate in the Lutheran Church in America?" and committees were appointed to bring the subject forward for discussion in the several conferences of the Pennsylvania Synod.

M

MADAGASCAR, one of the great islands of the globe. (For map, see "Annual Cyclopædia" for 1882.)

Geography.—It is southeast of the African continent, from which it is separated by the Mozambique channel, which varies in width from 250 to 350 miles. It is 1,030 miles long, and from 225 to 350 miles broad, having an area of nearly 230,000 square miles, fully equal to the combined areas of the New England States, New York, New Jersey, Pennsylvania, Delaware, and Maryland. It is almost entirely within the tropics. The population is estimated at 3,500,000. The capital, Antananarivo, in the interior, contains between 70,000 and 80,000 inhabitants. The chief port is Tamatave, on the east coast, which contains about 3,000 inhabitants.

A mountain-range, having a height of 3,000 to 4,000 feet, and rising occasionally into more elevated summits (one of more than 11,000 feet), extends from north-northeast to south-southwest through the whole length of the island, though broken at three or four points by broad, elevated plateaus, and in several instances by narrow, deep cañons. The mountain-slopes were originally covered with heavy forests, but considerable tracts have been cleared. These forests contained many choice woods, both for building and cabinet use, as well as some valuable medicinal, resinous, and dye-woods. The slopes are generally fertile. Between them and the coast, both on the east and west sides, are extensive marshy tracts with some elevated bluffs, but also with numerous small lakes and ponds, and generally covered with a profuse vegetation. These districts, though fertile when cultivated, are unhealthful. The coast, for some distance from the shores, is sandy, not fertile, and intensely hot. There are two or three good harbors on the east side, of which Tamatave is the best. There are several harbors on the west side, but none of them, except Majunga, is very safe. There are numerous rivers, but those on the east side have so rapid a descent that none are navigable for more than six or eight miles. Of those falling into the Mozambique Channel, several have a navigable course of thirty or forty miles, and one, the Betsibooka, is navi-

gable for 160 miles. The climate varies with the elevation. On the coast it is hot, moist, and unhealthful, and malarial fevers prevail. On the mountain-slopes the climate is mild and delightful, the temperature seldom exceeding 85°. In the rainy season there is some malarial fever, even in these mountain-slopes.

Productions.—The flora, sylva, and fauna of Madagascar are in marked contrast with those of the African continent across the Mozambique channel, and have an equally marked general resemblance to those of the Eastern Archipelago. The *ravenel*, or "traveler's tree" (*Urania speciosa*), from whose trunk a sweet and wholesome beverage is obtained by incision, is peculiar to the island; while ebony, mahogany, different kinds of gum-trees, cocoanuts, figs, and other valuable and ornamental woods, and medicinal shrubs, are indigenous here. Among the plants peculiar to the island is the zozero, a species of papyrus, and a lichen which makes a powerful dye-stuff. The flora is of wonderful beauty, and many of the flowers are very fragrant. The silk-worm is indigenous, and its cocoons when fresh are often eaten by the natives. Sheep with hair, instead of wool, and with large, fat tails, have been introduced from the Cape of Good Hope; cattle from India, domestic swine, and horses from other countries, and dogs and cats. The crops are cotton, sugar, coffee, rice, yams, arrowroot, bread-fruit, plantains, bananas, and figs.

Commerce.—Commerce is chiefly carried on in English ships with Mauritius. One of the most important articles of import is rum. The export commerce, which is inconsiderable, consists of cattle, hides, wax, gum-elastic, gum, tallow, oleaginous seeds, etc. The value of imports from Mauritius in 1873 was estimated at £145,000; of exports to Mauritius, £155,000; of exports and imports to and from all other countries, £100,000.

History.—Madagascar was first mentioned by Marco Polo in the thirteenth century, but was not visited by Europeans till 1506, when the Portuguese attempted to plant a colony on the island, but failed. The French made a similar attempt in 1642, and indeed undertook to take possession of the island, but after some years the hostility of the natives, and the climate of the coast, compelled them to abandon it.

At the beginning of the present century, Madagascar was divided among several native tribes, of which two were the most active and powerful. These were the Sakalavas, the principal tribe of the western part of the island, and the Hovas, who held the east and northeast. The Sakalavas were the darker and taller, but the Hovas were quicker and more active mentally. Neither these, nor any of the other tribes of Madagascar, had any affinity with the negro races of Africa. They rather resembled, both physically and intellectually, the natives of the Philippines and of the Polynesian islands. The other tribes submitted to the rule of these two. In 1808 Radama, a Hova prince, became King of Imerina. He was only sixteen years of age, but soon engaged in war with the Sakalavas, and obtained control of much of the eastern coast and the port of Tamatave. In 1816 he was visited by British agents, and the next year he made a treaty with Great Britain, agreeing to abolish the slave-trade and other wrongs, on condition that he should receive a stipulated quantity of arms and ammunition every year, and men to instruct his people in military tactics. He faithfully observed his treaty, abolishing the slave-trade, though not slavery, and with the arms and instructors in military science received from Great Britain he soon had a fine and well-disciplined army, with which he subjugated the Sakalavas and the other tribes, and became King of Madagascar. In 1818 the London Missionary Society established a mission at Antananarivo, Radama's capital, founded schools, translated the Scriptures, and made great progress in civilizing and Christianizing the people. Commerce increased, manufactures were introduced, and agriculture was greatly improved. Slavery, however, still existed, infanticide was not checked, and the cruel trial by ordeal was not abolished. The idols were not destroyed, and many of the people worshiped them. Still the Christians were in the ascendency.

In 1828 Radama died, and his queen, Ranavalena Manjaka, became the ruler of Madagascar. She had courage, executive ability, a knowledge of state affairs, and a capacity for controlling her people; but she was a bigoted heathen, and bitterly hostile to all Europeans. She had one son, then very young, and was tenderly attached to him. She began by restoring the idols and the idol-keepers to their old places in the capital, and restricting the Christians in their worship. In 1831 she banished the French, who had obtained a considerable foothold, from the island, and in 1835 compelled the English missionaries and teachers to go also. Ere long she prohibited all Christian worship, condemned to death all who avowed themselves Christians, and endeavored to extirpate Christianity from the island. When her son, then a youth of seventeen, avowed himself a Christian, tenderly as she loved him, she was with difficulty restrained from putting him to death. Thousands did suffer martyrdom by her orders. Yet at this very time she maintained a vigorous foreign policy. When, in 1845, English and French cruisers attempted to break her authority, and bombarded and burned Tamatave, and landed their troops to attack the fort, they were repelled with such vigor by the queen's troops, and so thoroughly defeated and routed, that they were glad to escape to their ships. For eight years neither nation attempted to enter a Madagascar port, and when they sought, in 1853, to renew commercial relations, the queen demanded and obtained an indemnity for her losses.

In 1862 the queen died, when her son, Rada-

ma II, reigned in her stead. He attempted to restore Christianity; but he had not inherited the abilities of his parents, and for some cause he became obnoxious to his people, and in 1863 he was assassinated. His widow became his successor by election (the government being constitutional), under the name of Rasuaherina I. This queen gave to the missionaries and Christians free toleration, abolished the slave-trade, and checked infanticide and the trial by ordeal. Early in 1868 Queen Rasuaherina died, and was succeeded by her sister, who assumed the title of Ranavalena Manjaka II, and in 1869, on the occasion of her marriage with her prime minister, both publicly professed Christianity. The schools were all reopened, and greatly increased in numbers. A large printing-office was established in the capital, and the Scriptures, religious books, and school-books were produced to the amount of more than a million volumes in a year. Many new churches were erected, the number of communicants was stated at 350,000, and the whole of the Hovas and a considerable portion of the Sakalavas and the subject tribes became nominally Christian. There was, however, a strong heathen element among these tribes.

The French, who had regained their former standing on the south of the island and on a small island (Nossi-Bé) at the northwest, had stationed Jesuit missionaries there, and these attempted to win the other tribes away from the Hova influence, and if they could not draw them to alliance with France and to a profession of the Roman Catholic faith, determined, at least, to drive them back to heathenism, and to rebellion against the Hova government. It is a singular fact that since the establishment of the republic in France, while its home policy has been exceedingly liberal, its foreign policy has been controlled entirely by Jesuit influences. At the prompting of these Jesuit missionaries, France soon found or made a cause of quarrel with Madagascar. She claimed that her citizens had met with losses in the island, and she demanded a large indemnity. Unwilling to be involved in a quarrel with a great power, the queen, though believing the claim to be unjust, offered to pay the indemnity, but thereupon the French admiral demanded that Madagascar should be placed under the protection of France, and be governed by French officers. To this gross and unwarranted assumption the queen gave a prompt but courteous refusal, and the French admiral issued his ultimatum, requiring her consent, or he would bombard the port of Tamatave. She persisted in her refusal, and the port was bombarded, and some injury done to English citizens, which the French Government was afterward obliged to apologize and pay for. The Jesuit missionaries were now required to leave the capital; but while the Hovas had been driven out of Tamatave on an hour's notice, and all their goods seized, these Jesuits were allowed three days to dispose of their effects, and to remove them, and by the queen's orders they were provided with transportation and sustenance to the French lines. Queen Ranavalena sent embassadors of the highest rank to the Governments of France, Germany, England, and the United States, protesting against the course pursued by the French officers, and asking for treaties with the German, English, and American Governments, and for their protection. Treaties were made with these governments, that with the United States being ratified in March, 1883. They recognize the fact that the Hova government is the only organized government on the island, and make provision for the protection of our commerce there, and of their rights here. While the embassadors were absent from Madagascar, Queen Ranavalena II died, in July, 1883. Her husband carried on the government till the election of a new queen, which took place in November. The new queen is a cousin of the late queen, and takes the title of Rasuaherina II. It is said that she will be required to marry the prime minister, who is the real sovereign.

The French invasion has made no progress since the early autumn. During the reign of the late queen, infanticide and the trial by ordeal were prohibited, under the severest penalties, the slave-trade was completely abolished, the negro slaves, from the African coast, were emancipated, and the domestic slavery—a mild form of peonage, the peons being natives of the island, and belonging to the subject tribes —was greatly mitigated, and will soon be entirely abolished. A regular Parliament is to be established during 1884. The Sakalavas, once a powerful tribe, are now broken into small fragmentary tribes. (For latest exploration, see page 387.)

MAHDI, EL, commonly called "the False Prophet." This name is the title of an expected deliverer of Islam, signifying "He whose path is directed by God." The Fagih Mohammed Achmed claims to be the prophesied Mahdi. The prophecy is ascribed to Mohammed, and is to the effect that in the year 1300 of the Hegira an inspired leader will appear who will complete the victory of the Mohammedan faith on earth. Some of the signs by which he is to be known are, that he shall bear the same name as the founder of Islam; that his right arm shall be longer than his left; that he shall have a wart on his right cheek, etc. Several persons in recent times have been supposed to fulfill the prediction, among them the Emir Abd-el-Kader. The Fagih Ibrahim Sherif ed Din, in Bagirmi, attracted thousands of followers as long ago as 1857, in the character of the Mahdi. Others, in various Mohammedan lands, have undertaken the *rôle*. The most noteworthy is the head of the Senussi order, Sidi-Mahdi-ben-Senussi, who was announced by his father, Sidi-Mohammed-ben-Ali-es-Senussi, as the coming divine emissary, whose epoch would be marked

by the downfall of the Turkish sultanate, and the re-establishment of the Arab power.

Mohammed Achmed was born about 1842, in Dar Dungala, a district of Nubia, on the left bank of the Nile, in latitude 20°. The inhabitants of this district furnish the bulk of the Gellabas, or itinerant traders, who devote themselves to the slave-traffic, and the Fagihs, or interpreters of the Koran, in the Soudan, who, beyond an indifferent acquaintance with the doctrines of the sacred book, and a knowledge of reading and writing, are not superior in education to the rest of this population. Mohammed Achmed, in his youth, worked with his brothers as a boat-builder in Khartoum. Possessed with the desire to become a Fagih, he learned to read and write, and for some time kept a school in Khartoum. He then went to the district of Tamaniat, thirty-two miles north of Khartoum, where he established himself as a Fagih. These teachers of the Koran, since that book embodies the law as well as the religion of Mohammedans, and is supposed to contain all the rules of civil conduct, are the counselors of the people in all the affairs of life. They bear the title of sheik. Nur-ed-Din, another Dongola Fagih, was already settled there, but the Sheik Mohammed Achmed attracted a considerable *clientèle*. Ere long he settled on the White Nile, residing part of the time on the island of Aba, in 13° 20′ north latitude, and the rest in a small village, named after himself, on the right bank, a little to the north. Up to this time he possessed no greater influence or importance than the multitude of other Fagihs of the Soudan. He now began the life of a dervish, and took up his abode in a dried-up cistern on the island. For six years he only left his cave on Fridays, to go to the mosque, and passed all his time in contemplation and the study of the Koran. His object was to assume the *rôle* of the Mahdi, but he gave no intimation of his mission at this time. Reports were spread far and wide of his fasting and meditation, of the emotion he exhibited in reading the Koran, and of his benignant kindness. The custom grew up of visiting the holy man to receive his advice on religious matters. Large crowds of pilgrims to the hermitage extended his fame.

When he had become widely revered as a saint, and felt sure of his influence, he finally announced himself as the man of prophecy. To a large assembly he unfolded his mission in the following language: "Twice already have I been called upon by the archangel Gabriel to unsheathe the sword of the faith, in order to reform the bad Moslem, and establish the peace of the world by a universal Mohammedan empire. To this mission have I been summoned by the Prophet. Follow me, therefore, for I am the Mahdi, and I will lead you into the kingdom which Allah has prepared for the faithful." In the first half of 1881 he issued proclamations to the Arab tribes of the Kababish, Allowin, and Baggara, saying: "Know that God has chosen me to the great succession, and that the Prophet, lord of life, has announced that I am the expected Mahdi, and has placed me upon his seat over princes and lords; and God is with me in person, and has set upon me the marks of prophecy, which are the warts on my right cheek."

When Raouf Pasha, Governor-General of the Soudan, heard in July, 1881, of these proclamations, he sent Abu Saud to summon Mohammed Achmed to Khartoum. The False Prophet was found in his village, with a guard of a dozen armed Arabs. To the question why he created a disturbance, he said that he was the Mahdi; that he had been called by the Prophet, who appeared to him in his sleep, and that he only preached this to the people. He refused to go to Khartoum, and, when threatened with arrest, declared: "God shields me. Your soldiers will be devoured by the earth and the water." Mohammed Achmed's brothers offered to bring him to Khartoum and furnish security for his good behavior, but Abu Saud inconsiderately declined their assistance. In the expedition of three hundred infantry with a cannon, sent to capture the pretended Mahdi, three officers disputed the command. The troops, on landing, broke up into little bands, which the followers of the Mahdi, exasperated by the act of one of the officers, who shot a man that he mistook for the prophet, cut down without mercy. The steamer lay-to before the village, and Abu Saud, who remained on board, made preparations to cannonade the place. Mohammed Achmed rode down to the bank and waited, only a dozen yards from the muzzle of the cannon, while the nervous artillerist loaded the piece and fired. Such miraculous proofs of divine protection the Mahdi never lost an opportunity of showing. His later exploits, and the circumstances which enabled him to raise the banner of revolt in Kordofan, Darfour, Sennaar, and on the Red Sea coast, are described in another place. (See EGYPT.)

MAINE. State Government.—The following were the State officers during the year: Governor, Frederick Robie, Republican; Secretary of State, Joseph O. Smith; Treasurer, S. A. Holbrook; Attorney-General, Henry B. Cleaves; Superintendent of Common Schools, N. A. Luce; Land Agent, Cyrus Packard; Insurance Commissioner, Joseph B. Peaks. Judiciary, Supreme Court: Chief-Justice, John Appleton; Associate Judges, Charles W. Walton, William S. Barrows, Charles Danforth, William W. Virgin, John A. Peters, Artemas Libby, and John W. Symonds.

Legislative Session.—The Legislature convened on the 3d of January and adjourned on the 15th of March until the 29th of August. On the 16th of January William P. Frye, Republican, was re-elected United States Senator over Harris M. Plaisted, Fusionist, by 27 to 3 in the Senate and 108 to 37 in the House.

There were passed at this session 352 acts and 97 resolves. Among these measures were the following:

Prescribing that, unless otherwise provided in the resolve submitting it, every constitutional amendment shall take effect on the first Wednesday of January following its adoption by the people.

Providing for greater security against fire in buildings used for public purposes, prescribing fire-escapes, the opening of doors outward, etc.

Providing for an annual examination of the accounts of the State Treasurer.

To provide for the establishment of titles to lands among the Penobscot Indians, and for the preservation of evidence of such titles.

Relative to the taxation of horse-railroad companies.

To prevent deception in sales of butter and cheese.

For the prevention of cruelty to animals, prohibiting cock and dog fights, and prescribing the manner of transporting cattle and other animals by rail.

Providing for the granting of conditional pardons.

Amending section 2 of chapter fifty-nine of the revised statutes by striking out in the first and second lines the words following: "No white person shall intermarry with a negro, Indian, or mulatto, and," so that said section, as amended, shall read, "No insane person or idiot shall be capable of contracting marriage."

Restoring the death-penalty for murder.

Providing for the taxation of telephone companies.

Concerning trade-marks and their registration.

The following constitutional amendment prohibiting the liquor-traffic was proposed, to be submitted to a popular vote:

Resolved, Two thirds of both Houses of the Legislature concurring, that the following amendment to the Constitution of the State be proposed, viz.:

The manufacture of intoxicating liquors, not including cider, and the sale and keeping for sale of intoxicating liquors, are and shall be forever prohibited. Except, however, that the sale and keeping for sale of such liquors for medicinal and mechanical purposes and the arts, and the sale and keeping for sale of cider, may be permitted under such regulations as the Legislature may provide. The Legislature shall enact laws with suitable penalties for the suppression of the manufacture, sale, and keeping for sale of intoxicating liquors, with the exceptions herein specified.

The divorce laws were amended so as to read as follows:

SECTION 2. A divorce from the bonds of matrimony may be decreed by the supreme judicial court in the county where either party resides at the commencement of proceedings, for causes of adultery, impotency, extreme cruelty, utter desertion, continued for three consecutive years next prior to the filing of the libel, gross and confirmed habits of intoxication, cruel and abusive treatment, or on the libel of the wife, where the husband, being of sufficient ability, grossly or wantonly and cruelly refuses or neglects to provide suitable maintenance for her: provided the parties were married in this State, or cohabited here after marriage; or, if the libelant resided here when the cause of divorce accrued, or had resided here in good faith one year prior to the commencement of proceedings. Either party may be a witness.

SEC. 3. All decrees of divorce shall, in the first instance, be decrees *nisi*, to become absolute after the expiration of six months from the entry thereof, on the application of either party to the clerk of the court, and on such application the clerk shall enter a final decree; unless the court has for sufficient cause, on application of any party interested, otherwise ordered.

SEC. 4. After a divorce from the bonds of matrimony, the party on whose petition the divorce was granted shall not marry again within two years after the entry of the final decree, except on permission granted by the court. The party against whom the divorce was granted shall not marry again within two years from the entry of said decree, and not afterward except on permission granted by the court.

Several acts were also passed for the protection of salmon, landlocked salmon, trout, herring, lobsters, moose, caribou, and deer, restricting the pursuit of them.

The Legislature reassembled pursuant to adjournment, received and accepted the report of the committee on the revision of the statutes, and adjourned *sine die*.

Temperance and Greenback Conventions. — A Temperance Convention was held in January, which put forth resolutions declaring that prohibition has been successful in Maine; that alcoholic liquors are unnecessary for medicinal purposes, unchristian for sacramental uses, and not indispensable for mechanics and arts; and asking for a prohibitory amendment.

On September 19th about fifty members of the Greenback party met in Lewiston, and after vigorous opposition adopted resolutions reaffirming the national platform adopted at Chicago, June 9, 1880, and calling a State Convention in May, 1884.

Common Schools.—The State Superintendent of Schools reports that the year 1883 was a very satisfactory one. The amounts of money available for educational purposes were increased $46,145, making the total resources of the State $1,079,015, of which amount $706,848 came from the town treasuries, $33,554 from local funds, and the balance from the State treasury. The sums expended amount to $1,001,470, an increase of $49,121, which leaves a balance of $77,545 unexpended. The average wages paid to male teachers, excluding board, were $31.81 a month, an increase of $2.28, and the average wages paid to female teachers, excluding board, were $15.36 a month, an increase of 76 cents. The whole number of pupils in the State is returned to the superintendent's office as 213,877, an increase of 870, but the number of different pupils attending school was 146,916, a decrease of 1,072.

Savings-Banks.—The number of savings-banks and institutions of savings doing business in the State is 54, the Pembroke Savings-Bank during the year having voluntarily surrendered its charter. The present number of depositors is 101,822, of whom 80,982 have to their credit a sum not exceeding $500 each, and the average of the whole being $308.10 to each depositor. The aggregate amount of deposits Nov. 1, 1883, was $31,371,868.87. The number of depositors Nov. 1, 1882, was 95,489 and the amount of deposits $29,503,889.71, showing an increase during the year of 6,333 accounts and $1,867,979.16 in amount, and a decrease in the average of each deposit of 77 cents. Regular semi-annual dividends were paid by all the savings-banks as follows: One bank 6 per cent. per annum, four banks 5 per cent., five banks 4½ per cent., four banks 4¼ per cent., forty banks 4 per cent.

Ship-building and Ship-owning.—The following is a comparative summary for the past two years:

VESSELS.	1882.		1883.	
	No.	Tons.	No.	Tons.
Barks	..	.....	4	3,654·36
Barkentines	12	5,897·02	6	3,439 29
Brigs	..	.....	2	986·40
Schooners	124	39,821·52	133	37,987·79
Sloops	7	120·91	7	204·69
Ships	14	24,862·24	18	26,251·92
Steamers	11	4,383·22	9	2,238·68
Total	168	75,084·91	174	74,708·18

RECAPITULATION.

DISTRICTS.	1880.	1881.	1882.	1883.
Bath	22,185·92	36,334·13	42,137·71	36,147·82
Bangor	88·89	1,042·75	1,402·50	1,889·50
Belfast	2,257·72	5,677·46	6,681·03	9,008·39
Castine	1,845·99	1,390·32	1,055·57	888·07
Frenchman's Bay	28·89	31·30	246·82	602·41
Kennebunk	1,746·47	1,956·09	730·92	897·04
Machias	1,007·58	393·30	2,904·40	4,881·04
Passamaquoddy	.....	182·90	83·75	981·00
Portland	3,099·11	2,087 10	5,379·58	5,768·49
Waldoboro'	4,312·94	8,551·00	13,258·58	11,274·01
Wiscasset	278·69	1,846·58	2,174·59	2,420·36
Aggregate	35,847·15	58,092·93	75,084·91	74,708·18

The size of the schooners built in 1882 averaged 321·14 tons; this year the average has only been 285·22 tons, but the average size of the ships built has increased from 1,775·87 tons in 1882 to 2,019·38 tons this year.

The following table shows the tonnage of the vessels owned in the several districts, as well as the number of fishermen:

DISTRICTS.	Vessels owned.	Tonnage.	Value.	Tonnage fishing-vessels.	Men engaged in fisheries.
Bangor	185	27,497	.....	60	....
Bath	294	161,051	$5,708,575	189	43
Belfast	322	98,529	2,025,000	1,767	500
Castine	304	24,264	43,200	2,855	650
Frenchman's Bay	252	14,824	376,500	1,719	440
Kennebunk	36	4,829	.....	279	200
Machias	284	23,480	496,700	519	500
Passamaquoddy	211	24,679	820,000	1,139	5,000
Portland	326	120,739	3,950,000	7,014	1,800
Saco	23	2,908	.....	60	20
Waldoboro'	480	123,405	4,393,737	35,500	2,000
Wiscasset	151	6,574	.....	2,380	800
York	11	343	7,200	88	30
Total	2,899	628,122	$17,330,912	53,014	11,988

Of the vessels owned, 102 are steamers with an aggregate tonnage of 17,369, and valued at $1,696,645. The total number of men engaged in navigation is 12,868, whose average monthly wages amount to $26. The average wages in the Waldoboro' district rises as high as $60, and in the Machias district the average is $32. In the Castine, Kennebunk, Passamaquoddy, Portland, and Saco districts the average is $25; in the Bath, Belfast, and York districts it is $20, and in the Frenchman's Bay and Wiscasset districts it is $18. The average monthly wages of those engaged in the fisheries is $32.50—in the Castine district, $50; Kennebunk and Wiscasset, $40; Machias, 35; Waldoboro', $38; Frenchman's Bay, $26; Portland and Saco, $25; York, $16.

Manufacturing.—The following is derived from the report of the Secretary of State:

COUNTIES.	Assessed value of manufacturing property.	Hands employed in manufacturing.
Androscoggin	$7,699,951	11,520
Aroostook	303,555	1,137
Cumberland	3,622,285	13,137
Franklin	222,861	1,501
Hancock	449,460	1,352
Kennebec	1,394,585	4,589
Knox	1,027,300	3,390
Lincoln	288,200	854
Oxford	700,840	1,966
Penobscot	2,320,050	6,655
Piscataquis	408,990	1,476
Sagadahoc	1,082,100	3,308
Somerset	978,350	2,965
Waldo	276,835	1,828
Washington	1,243,648	3,989
York	5,102,389	9,787
Total	$27,124,649	69,904

The statistics of the cotton-manufacturing industries show that the whole number of mills in the State is 26; number of spindles, 786,182; capital, $12,987.40; amount paid for labor, $3,608,234; value of materials, $7,660,008; value of goods manufactured, $112,783,585; value of products, $9,939,389; number of hands employed, 14,903. The wages of skilled operators are $1.88 per day for men, and $1.17 for women; unskilled, $1.05 for men, 86 cents for women. Three mills report increase of capacity during the year.

In woolen manufacturing there are 63 mills; capital, $4,103,160; value of products, $7,902,161; value of materials used, $3,526,589; amount paid for labor, $1,420,595; hands employed, 5,159; wool used annually, 1,404,853 pounds of foreign and 7,551,984 of domestic.

The total number of ice-houses in the State is 64; number of tons cut, 911,500; number of tons shipped, 801,410; capital invested, $2,007,500; greatest number of hands employed, 6,530; number of teams employed, 578; average wages paid, $1.53 a day for men and $2.76 for teams.

The total number of establishments turning out canned products is 104; assessed value, $638,050; number of hands, 9,509. The following table shows the classification:

MATERIALS.	Factories.	Assessed value.	Hands.
Corn	41	$221,200	2,266
Corn and apples	8	12,600	486
Corn, meat, and fish	4	11,500	205
Blueberries	5	24,100	351
Fish	13	69,550	371
Fish and sardines	3	6,860	285
Fish and lobsters	3	100,300	3,550
Sardines	22	92,670	1,640
Lobsters	1	1,100	25
Lobsters, sardines, and blueberries	4	60,000	320

In the granite business there are 44 companies engaged, with an assessed value of property of $533,100; hands employed, 2,543.

Seventeen companies are in the lime business: capital, $415,100; hands employed, 822.

In slate the total number of companies doing business is 11: assessed value, $81,000; hands employed, 420.

There are 45 yards in the State used in ship-building. Capital, $1,645,500; hands employed, 4,345; average wages of skilled labor, $2.53; ordinary labor, $1.78; materials produced in Maine, $357,500; all lumber, $1,076,800.

Financial.—The following table shows the financial standing of the counties on the last day of the year 1882:

	Total liabilities.		Total liabilities.
Androscoggin....	$95,070 64	Penobscot.....	$54,949 07
Aroostook.	17,549 93	Piscataquis.....	6,633 18
Cumberland.....	27,652 08	Sagadahoc.....	64,000 00
Franklin.....	1,994 31	Somerset.....	6,241 02
Hancock.....	887 50	Waldo.....	5,068 94
Kennebec.....	28,145 28	Washington	.....
Knox.....	85,876 12	York.....	1,321 06
Lincoln.....	3,472 49		
Oxford.....	1,266 67	Total.....	$402,628 24

The reduction of the indebtedness of counties for the year 1882 was $61,438.91. The several counties expended in 1882 the sum of $5,796,774.39, divided as follows: State tax, $971,877.59; county tax, $271,959.32; schools, $903,698.76; highways and bridges, $692,-415.82; support of the poor, $352,895.77; all other purposes, $2,615,190.27.

A net reduction was made in the public indebtedness in the State, for the year, of $924,-572.76.

The number of taxable polls in 1882 was 150,936; in 1883, 152,974. The total valuation in 1882 was $221,599,220; in 1883, $225,-494,075.

Lumbering.—Of the lumber rivers of the East, the Penobscot, in the magnitude of its product, is far above its competitors. In eighteen years past there has been cut upon the banks of this river and its branches the immense amount of 3,137,903,254 feet of lumber, board measure, and this has been sent to all parts of the world from the port of Bangor. This is an average of 174,327,958 feet a year. The foreign trade declined from 1875 steadily, until in 1879 it was almost nothing, everything going coastwise. The United Kingdom deal-trade was taken from Bangor by St. John, New Brunswick, which, being in a British province, could sell cheaper. Then Bangor's European deals were sawed into New York stuff, which paid better. The West India trade continues.

About one third of the logs cut on the Penobscot are sawed into lumber at the steam-mills on the river at Bangor. The other two thirds are manufactured by the great water-mills which dot the valley at intervals of twelve miles above the city.

The lumber-cut of 1883-'84 will be smaller all over the State than was that of the previous season. The principal reasons are the low prices, a general feeling that the business has been overdone, and the destruction wrought by the recent tornado, which has made many localities impracticable for lumbering. The cut of 1882-'83 was about 175,000,000 feet, the largest for a long while, and, although the water-courses were not very high, there was an easy driving-pitch in most courses, and only about 7,000,000 feet of logs were hung up or left behind. When the river opened to navigation there were about 35,000,000 feet of old logs at the up-river booms and 12,000,000 feet at the Bangor steam-mills. These amounts, added to the amount of new logs driven in, made a total of 15,000,000 feet for the year's sawing.

Agriculture.—The acres of land under cultivation, including pasturing, are 2,865,661; acres of waste land, bog, etc., number 813,404; acres of hard-wood growth, 1,728,970; acres of soft-wood growth, 2,274,399; acres of water-surface, 476,664; number of farms, 60,835; number of farms occupied by owners, 53,737; number occupied by tenants, 3,403; number of land-owners, 83,213; number of farm-laborers, 12,988; average wages paid per month, $18.90.

Miscellaneous.—During the year ending Nov. 30, 1883, 48,464 barrels of mackerel were inspected, 15,084 of herring, 307 of alewives, and 1,427 of cod.

The report of the Attorney-General for the year ending Dec. 1, 1883, shows the number of prosecutions and offenses for the year to be 1,343, as follow: homicides, 4; arson, 7; perjury, etc., 4; forgery and counterfeiting, 4; compound larceny, 45; larceny, 83; burglary, 5; robbery, 3; rape, 3; assault with felonious intent, 20; assault and battery, 108; offenses against chastity, morality, etc., 19; malicious mischief, 11; cheating and conspiracies, 7; defects in highway, 5; nuisances, 161; violation of liquor law, 628; other offenses, 170; costs allowed by court and county commissioners, $59,521.89; amount of fines and costs imposed, $43,520.01; amount of fines and costs collected, $39,919.10.

MANITOBA, a province of the Dominion of Canada, formed in 1870. Area, about 125,000 square miles. Winnipeg, the capital, stands at the confluence of the Assiniboine and Red rivers, near lat. 50°. In 1870 it was simply a Hudson Bay Company's post, named Fort Garry, with a population of about 200. The census of 1881 showed a population of 8,000, and since then it has increased to about 25,000. Seven lines of railway center in the city.

History.—Owing to the disturbed state of the colony during the years 1866-'67, the Hudson Bay Company expressed to the Government of Great Britain a desire to give up the civil control of the colony, merely retaining its commercial rights. With a view to amalgamate this territory with the other British-American provinces, provision was made in 1867 in the "British North America Act," for this purpose. The negotiations for the transfer of the territory from the Hudson Bay Company to the British Government, and from it to Canada, were completed during 1868. The company reserved the right of trade, and its forts with the lands surrounding them, as well as one twentieth of all the land between the Lake of the Woods and the Rocky mountains

south of the line of the North Saskatchewan. It was to receive from Canada, through the British Government, £300,000 in cash. By a strange oversight, no mention was made of the colonists in this transfer to Canada, the evident belief being that all residents were officials or servants of the company. This caused dissatisfaction among English, Scotch, and French alike; but no action would have been taken to prevent the peaceable transfer of the district but for other reasons.

In 1868 the settlement was visited by the grasshopper scourge, which reduced the colonists to the verge of starvation. To relieve the distress, and to create a kindly feeling for Canada, the Canadian Government sent agents into the district with authority to construct a road from Winnipeg to the Lake of the Woods, thus intending to give the colonists employment during the winter. But the agents paid small wages, and charged high prices for the provisions sold to the men. Other causes of trouble were as follow: During 1866 and subsequent years the Fenians were active in their hostility to Great Britain, and some of them found their way to this discontented colony and assisted in sowing seeds of corruption. Again, in a settlement so isolated as this one was from Canada, and at the same time contiguous to the United States, there were naturally more American citizens than Canadians; and, even among some of the older residents, stronger ties of business and of friendship had been formed with the country at hand than with the distant Canada. These disseminated republican ideas, and endeavored to overthrow British rule. But the most potent cause of final disturbances was the French Roman Catholic element. These numbered nearly half of the entire population; and they were offended because their race and their religion were not specially recognized at first in the negotiations of transfer. When the Governor appointed by the Canadian Government presented himself in the settlement, in 1869, he was refused admittance by the French party. The "loyal citizens" were then summoned to put down the rebellious party. This the English and Scotch could easily have done; but while they would not actively oppose the transfer, they refused to assist in establishing the authority of Canada, arguing that as Canada had acquired the territory without consulting them, she was in duty bound to establish her authority without assistance from them. The "Provisional Government" was soon after formed, being composed of French- and English-speaking residents, in equal numbers. But the English soon withdrew from all active part in the management of affairs. Local agitations excited the "Provisional Council" to such an extent that one man was tried by court-martial and shot for opposing the French party. This was at once the signal for complete disruption between the English and French residents, and the means of stirring the Canadian Government to decided action. Early in 1870 a brigade of soldiers was dispatched from Canada, under the command of Colonel Garnet Wolseley. Great delay and ill-feeling were caused by the refusal of the United States Government to allow the steamers carrying the provisions to pass through the Sault St. Marie canal. From Thunder Bay, on Lake Superior, to Winnipeg is 500 miles. Of this distance over 400 were traversed in small boats without unloading, although for 50 or 60 miles they had to be hauled against strong currents. Often Col. Wolseley himself assisted in the work, wading to the arm-pits. At every portage both the boats and their loads had to be carried over on the backs of the hardy soldiers. It was such work as this that led Sir Garnet Wolseley to say, in his address on returning from the Ashantee war, that "he wished for a battalion of his Canadians—the best troops in the world." The brigade reached Winnipeg in the latter part of August, only to find that the President of the Provisional Government and his *confrères* had made a hasty exit from the town. Col. Wolseley was escorted from Lake Winnipeg to Fort Garry (Winnipeg) by the Hon. Donald A. Smith, Governor of the Hudson Bay Company, who formally transferred its territories to Canada. It has since transpired that the leaders in the rebellion were furnished, by order of the Canadian Government, with funds from the Council of Assiniboia, to defray their expenses to the United States—their absence or voluntary banishment being considered the easiest way out of the difficulties.

Physical Geography.—The Red river plain lies between the Laurentian plateau, near the 95th meridian, and the highlands which cross the boundary-line at Pembina mountain, a direct width of 52 miles. The Laurentian plateau is the same that extends north of the St. Lawrence and the great lakes from Labrador to the Lake of the Woods. At this point it turns suddenly northward and continues onward till finally lost on the Arctic Ocean shores. This plateau—or, as many geographers term it, this mountain-range—forms on the one hand the water-shed between the great St. Lawrence lakes and Hudson and James bays, and on the other between Hudson Bay and the Arctic Ocean. The only depression or break in the whole length is where the Nelson and the Churchill flow through into Hudson Bay.

The first steppe includes the valley of Red river and the country immediately surrounding Lakes Winnipeg, Manitoba, and Winnipegosis. The average height of this plain is 800 feet above sea-level. It embraces, including 14,000 square miles of lakes and drowned lands, about 56,000 square miles. The northern portions are covered with timber, while the southern are either entirely bare, or thinly covered with poplar. In short, wherever the prairie-fires have swept, there are no trees. The southern portion of this plain, from Minnesota and Dakota to Lake Winnipeg, about 7,000 square

miles, is very fertile. This plain does not include any of the *Coteau de Missouri*, or the "Height of Land," lying chiefly south of the 49th parallel and extending to the mountains.

The soil has a rich dark color, due to the accumulation of prairie-fire remains, to the deposits of the millions of wild fowl that even still frequent the province, and to the droppings and bones of the buffalo that now frequent it no more. Like all prairie-land, it is hard to "break," but when broken is easily tilled. The marly alluvium underlying the surface is also a soil of the best quality.

Climate.—Like the climate of the whole interior of North America, that of Manitoba is very warm in summer and very cold in winter. The autumn is colder than in Ontario or in northern New York, while the spring is from one to three weeks earlier. Once the spring begins, it becomes warm suddenly. The mean annual temperature at Fort Shaw is 46·91°; at Winnipeg, 34·31°; at Toronto, 46·05°.

The rapid spring and warm summer, and the entire absence of frosts during those periods, satisfactorily determine Manitoba's fitness for agricultural pursuits. The winters in the Red river settlement are undoubtedly severe; but, owing to the great dryness of the atmosphere, the cold is not felt nearly so much as in more southern moist climates.

Vegetation is rapid, and fruits, flowers, and garden vegetables grow to maturity with as little danger from frosts as in central Ontario.

The following figures represent the average yield per acre, of the named products, for the five years ending 1881. (In all cases fractions are thrown off.)

	1877.	1878.	1879.	1880.	1881.
Wheat	26	26	26	29	30
Oats	59	59	58	57	59
Barley	40	68	37	41	40
Peas	32	34	32	38	38
Rye	30	30	40	40	35
Potatoes	304	308	302	318	320
Turnips	...	...	...	...	1,000

In 1881 farmers residing near Winnipeg exhibited at the local fairs roots and vegetables of the following dimensions: Cabbage, 49 pounds; carrots, 11 pounds; turnips, 32 pounds; potatoes, 4 pounds; squash of seven weeks' growth, 5 feet 6 inches around; onions, 4¾ inches through; citrons, 18 pounds; mangolds, 27 pounds; beets, 23 pounds.

Settlement.—During 1881 and 1882 more than 150,000 immigrants settled in the Canadian Northwest. In the first four months of 1883 there were 25,000. These are chiefly from Great Britain, Germany, Norway and Sweden, and Canada—at least 60,000 from the latter.

Fuel.—Coal or lignite underlies the whole country from the 49th parallel to the Arctic Ocean, and from the Souris river, 250 miles west of Winnipeg, to the Rocky mountains. The following are some results of analyses made of coal from the various localities along the line of the Canada Pacific Railway:

LOCALITY.	Distance from Red river.	Thickness of seam.		Fixed carbon.	Volatile combustible matter.	Ash.
	Miles.	Feet.	In.	Per ct.	Per ct.	Per ct.
Souris valley	256	2	3	45·48	39·77	2·76
Souris valley	268	3	2	46·18	35·90	5·92
Souris valley	268	6	6	34·82	48·30	4·88
Souris valley	268	7	3	49·31	38·98	4·71
Great valley	344	5	0	48·61	34·90	4·49
Great valley	346	4	0	38·63	44·48	4·89
Porcupine	390	18	0	46·20	35·14	6·66
Porcupine	391	18	0	36·38	39·97	11·70
Bow river	550	6	0	55·70	29·81	8·73
Belly river	700	4	6	56·54	31·03	5·91

The figures indicate the quality of the coal in the river-valleys. As the banks of the streams are very high, the seams are all exposed, and can be worked horizontally. There are many smaller seams, both above and below the main seams. In the Bow and Belly river districts the coal is somewhat better than on the Souris. The deep river-valleys are found only in the second and third prairie steppes. The average height of the second steppe is about 1,300 feet above the sea. The escarpment forming its eastern limit crosses the boundary at Pembina mountain, and continues northwesterly by the Blue hills of the Souris, the Blue hills of Brandon, Riding, Duck, Porcupine, and Basquia hills. It has a width of 250 miles along the 49th parallel, terminating about the 104th meridian. This vast undulating plain, having a greater elevation, has been acted on by the rivers for a much longer period than the first plain. On a near approach to one of these rivers, the traveler finds himself on an almost precipitous embankment, overlooking, at a height varying between 50 and 350 feet, a broad, level valley, from 500 to 5,200 yards in width. Through the "bottom" meanders the stream, its surface usually some five or ten feet lower than the valley, unless in the spring, when the "bottom" becomes one great lake or river. These valleys, as well as the slopes and gravelly knolls, are as a rule well timbered with oak, birch, poplar, aspen, etc. These "coulées" and the various marshy tracts are the only effective barriers to the destructive prairie-fires in their career over the vast plains. The soil of this steppe closely resembles that of the first, but it is not so deep.

As the second steppe differs from the first, so does the third from the second. Its average height is about 2,000 feet, and its breadth along the 49th parallel about 465 miles. The section lying immediately along the line is not considered good for farming, inasmuch as the northern limit of the "Great American Desert," or the *Coteau de Missouri*, extends for about fifteen miles into Canada for nearly eighty miles along the boundary. This strip is almost devoid of vegetation, its chief product being a thin growth of cactus and stipa. Immediately north of this unfruitful tract, and stretching far away north and northwest to the 60th parallel, extends in one almost unbroken prairie a great

fertile belt. The northern portions are in some places well wooded. The southern is indented with deep river-valleys, often very broad, and being themselves intersected with new systems of "coulées" and gorges. These secondary systems are well wooded.

The regulations for the sale of land are easily complied with, the advantage being as much in favor of the settler as is consistent with security from fraud for the Government. The whole country is being surveyed into townships six miles square, each containing thirty-six sections of 640 acres. These are further divided into quarter-sections of 160 acres. Two of the thirty-six sections are set apart for school purposes, and alternate lots within twenty-four miles of the railway belong to the railway company. To settlers the Government presents a homestead of 160 acres, on conditions of cultivation and actual residence for at least six months in each year for three years. The settler may, in addition, pre-empt another quarter-section. The entire 320 acres must be partly tilled for three years, at which time the holder has the first right of purchase from the Government of the pre-empted 160 acres. Before an alien may take up a homestead, the oath of allegiance must be taken.

Government.—Manitoba and the Northwest Territories are all governed by one Lieutenant-Governor and Council, partly appointed by the Canadian Government, and partly elected by the settlers. The present capital is Regina, in Assiniboia. Justice is administered in the Territories by stipendiary magistrates and the Northwest mounted police. This force consists of 475 officers and men. Its chief duties are to preserve order among the Indians, prevent stealing, and suppress the liquor-traffic.

Education.—The public-school system of Manitoba is largely modeled on that of Ontario, and is administered by a Board of Education, appointed by the Lieutenant-Governor in Council, consisting of twenty-one members, twelve Protestants and nine Roman Catholics. The appointments are for three years, provision being made for the retirement of seven members annually. The board is empowered to resolve itself into two sections, consisting of Protestant and Roman Catholic members respectively, and each section has the entire management of all the schools of its denomination throughout the province. The increase in the attendance at the public schools has kept pace with the rapid development of the province itself, as may be seen by the following table, which shows the attendance at the Protestant public schools:

YEAR.	No. of schools.	Attendance.	YEAR.	No. of schools.	Attendance.
1871.....	16	816	1877.....	88	2,027
1872.....	17	1,095	1878.....	50	2,670
1873.....	17	1,108	1879.....	99	3,614
1874.....	22	1,248	1880.....	101	3,735
1875.....	26	1,595	1881.....	128	4,919
1876.....	30	1,600	1882.....	132	6,972

The Normal School consists of two departments; that for Protestants being in connection with the Protestant schools of Winnipeg, and that for Roman Catholics in connection with the Roman Catholic schools of St. Boniface. The principal of the Protestant department of the Normal School visits various parts of the province during a portion of the year, for the purpose of holding normal institutes.

St. Boniface College was founded shortly after the arrival of the Selkirk colonists, for the training of the children of the employés of the Northwest Company. It was incorporated by act of Parliament in 1871, and is in a flourishing condition.

St. John's College, a mile and a half north of Fort Garry, was founded many years ago. In 1866 it was enlarged by the Bishop of Rupert's Land, and was incorporated in 1871. This institution is under the control of the English Church.

Manitoba College was established by the General Assembly of the Presbyterian Church in Canada in 1871. It was incorporated under its present name in 1873, and has rapidly risen to a foremost position among the educational institutions of the country.

The University of Manitoba was established in 1877, by the united action of all the denominations in the province. Protestants and Roman Catholics agreed that it would be much better to have only one degree-conferring institution in the province, and that all existing colleges and all others that may be founded in future should be affiliated with it.

MARIO, Giuseppe, Marquis de Candia, an Italian singer, born in Cagliari, Sardinia, Oct. 18, 1810; died in Rome, in December, 1883. He entered the military service of Sardinia, but soon became offended with his assignment, and offered his resignation. As the Government refused to accept it, he ran away. He had received a good musical education, and, having a fine tenor voice, he soon made a place for himself in the musical world of Paris. He was in debt, and accepted an engagement at the French Opera (assuming the name of Mario), where he made his *début* in December, 1838, in "Robert le Diable," and achieved immediate success. The next year he sang with Rubini at the Italian Opera, and he soon gained recognition as the first tenor singer on the stage. He visited Russia in 1845, and remained there five years; then went to London and Paris, singing in those two cities alternately for four years. For some time previous to this, Grisi had lived with him as his wife, and finally they were married. In 1854–'55 they made a tour through the United States, and sang in the principal cities. Mario made a farewell appearance on the stage at Covent Garden, London, in June, 1871; but in 1872 he made another concert tour in the United States. By this time, however, his voice had begun to fail, and it was evident that his singing days were over.

Mario made large amounts of money by his profession, but was comparatively poor in his old age. He had a valuable collection of manuscripts and autographs, which he left to one of his three daughters, Mrs. Vaughan.

GIUSEPPE MARIO.

MARYLAND. State Government.—The following were the State officers during the year: Governor, William T. Hamilton, Democrat; Secretary of State, James T. Briscoe; Treasurer, Barnes Compton; Comptroller, Thomas J. Keating; Attorney-General, C. J. M. Gwinn; Adjutant-General, J. Wesley Watkins; Commissioner of Lands, William H. Haywood; Tax Commissioner, Levin Woolford; Insurance Commissioner, Jesse K. Hines. Judiciary, Court of Appeals: Chief-Justice, James L. Burtal; Associate Judges, J. M. Robinson, John Ritchie, L. T. H. Irving, R. H. Alvey, Frederick Stone, George Yellott, and Oliver Miller.

Finances.—The condition of the treasury is shown by the tables of the Comptroller for the fiscal year ending Sept. 30, 1883:

Total receipts during the fiscal year	$2,097,376 88
Balance in the treasury, Sept. 30, 1882	638,506 63
Total	$2,735,883 51
Disbursements for the fiscal year	1,758,699 99
Balance in the treasury, Sept. 30, 1883	$982,183 52

The receipts into the treasury for the year were from the following sources:

From the direct tax	$967,618 11
From internal improvement companies—dividends and interest	261,552 99
From ordinary sources, to wit: Licenses, tax on gross receipts of railroads, tax on insurance and commissions, etc.	868,205 78
Total receipts for fiscal year 1883	$2,097,376 88

For the fiscal year 1883 there were no legislative and attendant expenses, and not a dollar was carried out of the treasury proper to the credit of the sinking fund; hence the large balance in the treasury at the end of this year.

Says Gov. Hamilton, in his message:

It appears that there was due from the treasury proper to the four general loans the sum of $1,553,307.09 for receipts received from the special taxes laid for their exclusive use. There is but $191,190.48 in the sinking fund to the general account, and the surplus in the treasury to meet it, and if both could be applied to these loans there would still be left a balance of $379,933.09 due them from the treasury.

All this large sum was wrongfully taken for other purposes and illegally expended upon other objects; in fact, supplied the means for the extravagances and abuses of the past. The laws creating the debts expressly directed that the revenues from taxes laid by them should be applied to the debt, and the Constitution expressly forbids that they should be used for any other purpose; yet neither was observed.

Had they been regarded at all, there could not be that general balance in the treasury that is made to appear at the end of the last fiscal year. That general balance does not belong to the treasury proper. It should be to the credit of the sinking fund and invested in securities for the payment of these debts as they become due.

The public schools got but $468,970.17 for the last fiscal year, when the tax for their benefit yielded $516,004.76. The difference of $49,034.62 is in the general balance in the treasury, and goes to make up this surplus.

The proceeds from the internal improvement companies are pledged to the payment of the debt and interest. These have also to some extent been diverted.

The public debt of the State at the end of the last fiscal year was $11,269,822.89.

The interest on the public debt for the last fiscal year was $646,165.16. For the present fiscal year, ending Sept. 30, 1884, it will be $578,586.38, and annually thereafter, until reduction of debt, $556,060.14.

The productive assets of the State in internal improvement companies at the end of the last fiscal year (1883) are as follow:

Stock in Baltimore and Ohio Railroad Company	$968,615 70
Stock in Washington Branch	550,000 00
Stock in Baltimore and Frederick Turnpike Company	11,000 00
Bonds in Baltimore and Ohio Railroad Company	366,000 00
Bonds in Northern Central Railroad Company (mortgage)	1,500,000 00
Total	$3,395,615 70

In addition to this there was a partial payment ($36,000) made during the last year on

the mortgage of the Susquehanna and Tidewater Canal paid by the Philadelphia and Reading Railroad Company.

State Institutions.—The Deaf and Dumb Asylum at Frederick has been receiving an annual appropriation of $25,000 for its support. Its last report shows 119 pupils in attendance. The House of Correction is a large annual charge upon the treasury. It promises, however, financial improvement. There were 179 inmates Sept. 30, 1881; 276, Dec. 1, 1883; and 340 at the close of the year. The Penitentiary is self-sustaining. The average annual number of prisoners has been as follows: 1876, 727; 1877, 815; 1878, 939; 1879, 813; 1880, 648; 1881, 545; 1882, 510; 1883, 532.

Conduct of Elections.—On this subject Gov. Hamilton says:

The late registration of voters was conducted with general satisfaction. By the act of 1882, chapter 22, section 2, Baltimore was divided into groups of three precincts in each ward, with a register assigned to each group, making in all sixty registers for the general registration, and for the revision the year following, and to continue until the present session, when the Governor is required to appoint one register for each ward with a yearly salary of $500; thus superseding the group or precinctal registration and returning to the old ward system. The objections to making this a salaried office are apparent and forcible, and a return to the old system will soon and certainly result in the accumulation of names upon the registration-books, and with them all the old abuses of which so much complaint was made. I recommend that the law be so amended that the group system for revision be re-established.

The law for the general conduct of elections should be revised and amended.

Every person elected or appointed to office, before taking it should be required to make oath that he had not, either directly or indirectly, been guilty of bribery, and in all its forms to be prescribed in the oath; and it is to be regretted that the present Constitution omitted even the qualified oath of the kind contained in the old Constitution.

Civil-Service Reform.—On this subject the Governor says:

The civil service in the State requires distinctive reformation. All assessments upon office-holders, whether State or national, for political purposes, should be prohibited; all interference by office-holders in primary meetings, conventions, and in elections, except to vote, should also be prohibited, with penalties and measures for conviction sufficient to enforce an observance of the law. This prohibition should be especially applied to the oyster, the inspection, canal, and school services for the State, and to the police of the city; and in addition to the other penalties prescribed by law, that there be added dismissal from such service for a violation of the law.

Party Conventions.—The Democratic State Convention met in Baltimore on September 19th, and nominated the following ticket:

For Governor, Robert M. McLane, of Baltimore; State Comptroller, J. Frank Turner, of Talbot; Attorney-General, Charles B. Roberts, of Carroll.

The Republican State Convention also met in Baltimore, on the 27th of September, and nominated the following ticket:

For Governor, Hart B. Holton, of Baltimore county; Comptroller, Washington A. Smith, of Dorchester county; Attorney-General, R. Stockett Mathews, of Baltimore city.

Messrs. Smith and Mathews subsequently declined nomination, and the executive committee placed in nomination James C. Mullikin, of Talbot county, and Frank H. Stockett, of Annapolis, for the respective places.

Election Returns.—At the election in November, the Democratic State ticket received a majority. The following is the vote:

	Democratic.	Republican.
Governor	92,694	80,707
Comptroller	98,583	80,099
Attorney-General	98,757	80,021

The Legislature, to meet in 1884, will consist of 14 Democrats and 12 Republicans in the Senate, and 63 Democrats and 28 Republicans in the House.

In the city of Baltimore a Republican sheriff was elected on a fusion ticket by a vote of 27,839 against 26,542 for the Democratic candidate, while the regular Democratic candidate was chosen Superior Court Clerk by a vote of 28,445 against 27,858 for a fusion Democrat. In October Ferdinand C. Latrobe, Democrat, had been re-elected mayor over the citizens' candidate by a vote of 29,147 to 25,669. For members of the City Council a majority in sympathy with the reformers were chosen.

MASSACHUSETTS. State Government.—The following were the State officers during the year: Governor, Benjamin F. Butler, Democrat; Lieutenant-Governor, Oliver Ames; Secretary of State, Henry B. Pierce; Treasurer, Daniel A. Gleason; Auditor, Charles R. Ladd; Attorney-General, Edgar J. Sherman; Secretary of Board of Education, John W. Dickinson; Secretary of Board of Agriculture, John E. Russell; Insurance Commissioner, Julius L. Clarke, succeeded by John K. Tarbox; Railroad Commissioners, Thomas Russell, Clemens Herschel, and Edward W. Kinsley; State Librarian, C. B. Tillinghast. Judiciary, Supreme Court: Chief-Justice, Marcus Morton; Associate Justices, Waldo Colburn, Oliver Wendell Holmes, Jr., Walbridge A. Field, Charles Devens, William Allen, and Charles Allen.

Legislative Session.—The Legislature convened on January 3d, and adjourned on July 27th. The session was the longest on record. On January 18th George F. Hoar, Republican, was re-elected United States Senator by a vote of 148 against 36 for John D. Long, Republican, 88 for Samuel W. Bowerman, Democrat, and 5 for others.

The acts approved by the Governor numbered 235, those approved by the Lieutenant-Governor 4, those becoming laws without signature were 40, the number enacted being 279.

By the requisite votes, a majority in the Senate and two thirds in the House, the Legislature passed a resolve providing for such an amendment to the Constitution that, beginning in 1884, State elections shall occur but once in two years, and that, beginning with 1885, the Legislature shall hold biennial sessions; it also provides that a person shall be eligible as Treas-

urer and Receiver-General for three successive terms, and no more. This measure must be acted upon favorably by the Legislature of 1884, and accepted by a majority of the people, to become a portion of the Constitution.

The session was chiefly remarkable for the number of bills which the Governor vetoed; but one of them was passed over the veto, the large Democratic minority making such a thing impossible as long as party lines were maintained. After the first trial of strength there was a break of party lines, which widened as time went on, several of these vetoes being sustained by a vote of nearly two thirds in their favor. That on which most time was spent and which attracted the most attention was relative to a bill to incorporate the Union Safe Deposit Vaults of Boston.

The length of the session was chiefly due to a prolonged investigation by a joint committee of the two houses into the condition and management of the State Almshouse at Tewksbury. The investigation, comprising sixty-five hearings, and extending over a period of three and a half months, was extraordinary in some of its features.

The special charges contained in Gov. Butler's inaugural address were as follow:

Have there not been scandals, public and well known, for years in that institution? Was it not charged, and never denied, that, for years, of the infants born in or sent to that institution more than 90 per cent. died as such? All of these did not fill an infant pauper's grave, even; for it can be shown that from 150 to 250 infant corpses were annually sold as merchandise to a single medical institution in the State, for from three to five dollars each. Many, if not all, came from thence, besides large numbers of bodies of pauper adults, furnished for other medical purposes, and sold as merchandise for very considerable sums; and that done secretly, and not under and in accordance with the provisions of the law, which, under certain safeguards, permit almshouses to furnish the unclaimed bodies of deceased paupers for dissecting purposes to surgeons and medical schools, according to the decent and humane provision of the statute. Was this not in testimony before a grand jury? Has it not been publicly known? What record has the State of these dead infant children, to whom it took the place of parent? What account, even, has ever been returned of the price of this merchandise of the ghouls? What record of birth or death or burial-place, by which such bodies could be identified or classified?

Another charge was, that one of the trustees had said that he made enough out of the commissions on what was bought for the institution to pay him for his time. Another was, that the salaries of the State institutions were 70 per cent. of the appropriations.

A majority of the committee reached a conclusion that the Governor's charges were not sustained, and their report was approved by the Legislature. In relation to salaries the report says: "We dispose of the latter, so far as it touches this institution now, by stating that the appropriation for the Tewksbury Almshouse last year was $93,000, and of this $20,000 went for salaries of officers and wages of attendants and nurses. The per cent. in this case is less than twenty-two. Our conclusion as to the trustees is that while we find in the records and in their action evidence of carelessness, we do not find anything to impeach their substantial integrity and efficiency."

Finances.—There are no temporary loans to provide for, and there has been no increase of the funded debt during the year.

Funded debt, Jan. 1, 1888		$32,511,680 90
It has been reduced by the following payments from the sinking funds, viz.: Coast-defense loan	$877,000	
Bounty-fund loan	198,000	
		1,075,000 00
Funded debt, Jan. 1, 1884		$31,436,680 90

Scrip to the amount of $11,000 of the Coast-defense loan and of $2,000 of the Bounty-fund loan, now outstanding, will be paid from the sinking funds, on presentation to the Treasury Department. No further installment of the public debt will be due and payable until 1888.

SINKING FUNDS.

Amount Jan. 1, 1888		$16,944,263 05
Reduced by payment of Coast-defense loan	$877,000	
Reduced by payment of Bounty-fund loan	198,000	
		1,075,000 00
Total		$15,869,263 05
Amount of sinking fund, Jan. 1, 1884		16,836,180 55
Increase		$966,917 50

Troy and Greenfield Railroad and Hoosac Tunnel.—The contracts under which these are operated run till Oct. 1, 1887.

Total income of the State for the year ending Sept. 30, 1888	$298,887 83
Operating expenses same period	168,514 68
Net earnings	$130,373 15

No account is taken in this connection of the Southern Vermont Railroad, which is under lease for a fixed rental of $12,000 yearly.

Expended by manager in construction, same period	$285,615 29
Balance on hand Sept. 30, 1888, unexpended	142,957 95

Of the double track ordered by the Legislature, and continued under several appropriations, $35\frac{53}{100}$ miles have been completed and are now in actual use. It is expected that the road-bed will be ready early in the coming summer. No considerable expenditure has been required in the tunnel during the year.

The Treasurer of the Commonwealth furnishes the following memorandum as to the funded indebtedness on account of the railroad and tunnel:

1888—April 1st	$2,968,565 00
October 1st	109,496 25
1889—July 1st	2,011,324 45
October 1st	142,588 45
1890—April 1st	200,000 00
October 1st	305,129 55
1891—April 1st	216,500 00
July 1st	3,618,242 75
1893—April 1st	200,000 00
July 1st	400,000 00
October 1st	465,000 00
1894—April 1st	85,000 00
July 1st	300,000 00
1895—January 1st	1,506,151 75
July 1st	1,300,000 00
1897—September 1st	370,000 00
Total	$14,198,028 20

Sinking fund needed Jan. 1, 1884	$10,569,880 60
On hand Jan. 1, 1884	5,985,284 29
Deficiency	$4,584,596 31

"It must be apparent," says Governor Robinson in his message to the Legislature of 1884, "that no probable increase of net earnings will meet this deficiency, and therefore I submit to you whether it is not wise to enter upon the accumulation of the sinking funds, or in some other practicable way to provide to meet the whole debt at its maturity."

From the annual abstract of polls, property, taxes, etc., as assessed May 1, 1883, an increase in the total valuation will appear to the amount of $47,083,638, of which $36,586,927 is in real estate, and the remainder in personal property. Polls, dwelling-houses, and horses have increased, while cows and sheep have decreased.

Compared with twenty years ago, the exhibit of improvement is the clearest refutation of the charge that Massachusetts is in the way of deterioration and decay.

	May 1, 1863.	May 1, 1883.
Number of polls	275,758	498,828
Total valuation	$897,150,983	$1,781,297,061
Number of horses	89,226	149,289
Number of cows	158,905	169,879
Number of dwelling-houses	183,528	291,991

The gain in the population of the State during the same period was about 45 per cent.

The total tax for State, county, city, and town purposes for 1883 was $26,323,432, an amount greater than the total for any other year except 1874. It needs no argument to show that nearly the whole of this burden results from municipal action and not from assessment by the General Court. The State tax for 1883 was $1,500,000.

Education.—During 1883 there was raised by taxation, for all common-school purposes, the sum of $5,499,717.83. Add to this the income from funds and other sources, $313,468.19, and you have a total of $5,813,186.02. This sum supported 6,246 schools of the different grades, paying for the services of 9,235 teachers, and affording instruction to 335,872 pupils, whose percentage of attendance was 88·72. All the schools in the Commonwealth have been kept in operation the average time of eight months and nineteen days, the law requiring for all grades below the high-school only six months. Thirty-seven cities and towns have supported evening-schools, having 11,112 scholars. Ninety per cent. of the whole school population have the privileges of high-school instruction.

In addition to the amount paid for public schools, Massachusetts expended in 1883, for the deaf and dumb, the blind, the idiotic, the children at the State Primary School, the boys at the Reform School, and the girls at the Industrial School, more than $180,000.

Out of the whole population of 1,783,085, in 1880, only seven tenths of one per cent. were native-born illiterates, less than that of any other people in the world. The foreign-born illiterates made nineteen and six tenths per cent.; but four fifths of the foreign-born illiterates were upward of twenty-one years of age.

Savings-Banks.—The statement to Oct. 1, 1883, is as follows:

Number of banks	168
Number of depositors	812,955
Total of deposits	$252,607,593 02
Increase in number of depositors during the year	40,437
Increase in total of deposits during the year	$11,296,230 53

The condition of the banks is generally satisfactory. Owing to the gain in deposits, and to the scarcity of other authorized securities, many banks have largely increased their loans on personal security.

Militia.—The entire strength of the militia allowed by the laws now in force is 334 officers and 4,436 enlisted men. In the service at the present time there are 305 officers and 3,587 enlisted men. The Adjutant-General reports:

Total amount of appropriations controlled by the Military Department for the year 1883 is	$160,200 00
The total expenditure (including all contracts to date, and a small amount estimated to cover bills to come in) is about	141,826 38
From the latter amount should be deducted the expenditures on account of war records, soldiers' messenger corps, etc	7,846 06
Leaving the actual expense	$133,980 32

A high degree of efficiency and military knowledge has been attained by the militia.

Health, Lunacy, and Charity.—The Legislature of 1879 accomplished a thorough reorganization of the administration of the public charities — abolishing some boards, consolidating others, and simplifying the whole system. The Board of Health, Lunacy, and Charity, as then and now constituted, consisting of nine persons, is given general supervision over the State Lunatic Hospitals, the State Almshouse, the State Workhouse, the State Primary School, the State Reform School, and the State Industrial School. Other powers, ample and specific, are granted, enabling the board to hold substantial control over those institutions, and over other matters committed to it.

Gov. Robinson says: "I have been urged to recommend to you an abolition of the board, and the creation of two or three in its stead. But, after much reflection and extended inquiry, I must withhold that recommendation for the present."

State Institutions.—There is an imperative demand for increased accommodations for the insane. The hospitals are crowded, and hundreds of inmates are compelled to occupy temporary cots or beds in the corridors and upon the floors. The Governor believes that great economy of room is possible under a wise system of classification, separating the harmless, the criminal, and the dangerous, and under other improved arrangements which professional knowledge and experience will advise.

The financial affairs of the hospitals are reported in excellent condition. The surplus accumulated at Taunton, Worcester, and Northampton has been increased, while at Danvers

the Treasurer's report shows a balance of $1,172.14, so that the $10,000 for an anticipated deficiency has been added to the surplus.

The demand for the abolishment of the Industrial School appears to be based solely on the fact that the average number of girls there is small, being only from sixty-seven to seventy-six during the last four years. No one appears to doubt the helpful influences of the school and of its system of auxiliary visitation; but it is said to cost too much.

The Liquor Law.—The act of 1875 to regulate the sale of intoxicating liquors, as amended subsequently, continues in force. Under the local-option provisions, the will of the people in the different municipalities is annually expressed for or against the issuing of licenses. From the records in the office of the Secretary of the Commonwealth, of the votes in 1882 and 1883, we present the following statement:

	1882.	1883.
Number of towns that voted for license...	59	71
Number of cities that voted for license....	16	14
Number of towns that voted against license....	266	258
Number of cities that voted against license	5	8

The total number of votes "Yes" and "No" in the State was—

	Yes.	No.
1882	88,238	76,903
1883	94,094	82,505

For license fees the receipts of the Commonwealth amount to—

1882	$646,715 93
1883	687,108 30

Fisheries.—Notwithstanding the heavy losses in the Gloucester fisheries—17 vessels, aggregating 1,119 tons—there was a substantial increase in the fishing tonnage. During the year a number of new vessels were built and added to the fleet, the increase being larger than for any other year since 1875—namely, 46 vessels, aggregating 3,635 tons. The mackerel-fishery, on which great reliance is placed, was attended by a light catch, which was not counterbalanced by enhanced prices.

The "Whalemen's Shipping List," of New Bedford, has published its annual review of the whale-fishery. The failure of the Arctic season, with small catches in other localities, brought but small remuneration to those who risked their capital in the whale-fishery. The fleet now numbers 125 vessels of all classes hailing from Atlantic ports, against 138 a year ago, and 19 from San Francisco, as against 8 last year. The number of vessels engaged in sperm-whaling has considerably diminished.

Of the 144 vessels now engaged in the whale-fishery, 94 belong in the district of New Bedford, 7 in Edgartown, 12 in Provincetown, 4 in Boston, 6 in New London, and 2 in Stonington. The other 19 hail from San Francisco. The total tonnage of the fleet is 33,119.

Divorce.—Gov. Robinson, in his message to the Legislature, says:

Up to 1860, full divorce was permitted in this State for five grounds only—adultery, impotency, union for three years with a religious sect denying the validity of marriage, imprisonment at hard labor for five years, and desertion for five consecutive years to the deserting as well as to the deserted party, with the proviso, however, that divorce to the deserting party should be limited to cases in which it was proved that the desertion was for extreme cruelty, or, in case of the wife, neglect by her husband to provide. The laws at present allow absolute divorce for four other causes than those just enumerated: extreme cruelty, gross and confirmed habits of intoxication, cruel and abusive treatment, and neglect to provide. The laws relating to remarriage have also been so modified that the guilty party against whom a divorce has been procured, even on the ground of adultery, is allowed to marry again at the expiration of a certain period.

While the number of marriages increased from 10,873 in 1863 to 17,684 in 1882, or 62·6 per cent., and the population increased 53·4 per cent., the number of divorces rose in the same period from 207 to 515, or 147·6 per cent. During the last ten years the ratio of increase in the number of marriages has been 7·6 per cent., against 14·7 per cent. for divorces. During these twenty years it appears that 36·5 per cent. of the total number of divorces were for adultery and 42·5 per cent. were for desertion, or 79 per cent. for the two causes combined. The largest percentage of increase in the number of divorces for the last ten years has been in Dukes and Nantucket counties, and the smallest in Suffolk.

Women in Office.—In the latter part of the year, Gov. Butler undertook to remove from office Mrs. Clara T. Leonard, a member of the State Board of Health, Lunacy, and Charity, on the ground that a woman was not eligible to the office. The Council refused to concur in this view, and the opinion of the justices of the Supreme Judicial Court was asked. On the 19th of November their opinion was given, of which the essential portions follow:

The statute of 1879, chapter 291, in the second section provides that "the Governor, with the advice and consent of the Council, shall appoint nine persons who shall constitute a State Board of Health, Lunacy, and Charity." The principal question presented to us is whether under this statute it was competent for the Governor, with the advice and consent of the Council, to appoint a woman as a member of such board. There can be no doubt that it is within the constitutional power of the Legislature to provide by a statute, duly passed and approved by the Governor, that women may be appointed members of such board. The question, therefore, is one merely of the construction of the statute and of the intention of the Legislature. The word "persons" in its natural and usual signification includes women as well as men. Throughout our statutes, and particularly in those relating to the punishment of crimes, it is constantly used in a sense which necessarily includes both sexes. In other parts of the statute we are considering the word is used in a sense which clearly includes women. The decision of the Court in Robinson's case, reported in 131 Mass., 376, does not, in our judgment, conflict with this construction. That decision was that under the statute of 1876, chapter 197, which provides that a citizen of this State of the age of twenty-one years and of good moral character may be admitted to practice as an attorney, an unmarried woman was not entitled to be so admitted. Then the only question was as to the construction of the statute of 1876 and the intention of the Legislature expressed therein. The Court considered that by the common law, and the unbroken usage of this Commonwealth under it, women were not compe-

tent to act as attorneys-at-law; that although the word "citizen," used in its most common and comprehensive sense, included women, yet the Legislature in the statute under consideration was not presumed to intend to use it as including women, because such construction would reverse the policy of its predecessors and introduce a fundamental change in long-established principles of law. These considerations, which were controlling in that case, have no application to the question before us. The statute of 1879 does not, upon the construction we give it, introduce any new policy or make any change in established principles of law. On the contrary, it is in accordance with the policy established by former legislation.

We are of opinion that, under the provisions of the second section of chapter 291 of the acts of 1879, it was competent for the Governor, with the advice and consent of the Council, to appoint a woman as a member of the State "Board of Health, Lunacy, and Charity." This being so, the effect of the first section of chapter 79 of the Public Statutes undoubtedly was to confirm and continue in office the members of the board during the terms for which they were appointed.

Party Conventions.—The Republican State Convention met in Worcester on the 19th of September, and nominated the following ticket: For Governor, George D. Robinson; Lieutenant-Governor, Oliver Ames; Secretary of State, Henry B. Pierce; Treasurer, Daniel A. Gleason; Attorney-General, Edgar J. Sherman; Auditor, Charles R. Ladd.

The Prohibitory State Convention met in Boston on the 20th of September, and nominated the following ticket: For Governor, Charles Almy, of New Bedford; Lieutenant-Governor, John Blackmer, of Springfield; Secretary of State, Solomon F. Root, of Barre; Treasurer and Receiver-General, Thomas J. Lothrop, of Taunton; Auditor, Jonathan Buck, of Gloucester; Attorney-General, Samuel M. Fairfield, of Malden.

The Democratic State Convention met in Springfield on the 25th of September, and nominated the following ticket: For Governor, Benjamin F. Butler, of Lowell; Lieutenant-Governor, Frederick O. Prince, of Boston; Secretary of State, Charles Marsh, of Springfield; Auditor, John Hopkins, of Millbury; Treasurer, C. H. Ingalls, of North Adams; Attorney-General, J. W. Cummings, of Fall river.

Mr. Prince declined, as did also Samuel A. B. Abbott, of Boston, substituted by the State Committee, which finally placed James S. Grinnell, of Springfield, in nomination.

On the same day the Greenback-Labor party held its State Convention in Boston, and nominated the following ticket: For Governor, Benjamin F. Butler; for Lieutenant-Governor, John Howes, of Worcester; for Secretary of State, Nicholas Furlong, of Boston; for Treasurer and Receiver-General, Wilbur F. Whitney, of Ashburnham; for Auditor, A. H. Wood, of Lunenburg; for Attorney-General, George Foster, of Lynn.

N. S. Cushing, of Middleboro', was afterward substituted for Mr. Howes, and Hiram W. K. Eastman, of Lawrence, for Mr. Whitney.

Election Returns.—At the election in November, the Republican ticket received a majority. The following is the vote for Governor: George D. Robinson, of Chicopee, 160,092; Benjamin F. Butler, of Lowell, 150,228; Charles Almy, of New Bedford, 1,881.

Of the 8 members of the Executive Council, 5 are Republicans and 3 are Democrats.

In the Senate there are 25 Republicans, 14 Democrats, and 1 Independent Democrat.

In the House there are 137 Republicans, 92 Democrats, 8 Greenbackers, 6 Independents, 1 Independent Republican, and 1 Independent Democrat.

METALLURGY. Iron and Steel.—A new continuous direct process for the dephosphorization of iron in a charcoal-furnace is described by Prof. Särnström as having been experimentally tried at Nyhammar, in Sweden, with satisfactory results. The old Osmund or Catalan process, formerly used in Sweden to produce excellent iron, was intermittent and expensive, involving a large waste of fuel, and had to give way to blast processes. These, being adapted only to ores weak in phosphorus, precluded the use of a large proportion of the magnetic ores of Sweden. It is clear that if the process of conversion takes place in a shaft, as in a blast-furnace, without the temperature becoming so great as to effect any coalescence or complete smelting, and the mass is, at this stage, transferred in a convenient manner to a hearth where the further process of fusing the iron particles can take place, the process will at once become continuous and direct, and will have the advantages of saving fuel and removing impurities in the bloom at the same time. The furnace can be kept closed during the operation, so that the reduction by hot carbonic oxide may proceed continuously. The furnace at Nyhammar consists of a reduction-shaft connected with the hearths by small culverts. These hearths can be closed, having heavy dampers so balanced as to be easily raised and lowered, with holes in their lower part, by which the gases generated by the fuel may pass through the shaft and thus act the part of gas in an ordinary blast-furnace. Charcoal and iron are charged in the shaft of the furnace in proper proportions. The ore will then, as it settles in the shaft, be subjected to the same process of conversion as in the ordinary reduction-zone of a blast-furnace. When it is desired to transfer the spongy iron to another hearth, the raking-down, which is kept up for the purpose of having the furnace always well filled with charcoal and iron until the smelting is nearly effected, is stopped; a hook is passed through the upper holes of the dampers of the culvert through which the raking-down is performed, and the bloom is allowed to go down into the hearth. It may then be easily broken up when one of the dampers is opened. One fire-place should always be kept charged during the operation, so as to maintain a gas pressure in the furnace constantly higher than the pressure of air from without, in order to prevent all suction of air through the open hearth. As soon

as the bloom is removed and the hearth is cleaned out, it is again closed and refilled with charcoal and iron, by raking down from the shaft as before, and the blast is turned on. In the same way, the process may be alternated with the other hearths. A considerable advantage to the practical utility of this furnace is the great ease with which the raking-down, or any other operation which may be required in the hearth while the blast is on, is effected. With a little practice, which an unskilled laborer may acquire in a very short time, it is possible to charge and rake charcoal and ores uniformly down, an advantage embodying a check whereby, to a certain extent, the action in the furnace may be kept perfectly even. The heat thrown out by the furnace was small, and the work of operating it was so simple as to render the managers comparatively independent of skilled workmen. In most of the experiments two barrels, or 12·6 cubic feet, of charcoal to 8 cwt. of ore were used; but toward the finish, the quantity of ore was reduced to 2 cwt. When tested, the iron made by this process did not show any tendency to red-shortness or brittleness; its elasticity was satisfactory and compared well with that of the class of pig-iron made by the Lancashire process. The process is well adapted to resmelting by the Martin process. According to Prof. Särnström's estimates, 15 tons of good merchant iron, containing an average of 0·08 of phosphorus, were made by it from 27 tons of ore containing 0·91 of phosphorus, with an expenditure of about 600 barrels of charcoal and a loss of iron amounting to less than 5 per cent.

In Bull's direct process, no solid carbon is used in the furnace. The charge is made with iron-ore and flux—usually limestone—only, while the furnace is worked exclusively with gas, which is delivered to it in a very highly heated state direct from the producers. Highly heated air is also introduced in sufficient quantities to burn about 10 per cent. of the gas and maintain the furnace at the high temperature necessary to allow the withdrawal of the iron or steel and cinder in a fluid state. The gases rising through the ore and flux under this system are carbonic oxide and hydrogen in equal volumes, together with the nitrogen derived from the air which has been blown into the furnace. These gases being produced entirely outside of the furnace, there is no zone of gasification within it, but only the zones of fusion, reduction, and carbonization have to be provided for. The zone of preparation, in which the ore, fuel, and flux are freed from their moisture and the temperature of the ore is raised to the reduction-point, is also removed from the furnace to a special apparatus. Experiments in the operation of this system were made by the Société John Cockerill at Seraing, Belgium, in 1881. With an ordinary blast-furnace six feet in diameter at the base, and twenty-one feet high, it was found possible to reduce the silicon in the product from 3·40 to ·15; the sulphur from 1·61 to ·33; the phosphorus from 1·76 to 1·10; the manganese to *nil;* the combined carbon to ·52; and the graphite to ·17. At the same time, the output from the furnace was increased enormously, and the quantity of fuel required was decreased in a corresponding ratio. Mr. Bull has not yet erected his furnace on a commercial scale, but is awaiting the perfection of improvements in his calcining oven for heating the ore and flux, and in the air-heating stoves and gas-producers. He is confident, however, that with the enormous increase of the output of the furnace and the great reduction in the amount of fuel consumed, which he has demonstrated, iron or steel ingots can be produced by his system in any district at a cost much lower than the most inferior pig-iron under the present systems.

Lead and Silver.—Mr. Carl Henrich, while smelting at the Benson Smelting Works in Arizona, for lead-silver bullion, had to use as a lead-ore a sulphate of lead (anglesite) with occasional lumps of galena. He had also received for reduction an ore high in silver, carrying about 25 per cent. of iron pyrites, with oxide of iron and quartz or silicates. Finding the old method of reducing anglesite to sulphide of lead and then precipitating the lead by metallic iron to be very unsatisfactory, on account of the quantity of silver-bearing matte produced, and the difficulty, amounting almost to an impossibility, of making a slag free from lead, he made the experiment of reducing the anglesite by the action of iron pyrites with silica. Acting upon the calculation that the reducing power of the pyrites would be about five times that of the galena, he found that, by putting together, in round numbers, 350 pounds of the anglesite-ore (estimated to contain 15 per cent. of galena and 75 per cent. of anglesite) with 100 pounds of the silver-ore carrying iron pyrites, the two ores would reduce each other and the sulphur would be removed in the form of sulphurous acid (SO_2), with the production of very little matte.

Copper.—Heap-roasting of copper-bearing pyrites has been practiced at nine different mines lying along the ore belt from North Alabama to Central Vermont, but can be said to have entirely succeeded only at two neighboring mines lying in Central Vermont. The bed upon which the ore is roasted, having to be well drained, is constructed precisely like the traffic-way of a city street. The plan of the heap is laid off in the form of a parallelogram, 24 feet wide and 50 feet long, and wood—common split fuel-wood is the best—is piled nine inches deep all over the plan. The ore is piled upon this and carefully arranged in successive layers till a bed seven feet thick is formed. One foot of "ragging," or the coarser part of ore that has passed through a screen of holes 1½ inch in diameter, is laid over this, and the fire is started. As soon as the ore has ignited, from the ground one foot upward, "fines," or that part of the ore which has passed through a screen

with meshes of one third of an inch, are shoveled on the heap and constantly added, so as to keep the temperature of the outside nearly endurable to the hand. In about ten days, no part of the heap having been allowed to fuse, no more attention will be needed; and in about eleven weeks the mass will be ready to remove to the furnace. If the operation has been successfully performed, out of 350 short tons of ore put in the heap, not more than twenty tons will require any further roasting. At the Ely mine, Vershire, Vt., and the Elizabeth mine, Strafford, Vt., the entire heaps are smelted, and none of the ore requires reroasting.

The Doetsch process for the extraction of copper has been tested on a large scale by the Rio Tinto company for several years. Its essential features are as follow: The raw ore, broken to a uniform size of about 0·4 of an inch, is piled in heaps from ten to thirteen feet high, in which channels are left along the bottom and vertical draught-holes are provided for. About two per cent. of salt is scattered over the top of the pile, which is about 45 feet wide. A basin for the leaching fluid, about thirty feet square, is formed on the top of the pile, into which the solution obtained after the precipitation of the copper, subsequently saturated with chlorine, is allowed to flow. Trickling through the ore, the solution acts upon the copper, and is gathered in gutters, conducted to tanks, and made to flow through long sluices, where the copper is precipitated with metallic iron. The precipitate is dried on hot iron plates, and the solution, after precipitation, is dropped through a coke-tower, where it is met by an ascending current of a mixture of chlorine and hydrochloric acid.

Experiments begun at Védènes in 1880 for applying the Bessemer process to the reduction of copper were unsuccessful as long as the ordinary Bessemer converter, with its vertical tuyeres, was used, on account of the premature cooling of the copper before the iron and sulphur were entirely eliminated. Horizontal tuyeres having been substituted for vertical ones, so that the blast was forced into the bath at a point above the bottom of the converter, the results were at once improved, and it was found very easy to convert copper matte rapidly into blister-copper containing only from one to one and a half per cent. of foreign substances. The process has been carried out on a working scale in the old Royal foundry at Eguilles, near Sorgues. The operation does not differ essentially from that in the Bessemer steel converter. When the matte treated is very poor, casting must be proceeded with at once, otherwise a violent reaction is liable to take place, but with rich mattes it goes on without any difficulty. Arsenic and antimony are eliminated; cobalt is partly scorified and partly remains with the copper; and nickel and bismuth are both concentrated in the product. The copper obtained has a very constant composition, varying as follows: Copper, from 98·05 to 98·08; sulphur, from ·09 to ·08; and iron, from ·06 to ·04.

Nickel.—Mr. William P. Blake, in a paper read before the American Institute of Mining Engineers at Boston, recounts some of the advances in the metallurgy of nickel that have been made in this country. For some time after its discovery by Cronstedt in 1751, nickel received no applications, and remained comparatively unknown. Inasmuch as nickel first became known in the industrial arts in an alloy, there were no special attempts to produce the metal in a state of extreme purity. The nickel silver of commerce answered all the existing demands, and was of course much easier to make, and cheaper than the pure nickel. It found a large use as a substitute for silverware, especially when the new art of electroplating was developed, and is to this day the most desirable alloy for plating. The use of nickel alloy for small or subsidiary coins next made an increased demand for nickel. Tentative efforts were made by Dr. Feuchtwanger, in New York, in the year 1837, and he actually issued many small one-cent and three-cent pieces, made of a nickel alloy. Switzerland commenced using nickel-alloy coins in 1850; the United States in 1857, though sample coins, one-cent pieces, had been made by Prof. James C. Booth at Philadelphia in 1853. Nickel-ore is more generally distributed throughout the mineral-bearing portions of the United States than is generally supposed. It is commonly associated with chrome-ores from Canada to Maryland, and equally with the chrome-ores of the Pacific slope. The chief supply of nickel for the United States has been obtained from Lancaster Gap, Pa. This locality was worked some thirty years ago by Prof. James C. Booth and others. About ten years later Mr. Joseph Wharton purchased the works, and established the industry at Camden, N. J., where it has since been carried forward. But Mr. Wharton, not being content with the production of impure nickel, early commenced experimenting to determine whether nickel could not be produced in a pure and malleable condition, susceptible of being worked in nearly the same manner as iron. In 1873 Mr. Wharton sent to the Vienna Exhibition a sample of nickel in the form of axles and axle-bearings, and at the exhibition in Philadelphia in 1876 he exhibited a remarkable series of objects made of *wrought nickel*. The judges reported the exhibit to the commission as worthy of an award in the following terms: "A fine collection of nickel ores from Lancaster county, Pa., with nickel-matte, metallic nickel in grains and cubes, and manufactured nickel, both cast and wrought; nickel magnets and magnetic needles, cast cobalt, electro-plating with nickel and cobalt, and salts and oxides of both these metals; the whole showing a remarkable degree of progress in their metallurgical treatment."

Dr. Fleitmann, of Iserlohn, Westphalia, has

improved and cheapened the operation of refining the nickel and toughening it, and has reduced the liability to the presence of blow-holes in castings, by adding to the molten charge when ready to pour a very small quantity of magnesium. Dr. Fleitmann has also succeeded in welding sheet-nickel upon iron and upon steel plates, so as to coat them equally on each face with a layer of nickel. He claims to have produced steel wire similarly coated, and proposes to make nickeled boiler-plates. Up to this time the most direct uses of such nickeled-iron sheets seem to be in making hollow-ware, particularly culinary vessels, and the manufacture has already begun at Schwerte by Dr. Fleitmann. This ware is believed to be far superior to tinned iron or tinned copper for cooking in. The nickel is not only less liable to corrosion, but is harder, will wear longer, and can not be melted off by overheating. The ware is lighter and stronger than tin or copper ware; is susceptible of a high polish and is not easily tarnished. The coating of nickel applied by welding is stronger and tougher than that deposited by electrolysis, and appears to be less liable to scale off.

The general use of nickel in solid articles has heretofore been impracticable on account of its expensiveness and of its brittleness, making it hard to work. A French company now obtain it from New Caledonia so cheaply as to permit them to use it at half the cost of a few years ago; and they have adopted methods of reduction that enable them to roll and forge it and adapt it to the manufacture of many useful articles. Mixed with zinc, copper, or tin, in such a proportion that 20 per cent. of nickel shall be present, it forms a nickel bronze of a desired color and inoxidable. All articles that are now made of brass or copper and nickel-plated may be made of nickel bronze at practically the same cost, and will be one fifth stronger, and may be as much lighter. Added to steel, nickel increases its hardness, renders it inoxidable, and makes it more suitable for edge-tools.

Pure nickel, after melting and casting, generally holds more or less of oxygen in combination, and is brittle. This has to be remedied by incorporating in the melted metal some substance which has a strong affinity for oxygen, and also for the nickel itself. M. J. Garnier has found that phosphorus answers this purpose very satisfactorily, and that it produces effects analogous to those of carbon in iron. If the phosphorus does not exceed three tenths of one per cent., the nickel is soft and very malleable; with more than that proportion, the hardness increases at the expense of the malleability. Phosphorized nickel, when alloyed with copper, zinc, or iron, gives results which are far superior to those that are obtained from the same nickel when not phosphorized. By means of the phosphorus, Garnier has been able to alloy nickel and iron in all proportions, and always to obtain soft and malleable products. The contradictions of chemists, some of whom say that such alloys are brittle, and others that they are malleable, are thus explained by supposing the results to have varied according as the iron contained or did not contain phosphorus.

Tin.—A bed of tin-ore has been discovered in Pennington county, Dakota, in the central part of the Black hills, on a mountain rising about 4,300 feet above the sea, which has been named the Tin mountain. The cassiterite occurs near the top of the mountain, in two distinct forms—a massive form, in close association with spodumene, feldspar, and quartz; and in a granular form, disseminated in a massive micaceous albitic rock or greisen, which traverses the coarse granite in irregular veins. The outcrops or exposures of the ore at the surface are "extensive and decidedly encouraging"; and the percentage of ores to mineral compares favorably with the percentage of tin-stone in the ores of other and well-known tin regions, ordinary hand-samples of the greisen, rejecting the richer portions, having yielded from 6 to 10 per cent. of clean tin-stone, or black tin, of high grade.

Quicksilver.—The quicksilver-mines of the Amiata mountain, in the province of Siena, Tuscany, have undergone an extensive development in late years. The ore, the sulphuret, or cinnabar, is found in the valley of the Siele in an argillaceous lode in the forms both of almost invisible particles and of very rich red masses, sometimes of large size. Two shafts have been sunk, one 170 metres (or 552 feet), and the other 57 metres (or 185 feet) deep, with horizontal workings cutting the lode at three different heights. The ore, having been brought to the surface, is separated from the stone and is also sorted into two different classes, rich and poor, by a screen. It is then run down a self-acting incline, in trucks, to the works, and is reduced by women into small pieces, which are kept as dry as possible. The works are furnished with twelve half-moon retorts of cast-iron for treating the rich ore, and three vertical furnaces for the poor ore. The retorts are arranged horizontally, three by three in four ovens, their mouths being closed by covers luted with clay and kept in place by screws and straps. They are charged, each with from two to two and a half hundred-weight of ore and quicklime, in the proportion of one of the latter to eight of the former, every eight hours, the operation being performed very quickly and the closing effected immediately, to prevent loss of metal, and injury to the men's health from the escaping vapors, for distillation begins at once. The distilled mercury escapes by the neck of the retort, and passes into a receiver, in which cold water is constantly circulating. The vapors from six retorts are condensed in one and the same tank filled with cold water, and the metallic mercury is drawn off from inclined channels at the bottom. This treatment is

given only to the rich ore. The furnaces in which the poor ore is treated are thirteen feet high and three feet three inches in diameter. Each furnace is closed at the top by a hopper with two doors, the upper of which has a water-joint. Twelve charges are made each day, and care is taken to open the upper door as little as possible. The charge consists of two hundred-weight of ore, mixed with a quarter the quantity of charcoal. It is lowered into the furnace by opening the lower door, while the upper door is closed; and a fire is kept burning at the upper part of the furnace to prevent the escape of the gases. The mercurial vapors and gases of combustion are led by a chimney into condensing chambers. From 150 to 160 tons of ore are extracted at the Siele mines every month about 22 tons of metallic quicksilver; and this is packed in about 300 cans with screw stoppers.

Aluminum.—The only establishment at which aluminum is regularly manufactured is at Salindres, where about 2,400 kilometres are produced annually. The metal is prepared by melting the double chloride of aluminum and sodium with sodium and some cryolite as a flux. The new method of obtaining the metal from bauxite, proposed by Mr. Webster, does not promise to be as successful in cheapening its cost as its author hoped it would be. Mr. Webster has suggested a process of preparation of alumina, for the purpose of manufacturing aluminum, by heating alum with coal-pitch; subjecting the resultant mass, broken to pieces, to the action of hydrochloric acid, for the elimination of sulphureted hydrogen; adding 5 per cent. of charcoal-powder or lamp-black, with enough water to make a thick mass; drying the mass made up into balls, and heating the balls to a red heat for three hours under exposure to air and the vapor of water, for the conversion of sulphur and carbon into sulphur dioxide and carbon dioxide, and the removal of impurities. The dry residue, which consists of aluminum oxide and potassium sulphate, is cooled and ground to a fine powder. The powder is then treated with about seven times its weight of water and boiled for about an hour. The solution containing potassium sulphate is then run off and evaporated to dryness, and the alumina is washed out and dried. Mr. J. Morris, of Uddington, near Glasgow, claims to obtain aluminum by treating an intimate mixture of alumina and charcoal with carbon dioxide. For this purpose a solution of aluminum chloride is mixed with powdered wood, charcoal, and lamp-black, and then evaporated, until it forms a viscous mass, which is shaped into balls. During the evaporation hydrochloric acid is given off. The residue consists of alumina intimately mixed with charcoal. The balls are dried, and then heated with steam in appropriate vessels for the purpose of driving off all the chlorine, care being taken to keep the temperature so high that the steam is not condensed. The temperature is then raised, so that in the dark the tubes are seen to be at a low red heat, and dry carbon dioxide is passed through. This is said to be reduced by the charcoal to carbon monoxide, which, as affirmed by Mr. Morris, reduces the alumina to aluminum, the metal appearing as a porous, spongy mass.

Precious Metals.—Prof. Chandler Roberts, who is engaged in the study of metals at temperatures above their melting-points, has described some experiments on the mobility of gold and silver in melted lead. If a lump of a gold-lead alloy with 30 per cent. of gold, covered with lead, is heated in a crucible, the gold appears at the surface the very moment when perfect fusion has been attained. The diffusion also takes place rapidly if the gold alloy is put in a small crucible, and this is placed within another crucible containing lead. By melting in a cylinder, 200 millimetres high, a solid cylinder of lead with a small piece of the gold alloy fused to its bottom—or, better still, by placing the gold at the top of one limb of a U-shaped crucible, and withdrawing test portions from the top end of the other limb—Mr. Roberts arrived at the diffusion rate, 300 millimetres in five minutes for gold. Sir William Thomson has characterized this as a great discovery, remarking that the rate of diffusion of gold in lead appeared to be immensely greater than the rate of diffusion of liquids. The subject, he said, is one, in fact, of which we understand very little, but the property will probably prove of great value in metallurgy, where one example of it, the rapid mixture of spiegeleisen with iron, is well known.

Messrs. Blas and Miest have discovered that if, in electrolysis, compressed ores are used as anode in a bath of an electrolyte containing the same metal as the metal of the ore, on the passage of the current the ore is decomposed, the sulphur, etc., being precipitated at the anode, while the metal collects at the cathode. When ores containing several metals are operated on, the precious metals, being most easily precipitated, are thrown down first in the metallic state at the cathode under the action of a moderate current. The final separation of these metals requires very little battery-power; for the mass of metal, when dissolved under the action of the current, generates sufficient heat for the ulterior separation of each metal. The products at the anode are extracted and purified by treatment with carbon bisulphide, and afterward by separate electrolysis.

Alloys.—Mr. Alexander Dick has produced a new copper-zinc alloy, which he calls Delta-metal, and which, it is claimed, exhibits characteristics as essentially superior to brass as those of bronze are to gun-metal. Its advantages are great strength and toughness, and a capacity for being rolled, forged, and drawn. It can be made as hard as mild steel, and when melted is very liquid and capable of producing sound castings of close, fine grain. The color can be varied from that of yellow brass to that

of rich gun-metal. The surface takes a fine polish, and tarnishes less than brass. The metal when cast in sand has a breaking strain of from 21 to 22 tons per square inch. When rolled or forged hot into rods, the breaking strain is 43 tons per square inch; and when drawn into wire of 22 B. W. G., it is of 67 tons per square inch.

Messrs. Cockshott and Jowett, of Bradford, England, have produced an alloy of manganese with phosphorus and tin and copper which possesses superior qualities of tensile strength and durability. The phosphor-manganese-tin may be used in the same manner and in similar proportions as phosphor-tin, though it should be cast at a little higher temperature, but with more satisfactory results. It furnishes a very convenient form of the combination of manganese and phosphorus, which is valuable on account of the facility it affords the brass-founder, by adding a greater or less proportion of copper, etc., to produce bronze of a quality exactly suitable to the purpose for which it is required. The bronze is made in two qualities, both selling at the same price. The first quality is very tough, and suitable for purposes where the castings are required to withstand a great strain, having been tested successfully for a strain of 34,754 pounds per square inch. The second quality is very hard and tough, has a tensile strength of 29,979 pounds per square inch, and is suitable for bearings and the wearing parts of machinery.

METEOROLOGY. An extraordinary lurid glow in the western sky after sunset, and in the eastern sky before sunrise, attracted the attention of the world during November and December, 1883. The light occupied the usual place of the twilight, except that its focus of brilliancy was shifted a little to the southeast, but was much brighter, was of a deeper red, the colors were more varied and turbid, and it rose to a greater height and was longer continued. It also did not appear at the instant of sunset, but a few moments later, after the lapse of an interval of comparative darkness. A description given by an observer in Umballah, India, will give a correct idea of the spectacle as it was seen everywhere. "The sun," he says, "goes down as usual, and it gets nearly dark, and then a bright red and yellow and green and purple blaze comes in the sky, and makes it lighter again." The phenomenon began to excite attention in the eastern part of the United States about the 27th of November, when it appears to have reached its culmination in America and Europe. The western sky was illuminated as if by the light of a great conflagration, and fire-alarms were sounded in many places. The spectacle was remarked on the Pacific coast a week previous to this; in Europe early in November; and at points in the East Indies and the Pacific Ocean in September. The earliest notices of it seem to have been made in the islands of Rodriguez, Mauritius, and the Seychelles on the 28th of August, in Brazil on the 30th, and on the Gold Coast of Africa on the 1st of September. It was observed at Trinidad, in connection with a "blue sun," on the 2d of September, and at Ongole, India, after the setting of a "green sun," early in the same month. It was usually associated either with a wholly clear sky or with a sky marked only by light, floating, cirrous clouds.

An apparent connection has been traced between the red light and a blue or green coloring of the sun, which was observed in the East Indies and in tropical America early in September. This phenomenon was observed at Panama and Trinidad on the 2d and 3d of that month. At Manila, in the Philippine islands, on the 9th of September, during a light dry mist, the sun appeared green, and diffused over all the bodies it illuminated "a strange and curious greenish hue." Similar colorations were observed at the same time at Colombo, Ceylon, just before sunset, and at Madras, India, where Prof. C. Michie Smith, of the Christian College, remarked the perfectly rayless and bright silvery-white color of the sun on the 9th and its pea-green color on the next day. This was repeated several days afterward. The appearance of a green color in the sun and in parts of the sky, outside of the red glow, was remarked on several occasions in Europe. One observer in England recorded the appearance at sunset of a greenish and white opalescent haze about the point of the sun's departure, that shone as with a light of its own, near the horizon. "The upper part of this pearly mist," he says, "soon assumed a pink color, while the lower part was white, green, and greenish yellow." Another observer described the blue of the sky as changing to green and the green to the ruddy tint, while the sun appeared of a brilliant emerald hue, tingeing every thing with green. Similar phenomena, with variations in detail, were noticed at many places in England and on the Continent, including Berlin, Rome, and Davos Platz, in the high Alps, where the spectacle was very brilliant, and the sun appeared through the day "surrounded by a luminous, slightly opalescent haze, not at all resembling halo or iridescence of vapor."

The red glow and the green sun are regarded as effects of a common cause. The same medium which gives by transmitted light a green color to objects viewed through it will reflect the red rays. In seeking to account for the phenomena, they must be assumed to be due to some peculiar condition of our atmosphere; for if the glow had been produced by any cause outside of the atmosphere, it would have been visible in some form through the night, whereas its duration corresponded tolerably closely with that of ordinary twilight; and the cause must have been co-extensive with the atmosphere, for the glow lasted as long as a twilight, and even longer. The manifestation was not auroral or electrical, for no

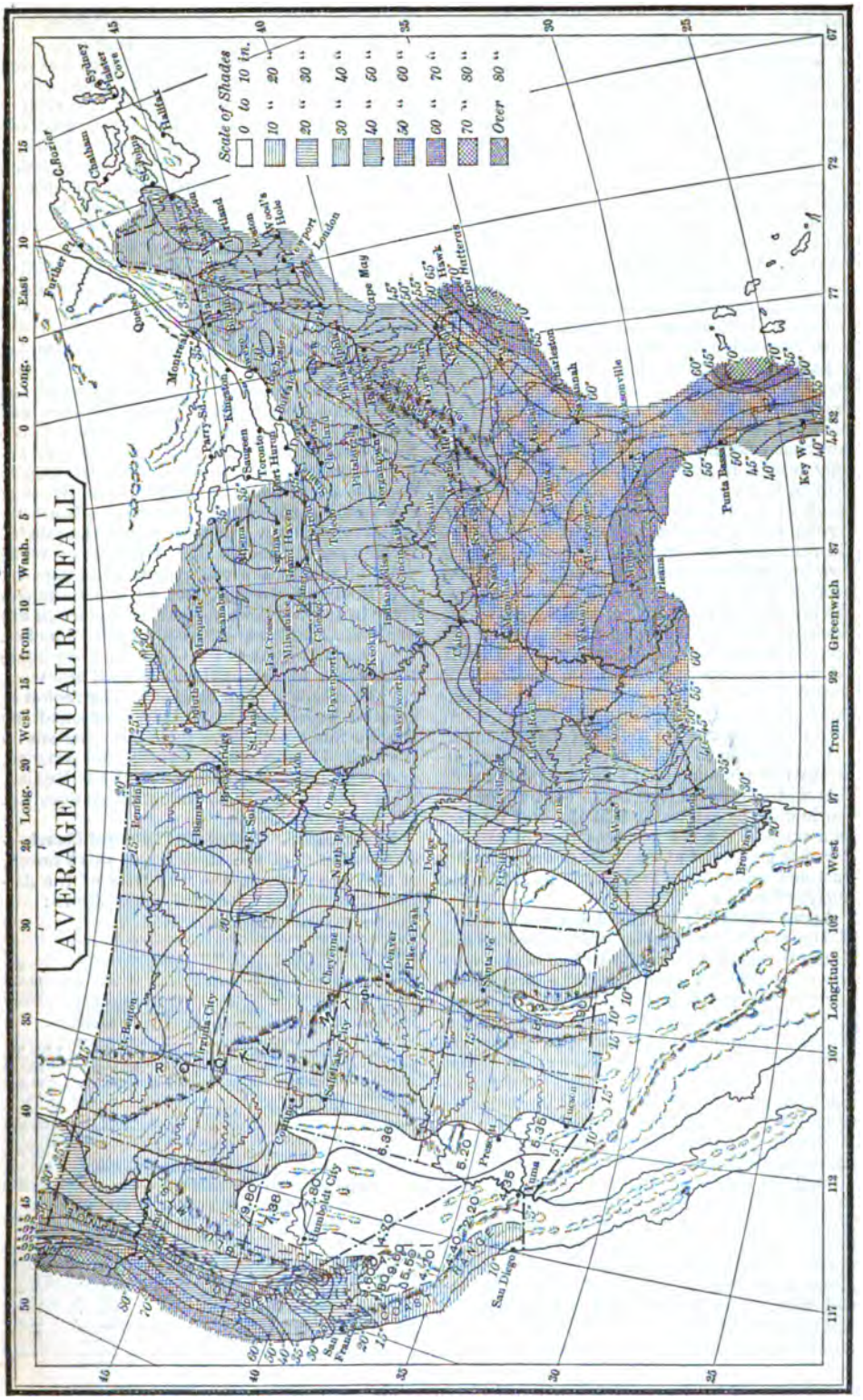
auroras were seen that could reasonably be associated with it, and no electrical disturbances were mentioned in connection with it, except in a single instance by Prof. C. Michie Smith, of Madras. The theory that it is the result of peculiar conditions of vapor in the air receives a partial support from Prof. Smith's spectroscopic observations, in which all the atmospheric lines usually ascribed to aqueous vapor were very strongly developed. A marked general absorption was also observed in the red. The facts may also be cited in favor of this theory, that Prof. Lockyer has seen the sun green through the steam of a steamboat; that it has appeared green through the mists of the Simplon; that bright-green suns have been remarked by travelers in the Arctic regions; and, as stated by the Rev. G. H. Hopkins, of Cornwall, England, that, in a clear sky, when the disk of the sun sinks below the horizontal line of the ocean, the parting ray is a bright emerald-green. It is, however, difficult, on this theory alone, to account for the persistence of the phenomena for so long a period through all the varying conditions of atmospheric pressure. Dr. F. A. Forel, of Morges, Switzerland, mentions, as against the sufficiency of the hypothesis, that in Switzerland the glow, after having decreased subsequently to the 3d of December, attained a second maximum on the 24th and 25th of that month, when the atmospheric conditions were quite different from those which prevailed in the country at the time of the first maximum.

The hypothesis that the spectacle was caused by the presence in the atmosphere of a cloud of "cosmic dust," which the earth had met in its course, has received considerable support. It is now believed, on the authority of Prof. Nordenskiöld, who has collected and analyzed a meteoric dust from the snows of uninhabited regions, and of other observers, that the earth is constantly receiving accretions from space of an exceedingly fine matter having a composition like that of meteoric stones. Mr. W. Mattieu Williams, of London, and M. Émile Yung, of Geneva, collected in December unusually large proportions of such a dust from freshly fallen snows—the former in his garden, the latter on the steeple of the cathedral of Saint Pierre at "les Treize-Arbres," Mont Salève.

The theory which has found most general acceptation is, that the phenomena have been produced by the diffusion through the whole atmosphere of the earth of ashes and cinders from the eruption of the volcano of Krakatoa, in the straits of Sunda, which took place on the 26th of August. The most weighty objections to this theory arise out of the difficulty of explaining how the matter ejected from the volcano could have so quickly reached the enormous height at which the source of the glow was certainly situated, and of the difficulty of imagining it to remain suspended in the air for so long a time. The eruption from Krakatoa, which immensely exceeded in violence any convulsion of the kind known to man, may, however, easily be conceived to have been capable of producing effects far transcending those which could be imagined in connection with any ordinary or with any other extraordinary known eruption. Mr. W. J. Stillman has witnessed explosions of the submarine volcano of Santorin that threw masses of rock weighing many tons to a distance of from half a mile to a mile, and clouds of dust to an elevation of from six thousand to ten thousand feet. Such effects, magnified to correspond with the grander scale of the Krakatoa eruption, might furnish the conditions required. Respecting the second difficulty, Mr. W. H. Preece and Dr. William Crookes have shown that finely divided particles of dust having an electrical charge of the same sign as that of the earth, may be kept suspended in the air for an indefinite time by electrical repulsion. Prof. S. P. Langley has described an ocean of dust of this kind which he observed in 1881 from near the summit of Mount Whitney, occupying a stratum of the atmosphere some six or seven thousand feet above the level of the sea, from which light was reflected red. A similar formation has been seen from the Peak of Teneriffe, constituting apparently a permanent constituent of the atmosphere.

Positive evidence is at hand of the presence during the prevalence of red sunsets of a dust of this kind in the atmosphere of Europe. The sediment derived from a snow that fell at Madrid, Spain, on the 7th of December, when examined, was found to contain, besides the ordinary atmospheric dust of the city, particles of volcanic hypersthene, magnetic iron, and volcanic glass. A rain that fell at Wageningen, Holland, on the 13th of December, left very obvious sediments, which, when analyzed by Messrs. Beyerinck and Van Dam, of the Agricultural Laboratory at that place, were found to correspond very closely with ashes brought from Batavia, Java, which were known to have come from Krakatoa; similar sediments were found at Worcester, England, and Storlvdal, Norway, on Nov. 17th, and at Gainsborough and York, England, Dec. 12th.

According to Capt. Sir C. Fleming Stenhouse, who was there at the time, the eruption of Graham's island, in the Mediterranean, in 1831, was followed by a series of red sunsets at Malta. White, in his "Natural History of Selborne," records the prevalence in 1783, from June 23d to July 20th, of a peculiar haze, or smoky fog, during which "the sun at noon looked as black as a clouded moon, and shed a rust-colored, ferruginous light on the ground and floors of rooms, but was particularly lurid and blood-colored at rising and setting." All this while, "Calabria and part of the isle of Sicily were torn and convulsed with earthquakes; and about that juncture a volcano sprang out of the sea on


AVERAGE ANNUAL RAINFALL
Scale of Shades
0 to 10 in.
10 " 20 "
20 " 30 "
30 " 40 "
40 " 50 "
50 " 60 "
60 " 70 "
70 " 80 "
Over 80 "
Longitude West from Greenwich
Long. West from Wash.
Long. East

the coast of Norway." The same phenomenon is alluded to in Cowper's "Task"; and it is ascribed in Mrs. Somerville's "Physical Geography" to the eruption of the volcano Skaptar, in Iceland, which occurred May 8th. The sun was observed of a blue color in England in April, 1821, after an eruption in the island of Bourbon. Dr. Budde, of Constantinople, was told in Algeria, in 1880, that the sun has a decidedly blue color when seen through the fine dust of the desert. Mr. Edward Whymper has described the green suns and ruddy sky effects through a cloud of volcanic dust from Cotopaxi in language precisely applicable to the phenomena under consideration.

Extremely brilliant colorations of the sky have been often mentioned in connection with a particular tropical belt. Col. Stuart Wortley, who had already remarked the unusual colors of the sunsets during a series of eruptions of Vesuvius, was greatly impressed with the gorgeous coloring of the tropical skies, which only occurs in certain latitudes and in well-defined belts, and suggests that it may be the result of a constant stream of volcanic matter thrown out by the great volcanoes in the mountain-ranges of South America and elsewhere, forming an almost permanent stratum. In connection with this supposition may be noticed the interesting coincidence, mentioned by Mr. Lockyer, that the volcanic ashes were in the present case, even before they reached India, taken by an upper current from the east, "in a straight line *via* the Seychelles, Cape Coast Castle, Trinidad, and Panama, to Honolulu—in fact, nearly back again to the straits of Sunda."

It is possible to combine the theory that ascribes the phenomena to aqueous vapor with that which attributes them to volcanic or meteoric dust, by supposing that the dust may act as a nucleus for the condensation of any vapor that may exist at its level, as ordinary city dust and smoke have been found to act as the nucleus for fogs.

Annual Rainfall in the United States.—Lieut. H. C. Dunwoody has compiled, under the direction of the Signal Service of the United States, a series of tables with accompanying charts, showing the geographical distribution of the average monthly and the average yearly rainfall at different points in the country, as determined from observations regularly taken at the Signal-Service stations and army posts, from the establishment of the Meteorological Bureau of the Signal Service, in 1870, to January, 1881. The accompanying map shows the general result of the observations by indicating the average annual precipitation throughout the United States during the ten years over which they have extended. The region of heaviest precipitation appears from it to be a narrow strip along the coast of Washington Territory, where alone more than 80 inches of rain fall during the year. The regions of the next heaviest rainfall, between 70 and 80 inches annually, are a narrow strip back of this one, a small section on the eastern coast of Florida, and another small district south of Cape Hatteras. The most extensive district of the next heaviest annual precipitation, from 60 to 70 inches, is around the northeastern borders of the Gulf of Mexico, in southeastern Louisiana, southern Mississippi and Alabama, and western Florida: while narrower regions of equal precipitation are found in western Washington and Oregon and northwestern California, eastern Florida, and eastern North and South Carolina. In the mass of the Southern States south of North Carolina and Kentucky and east of the Indian Territory and Texas, the mean annual rainfall is between 50 and 60 inches. This region is surrounded on the north and west by two belts, the more remote and more arid one of which is the wider, which together include the bulk of the States north of 36° 30′, and east of the Mississippi river, most of Iowa, Missouri, and Arkansas, and eastern Kansas, Indian Territory, and Texas, in which the amounts of annual precipitation are respectively from 40 to 50 inches and from 30 to 40 inches. West of the western edge of the latter zone is a comparatively narrow region in which the rainfall is between 20 and 30 inches annually; while west of this is a broad region, reaching over the Rocky mountains, and to the Columbia river in the Northwest, in which the mean annual precipitation is between 10 and 20 inches. The rainfall begins at the Columbia river again to increase, in narrow belts, toward the west, till it reaches its culmination in the region of greatest precipitation, already mentioned, on the Pacific coast. The most arid regions in the United States are in Nevada and Arizona, and a district in southeastern New Mexico, where the mean annual precipitation does not amount to ten inches.

METHODISTS. I. Methodist Episcopal Church.—The summary of the statistics of this Church, as they are given in the "Minutes of the Annual Conferences" for 1883, is as follows:

Number of annual conferences		99
Number of mission districts		14
Number of bishops		10
Number of presiding elders		477
Number of itinerant preachers		12,638
Number of local preachers		12,026
Number of members in full connection	1,601,072	
Number of members on probation	168,462	
Total of members and probationers		1,769,534
Number of baptisms during the year of children		55,876
Number of baptisms during the year of adults		61,869
Number of churches		18,741
Number of parsonages		6,607
Value of churches		$69,422,276
Value of parsonages		$9,815,809
Number of Sunday-schools		22,508
Number of officers and teachers in Sunday-schools		241,561
Number of Sunday-school scholars		1,691,065

COLLECTIONS AND BENEVOLENT CONTRIBUTIONS.

For ministerial support	$7,338,302
For incidental expenses of churches and Sunday-schools	2,028,195
For general missionary work	765,107
For Board of Church Extension	120,492
For Tract Society	15,380
For Sunday-School Union	16,283
For Board of Education	64,900
For Freedmen's Aid Society	66,444
For American Bible Society	27,260

The number of members in full connection was 28,895 greater, and the number of "probationers" was 7,382 less, than in 1882.

The agents of the Eastern Book Concern (New York city) reported to the Book Committee that the establishment, at the end of 1883, possessed a capital, clear of all obligations, of $1,202,593, and that the profits for the year had been $77,169. The agents of the Western Book Concern (at Cincinnati) returned a net capital of $412,283, the gain during the year having been $45,775.

The General Committee of Church Extension met in the city of New York, November 15th. The treasurer of the board reported that the sum of $333,879 had been available for use during the year, and the disbursements had been $229,284. The receipts for the year showed an increase of $13,217 on the general account, and of $25,504 on account of the loan fund. The board had aided, by loan or gift, or both, 442 churches, and had applications on file, which were granted on conditions, from 240 churches, and other applications from 29 churches. If all these applications were granted, there would still be a balance in the treasury of $914. On the special appeal for means to aid in the erection of 400 churches on the frontiers, 185 churches had been provided for. The committee decided to ask the churches for contributions during 1884 of $159,550.

The receipts of the Freedmen's Aid Society for the year 1883 were $118,153, or $18,761 more than the receipts of the previous year. The pupils taught in the schools of the society are enumerated and classified as follow: Biblical students, 304; medical, 51; collegiate, 145; academic, 410; normal, 1,387; intermediate, 767; primary, 478—total, 3,537. The schools include seven chartered colleges, three of which have theological departments, one biblical institute, one medical college, and fourteen seminaries, academies, and normal schools not chartered. In accordance with the action of the General Conference of 1880, the society is aiding in the establishment of schools for white pupils in the South. A college has been founded in Little Rock, Ark., another is to be opened at Chattanooga, Tenn., and several academies have been aided. During sixteen years, 80,000 pupils have been instructed in the schools of the society, 950,000 children have been taught by its teachers and its pupils who have become teachers, and $450,000 have been expended by it in school property.

The General Missionary Committee of the Methodist Episcopal Church met in New York city, November 7th. The treasurer of the Missionary Society reported that its receipts for the year had been $751,469, and its expenditures $794,506. The indebtedness of the society had been reduced from $102,579, in 1882, to $88,198. Appropriations were made for missions during the ensuing year as follow:

1. *Foreign Missions:*	
Africa (Liberia)	$4,000
South America (Buenos Ayres, Montevideo, etc.)	22,781
China	81,990
Germany and Switzerland	24,000
Denmark	10,000
Norway	14,345
Sweden	22,082
India	66,820
Bulgaria and Turkey	15,482
Italy	39,750
Mexico	34,000
Japan	35,648
Total foreign missions	$370,898
2. *Missions in the United States and Territories to be administered as Foreign Missions* (including missions in Arizona, the Black Hills, Dakota, the Indian Territory, Montana, Utah, and West Nebraska)	$68,490
3. *Domestic Missions:*	
Welsh and Scandinavian	$25,500
German	43,100
French	12,500
American Indian	6,700
English-speaking	172,000
Total appropriations for foreign and American missions	$700,188

II. American Wesleyan Connection.—The General Conference of the American Wesleyan Connection met at Syracuse, N. Y., October 18th. The book agent represented the aggregate amount of the assets of the Publishing House, including the building in Syracuse, as $45,975. The circulation of the literature of the Connection had increased with great regularity during the preceding four years. The educational institutions had quadrupled. The work of domestic missions had been prosecuted with so much success that two additional conferences had been formed as results of it. Resolutions were adopted declaring the Connection to be historically and traditionally, by its standard authors and doctrinal precepts, committed to the work and experience of holiness—"including in holiness both justification and regeneration, and, subsequent to their reception, entire sanctification"; rejoicing over the progress that had been made in the doctrine, and enjoining upon the ministers faithfully to present it before their people. A rule was adopted forbidding the division of any annual conference, on the ground of color or nationality, in any case where all the parties speak the same language. An effort was made for the enactment of a rule forbidding the use of instrumental music in worship, but it failed, and the Conference decided to retain the present disciplinary provisions on the subject. The previous General Conference had refused to receive a delegate who had been appointed in behalf of the General Conference of the Methodist Episcopal Church as its fraternal representative, on the ground that he was a member of a secret order, a fact that constitutes disqualification for membership in the Wesleyan Connection. A similar question was presented on the present occasion, when the General Conference refused to recognize a delegate from the local annual conference of the Methodist Episcopal Church who declared himself a member of two secret societies. A

statement was adopted by the Conference, setting forth that in view of the denominational position on the subject of secret societies, it was not consistent to receive fraternal greetings from an adhering member of an organization of that character.

III. The Methodist Church (Canada).—The following are summaries of the statistics and condition of the several Methodist bodies in Canada which, in September, 1883, consummated a union under the designation of "The Methodist Church":

1. *The Methodist Church of Canada.*—This Church was constituted in its present form in 1874, by a union between the Wesleyan Methodist Church in Canada, the Wesleyan Methodist Church in Eastern British America, and the Methodist New Connection Church in Canada. Its statistics are as follow: Number of ministers and probationers for the ministry, 1,192; of members, 125,420; of adherents, including members, 625,000; of churches, 2,046; of parsonages, 607; value of church property, $6,022,227; number of Sunday-schools, 1,947, with 16,980 teachers and 130,629 scholars. It has missions among the Indian tribes of Ontario and the French of Quebec, and in British Columbia and Japan, the statistics of which are as follow: Number of domestic or home missions, 332, with 344 missionaries and 30,149 members; of Indian missions, 43, with 27 missionaries, 12 native assistants, 30 teachers, 11 interpreters, and 3,377 members; of French missions, 9, with 9 missionaries, 2 teachers, and 360 members; of foreign missions or stations, 6, with 14 missionaries (seven of whom are native Japanese) and 721 members. Total, 390 missions, with 394 missionaries, 56 other paid agents, and 34,607 members. The income of the society for 1881–'82 was $159,243. The educational institutions of the Church are Victoria College, Cobourg, Ont.; Mount Allison College, Sackville, N. B., and a seminary for young men and young women at Sackville, N. B.; besides four institutions under the patronage of annual conferences, and one hundred common schools in Newfoundland. The Publishing House at Toronto has assets valued at $207,531; eight periodicals are published at this house, and one other at Halifax, N. S.

2. *Methodist Episcopal Church in Canada.*—Organized in 1834. It had, previous to the union just consummated, one bishop and three annual conferences. Number of ministers, 275; of local preachers, 270; of churches, 536; of members, 28,070; of Sunday-school scholars, 25,119; value of church property, $1,372,510; amount of income for home missions, $12,350. The educational institutions are Albert College, Belleville, Ont., and seminaries for young women at Belleville and St. Thomas. A weekly paper is published at Hamilton.

3. *Primitive Methodist Church in Canada.*—Founded in 1829. Number of ministers, 99; of members, 8,223; of lay preachers, 246; of class leaders, 330; of churches, 237; of parsonages, 48; of Sunday-schools, 169, with 1,253 teachers and 9,343 scholars; value of church property, $383,853. A weekly paper is issued from the Book-Room in Toronto.

4. *Bible Christian Church in Canada.*—Founded in 1831. The Conference includes ten districts, two of which are in the United States. Number of itinerant ministers, 81; of members, 7,531; of churches, 188; of Sunday-school scholars, 9,378. A weekly paper and a semi-weekly Sunday-school paper are published under the auspices of the denomination.

Union of the Methodist Churches in Canada.—An account was given in the "Annual Cyclopædia" for 1882 of the negotiations between the several Methodist churches in Canada—viz., the Methodist Church of Canada, the Methodist Episcopal Church of Canada, the Primitive Methodist Church in Canada, and the Bible Christian Church in Canada—and the proceedings of their Conferences and General Conferences, with reference to the union of the whole number into a single body, the record being brought down to the close of the year. The provisional basis of union agreed upon by the Conferences demanded the submission of the plan to the Annual Conferences and quarterly meetings for approval. The basis was readily ratified by the Bible Christians and the Primitive Methodists, but met with some opposition in the Methodist Church of Canada, where, however, it was finally approved in the quarterly meetings and in all the Annual Conferences except one, and was formally ratified at an adjourned meeting of the General Conference held at Belleville, August 29th. The chief objections raised in this body to the plan of union related to the question of the general superintendency and to the anticipation that legal difficulties might arise concerning rights in church property. This was most liable to take place in the case of the property of the Bible Christian Church, the parent church of that body in England having refused to give its consent to the Canadian branch going into the Union. The Canada Conference of the Bible Christians decided, however, to enter the Union notwithstanding this refusal.

The first General Conference of the united body met at Belleville, Ont., September 5th. It was composed of 161 representatives of the Methodist Church, 30 of the Methodist Episcopal Church, 8 of the Primitive Methodist Church, and 9 of the Bible Christian Churches. The Rev. J. A. Williams, D.D., was chosen president of the provisional organization. The president of the Bible Christian Conference explained the position of that church with reference to the movement for union by saying that the Conference had at first taken favorable action on the subject, with the belief that the parent body in England would approve the step. A delegation was accordingly sent to England to obtain the desired permission. The refusal of the Conference to give it was an occasion of surprise, and placed the Canada Conference in

an embarrassing position. It, however, would not imperil the union by delaying another year, as the English body had requested; and it was not probable that the English Conference would make any legal demands against the church property. This property was valued at nearly $400,000. The subject was referred by the General Conference to a committee, which reported, on the legal aspects of the union, that no doubt existed respecting the status of any body except the Bible Christian Church, and that even in the case of this body, if the English church refused to sanction the action of the Canada Conference, all difficulties might be adjusted by means of an act of Parliament. At a later stage of the proceedings, an address was adopted to be presented to the Bible Christian Conference in England, setting forth the imperative necessities which existed for the union of the Methodist churches in Canada, and asking its sanction to the movement. The Conference then proceeded to the adjustment of the details of the organization of the church and of discipline. The General Conference was constituted to consist of ministerial and lay delegates in equal numbers, upon a ratio of representation of one ministerial delegate to every ten ministers in the Annual Conferences. It shall meet on the first Wednesday in September, 1886, and every four years thereafter. It is prohibited from changing the articles of religion, and from introducing new standards of doctrine contrary to those already existing; from destroying the plan of the itinerant system; from making changes in the general rules of the society except by a "constitutional vote"; and from making any change in the basis of union affecting constitutional questions or the rights and privileges of the ministry and laity, except by a three-fourth majority of the General Conference. Ten Annual Conferences were constituted, viz.: the Manitoba, Nova Scotia, New Brunswick and Prince Edward island, Newfoundland, London, Guelph, Bay of Quinte, Niagara, Toronto, and Montreal Conferences. They shall be composed of ministers and laymen in equal numbers, the lay delegates having the right to be present at all ordinary sessions of the Conference, and to speak and vote on all questions except in the cases of the examination of ministerial character and qualification, the reception and ordination of ministers in full connection, and the granting of the supernumerary relation, on which ministers only will vote. Two general superintendents were constituted, to hold office for the term of eight years, one being elected every four years. It is their function to preside over all the sessions of the General Conference and all standing committees of the same; to preside over the Annual Conferences in alternation with the presidents of the same; and to conduct the ordination services in association with the president of the Annual Conference. The general superintendent was made responsible to the General Conference for all his official acts, and was given a general oversight of the church and all its institutions, but was prohibited from interfering with the functions of ministers and other officers of the church in their prescribed duties. The elections for general superintendent resulted in the choice of the Rev. Samuel D. Rice, D. D., for the term of eight years, and the Rev. Albert Carman, D. D., bishop of the Methodist Episcopal Church of Canada, for the term of four years. It was decided that the church should be known by the name of "The Methodist Church." The office of district superintendent was constituted for the supervision of the districts into which the Annual Conferences are divided for convenience of administration. The district superintendent is to be chosen by ballot in the Annual Conferences; his duties are to preside in district meetings and in all district committees, to oversee the temporal and spiritual interests of the Church, "and, with the ministers and preachers, to administer and enforce the discipline on his district, being responsible therefor to his Annual Conference." The General Conference decided "that in view of the division and multiplication of Annual Conferences, and the consequent restricted territory within the bounds of each Annual Conference, we deem it important that provision be made for frequent interchange of ministers between the various conferences as a means of promoting connectional feeling throughout the entire church, and maintaining the itinerancy in its integrity." Provisions were accordingly made for the regulation of transfers. The adjustment of the financial interests of the connection and questions concerning church property received much attention. Provisions were made for participation in the celebration of the centenary of organized Methodism in America, appointed for 1884.

IV. Wesleyan Methodist Church (British).—The following is a "general view" of the statistics of the British and affiliated Conferences of this Church, as tabulated in the "Minutes of Conference" for 1883:

	Members.	On trial.	Ministers.	On trial.	Supernumerary.
I. In Great Britain..	407,085	34,399	1,545	91	284
II. In Ireland and Irish missions..	24,384	668	131	16	42
III. In foreign missions	70,747*	5,299	285	98	9
IV. South African Conference	20,739	2,098	93	74	10
V. French Conference	1,856	168	28	..	3
Totals	524,811	40,627	2,132	279	348

Wesleyan Missions.—The total income of the Wesleyan Missionary Society for 1882 was £169,361, of which £135,874 were classed as

* The apparent decrease from the returns of previous years is accounted for by the formation of the South African Conference, the members of which are represented in the next line. The mission districts still in connection with the British Conference show an increase of 457.

ordinary receipts, while the rest came in the form of special funds. Furthermore, £126,000 had been raised on the mission stations toward their own support. The expenditures were £169,361. The society had paid off a heavy debt which rested upon it, and was now free. The following is the "General Summary" of the missions under the immediate direction of the Wesleyan Missionary Committee and British Conference in Europe, India, China, South and West Africa, and the West Indies:

Central or principal stations, called circuits	462
Chapels and other preaching-places, in connection with the above-mentioned central or principal stations, as far as ascertained	2,517
Missionaries and assistant missionaries, including supernumeraries	526
Other paid agents, as catechists, interpreters, day-school teachers, etc	2,059
Unpaid agents, as local preachers, Sabbath-school teachers, etc	8,566
Full and accredited church-members	91,276
On trial for church-membership	14,489
Scholars, deducting those who attend both the day and Sabbath schools	108,801
Printing establishments	8

A very rapid and remarkable advance of Christianity was represented to be taking place in India and Ceylon. The missions in South Africa had been constituted into the South African Conference, to be under the partial support of the society, while its own missionary efforts proper in that country would be applied to the extension of missions into the Transvaal and Swaziland, with the design of making these efforts the first steps of an advance into Central Africa.

Wesleyan Conference.—The Wesleyan Conference met in its one hundred and fortieth session in Hull, July 24th. The Rev. Thomas McCullough was chosen president. The numerical returns were presented and showed that in the circuits under the immediate jurisdiction of the Conference the number of members was 407,085—a larger number than was ever before reported in the history of the connection—against 393,754 in 1882. The number of new members received was 60,606. The number of persons on trial for church-membership was given at 34,399, or 6,254 less than were returned in 1882. The committee on the thanksgiving fund, while it had not yet closed its accounts, and could only present an *ad interim* balance-sheet, reported that the total amount that had been paid to the General Treasurers up to July, 1883, was £291,721. The Book Committee returned an amount of sales not quite equal to those of the previous year, but "very much above the average," and sufficient to allow all of the customary grants to be made from the profits. Fifty-four new books, sixty-two new editions, and seventy-eight new tracts had been published during the year; and the total issues of the Book-Room had been 1,707,000 copies of publications, and 6,156,263 tracts. The expenditure for home missions had been £34,946, while the income of the fund had been £500 less. Seven lay missionaries were maintained, who had held more than a thousand services, and returned additions of 400 members to the church. The income of the chapel fund had been £9,369; grants had been made of £3,507, and £633 had been advanced in loans to twenty-five chapels. The sum of £367,238 had been expended during the year on new erections, and in the reduction of debts. Among the new erections were 118 chapels. The report of the Metropolitan Chapel Building fund showed that since its institution, about twenty-one years before, sixty-four chapels, each affording sitting accommodation for at least 1,000 persons, and one hundred smaller chapels, had been erected in the Metropolitan district. The year's income of the fund had been £11,429, while the grants and loans paid out on its account amounted to £6,500. The fund for the extension of Methodism in Scotland returned a capital sum of £9,885. The Committee on Foreign Missions reported that the expenditure of the year had been practically brought within the income, but that the society was in great need of more ample resources.

The Temperance Committee reported that the strength of the temperance societies was increasing very rapidly. The whole number of temperance societies within the connection was now 321, with 28,414 enrolled members, showing an increase during the year of 144 societies and 17,502 members. Besides, there were returned 2,644 Bands of Hope, with 46,549 members. A petition in favor of the Sunday-closing of all the places where intoxicating liquors are sold in England had been prepared under the direction of the committee and presented to Parliament, to which 596,877 signatures were attached. The Committee on Sunday-schools reported the whole number of Sunday-schools in the connection in Great Britain to be 6,584, with 124,390 officers and teachers, and 841,591 scholars; and that the Sunday-schools were maintained at an annual cost of £71,864. The number of schools connected with the Sunday-School Union was 2,901; and the receipts of that association had been £19,259.

A novel feature in the history of the Conference was a visitation which it received from a deputation of the clergy of the Established Church in Hull. The deputation presented an address, saying that they regarded with gratitude the noble spiritual work which the Wesleyans had been able to accomplish at home and abroad, and that "we readily extend to you and all who uphold the fundamental doctrines of the kingdom of God the right hand of fellowship." A report was made of the organization of the South African Conference, with an account of its first session and its address to the Wesleyan Conference. The new Conference extends over a territory reaching from the Cape of Good Hope to the Vaal river, and includes within the sphere of its operations missions among the Hottentot, Tembu, Baralong, Pondo, and Zulu tribes. The churches

under its jurisdiction were already contributing £45,000 of the £60,000 which it cost to maintain their work during each year. A scheme was adopted for the organization of the connection in the West Indies into two conferences, to be associated in a General Conference which shall meet every three years. In other points the organization of these conferences will be similar to that of the South African Conference. The plan has yet to receive the assent of the West Indian churches. Steps were resolved upon for securing amendments to the marriage laws of England, of such a character as shall put Wesleyan and other ministers on an equality of privilege in solemnizing marriages with the clergy of the Church of England. The plan of amendment approved by the Conference embraces principles similar to those of the Scotch law for registration. It proposes that the present requirement of notice at the registrar's office, and of license, shall be retained; but that the marriage may then be celebrated, on production of the license, by any minister duly authorized for that purpose, in any duly registered place of worship, without the presence of the registrar, which is now required in the case of marriage by dissenters, after which a certificate shall be filed in the registrar's office; and it further stipulates that the total fees for such marriages charged at the registrar's office shall not be greater than the fees charged for an ordinary marriage according to the rites of the Church of England. A report was approved in favor of holding a second Œcumenical Conference of Methodists in 1887.

V. Primitive Methodist Connection.—The following is a summary of the statistics of this Church as they were reported to the Conference in June: Number of members, 196,480; of traveling preachers, 1,147; of local preachers, 15,982; of leaders, 10,994; of connectional chapels, 4,437; of other preaching-places, 1,812; value of trust property, £2,812,263; indebtedness on trust property, £1,087,015; number of Sunday-schools, 4,184, with 61,215 teachers and 400,597 scholars. Income of the Sunday-schools, £60,000. The income of the superannuated preachers', widows', and orphans' fund had been £6,639. The committee of the fund returned 267 annuitants upon its lists. The income of the chapel fund had been £385. Twenty-four chapels had been assisted by grants. Including what the chapels themselves had raised, £5,340 had been spent under the auspices of the fund in the relief of their estates. The Connectional Insurance Company returned a reserve fund of £9,860, carefully invested, with 4,711 outstanding policies. A statement was made in the Conference that the total amount of contributions within the Connection had been during the year: For chapel debts and current chapel expenses, £269,508; for educational purposes, £56,574; for the support of the ministry, £115,200; for various connectional funds, £9,378; for literature sold by the Book-Room, £26,644; for missionary purposes, £15,763; making in all nearly half a million pounds sterling, or an average of £2 11*s.* 7*d.* per member.

The anniversary of the Primitive Methodist Missionary Society was held May 1st. The income of the society for the year was returned at £36,865, derived as follows: From contributions of home stations, £17,222; contributed by foreign stations, £2,883; raised in the missions for schools, churches, and the maintenance of missionaries, £16,760. The whole amount showed an increase of £1,640 over the receipts of the previous year. The work of the society was extended to 238 stations; of which 56 were classed as "home," 178 as "colonial," and 4 as "foreign" stations, and was conducted by 79 "home," 217 "foreign," and 6 "colonial" missionaries and ministers, or 302 missionaries in all.

The sixty-fourth Primitive Methodist Conference met at South Shields, June 13th. The Rev. W. Cutts was chosen president. The business of the Conference had reference chiefly to the condition and interest of the various institutions and benevolent enterprises of the Connection. A Temperance Society was established, with a Band of Hope Union, the pledge including abstinence from tobacco and snuff.

VI. United Methodist Free Churches.—The summaries of the statistical returns of this body as reported to the Conference in August are as follow: Number of itinerant preachers, 391; of supernumeraries, 40; of local preachers, 3,417; of leaders, 4,128; of members, 75,577; of persons on trial for membership, 8,575; of chapels, 1,357; of preaching-rooms, 203; of Sunday-schools, 1,352, with 26,851 teachers and 195,681 scholars. The net increase of members was 1,435, of which 204 had accrued from the foreign stations. The trustees of the chapel loan fund returned its capital at £10,032. The capital of the superannuation and beneficent fund was returned at £28,590.

The annual assembly of the United Methodist Free Churches met at Rochdale, August 1st. Mr. H. T. Mawson presided. The present meeting of the assembly was made the occasion of the commemorative celebration of the twenty-fifth anniversay of the union, in 1857, of the Wesleyan Methodist Association and the Wesleyan Reformers to constitute the connection in its present form. The celebration took effective shape in the collection of subscriptions to a commemoration fund, which were reported, at the close of the Conference, to amount to £14,031. The Conference decided that the fund should be appropriated as follows: To the mission fund, four sixteenths; to chapel funds, three sixteenths; to the London chapel extension fund, two sixteenths; to the Theological Institute, one sixteenth; to Asheville College, one sixteenth; unappropriated for the present, one sixteenth. The assembly recommended that one or two suitable men in the ministry be set apart for evangelistic labors, to hold services from circuit to circuit, in co-

operation with circuit ministers and officers; their work to be arranged under the direction of the connectional committee, who should appoint a secretary for the special supervision of it. The evangelists are to be assured their salaries. Resolutions were passed in favor of the repeal of the law prohibiting marriage with a deceased wife's sister.

VII. Methodist New Connection.—The following is a summary of the statistics of this body as they were reported to the Conference in June: Number of chapels, 514; of societies, 472; of circuit preachers, 188; of local preachers, 1,271; of members, 29,299; of probationers, 4,048; of members of Sunday-schools, 92,703. The sum of £17,640 had been raised and expended on connectional property during the year. The chapel loan fund had a capital of £4,500, with the additional sum of £700 nearly subscribed. The Book-Room had done a business of £8,500, and returned £279 of nèt profits. The income of the mission fund had been £6,404. The committee had expended, on home missions, £3,186; on the missions in China, £2,446; on those in Ireland, £662; and on those in Australia, £7,260. The income of the paternal or children's fund had been £2,966, and the sum of £2,334 had been paid to ministers for their children. The auxiliary fund had a capital of £2,049. The investments on account of the college were valued at £8,700. The beneficent fund returned an income of £3,257, and a capital of £22,365. The income of the contingent fund was £1,156.

The eighty-sixth Conference of the Methodist New Connection met in Sheffield, June 11th. The Rev. Thomas Rider was chosen president. The condition and prospect of the missions of the Connection received attention. An extension of the missions in Australia, as far as practicable, through the churches there, was recommended. Notice was taken of the existence of betting and gambling among Sunday-school scholars, and the attention of the conductors of Sunday-schools was directed to the importance of admonishing those under their charge of the evil of such practices. A memorial to the Government and a petition to the House of Commons in favor of closing on Sundays public-houses and clubs having licenses to sell liquor, were authorized.

VIII. Wesleyan Reform Union.—The statistics of the churches which are associated under this designation were reported at the delegate meeting in August as follow: Number of chapels and preaching-places, 216; of preachers, 457; of preachers on trial, 94; of ministers, 17; of leaders, 480; of members, 7,950; of persons on trial for membership, 713; number of Sunday-schools, 187, with 3,140 teachers and 19,715 scholars.

The annual delegate meeting was held in Sheffield, beginning August 4th. The proceedings consisted chiefly in the examination of chapel and financial affairs, and the review of the mission (home) and evangelistic work.

MEXICO, a republic of North America. Area, 761,640 square miles; population, 10,025,649. (For details relating to area, territorial division, population, etc., see "Annual Cyclopædia" for 1882.)

Government.—The President of the Republic is Gen. Manual Gonzalez, whose term of office will expire on Dec. 1, 1884. His Cabinet is composed of the following ministers: Secretary of Foreign Affairs, vacant; Interior, Señor C. Diez Gutierrez; Justice and Instruction, Señor J. Baranda; Finance, Señor F. Fuentes y Muñez; Public Works, Gen. C. Pacheco; War, Gen. E. Naranjo; Supreme Court, President (and Vice-President of the Republic), Señor G. Valle, and the magistrates are: E. Avila, J. M. Vasquez Palacios, C. Gonzalez Uroña, Melesio Alcántara, M. Auza, M. Contreras, M. Saavedra, J. de M. Vasquez, F. Vaca, M. Villalebos; with J. Soto, Attorney-General, and E. Ruiz, Procurator-General.

The Governors of the States are elected for a term of four years. The Governor of the Territory of Lower California is appointed by the Federal Government.

The Minister Plenipotentiary to the United States is Señor M. Romero; the Minister to Mexico is Hon. Philip H. Morgan. The United States Consul-General in the city of Mexico is David H. Strother.

Army and Navy.—The army in 1883 was composed as follows:

	Officers.	Men.
Foot (nineteen battalions)	722	10,500
Horse (nine regiments)	518	4,176
Artillery (six brigades, each of five batteries)	180	1,017
Coast-guards	22	71
Rural guards	150	1,692
Invalids	19	280
Military colonies	130	1,158
Total	1,741	18,894

The navy consists of four gunboats.

Condition of the Country.—President Gonzalez, in his annual message to Congress, April 1, 1883, expressed himself on the general condition of the country as follows:

The country at large is in a prosperous condition, and the financial crises which at times have hampered business will soon leave no trace behind them. Improvements in the interior have been notable, of which everybody may easily convince himself. The Central Railroad Company has built over 1,500 kilometres of railway, the National line over 1,100, and the Huntington Company 117. There have been built in the republic during the year 4,800 kilometres. We have been compelled to modify the contract made with English bondholders, and negotiations to that end are proceeding favorably. Negotiations abroad to raise a $20,000,000 loan will, I trust, soon be crowned with success. The revenue of the Government during the last fiscal year has reached $33,500,000, showing an excess of $1,500,000 over the previous year.

The revision of the tariff is nearly accomplished. The new postal laws will soon be in force, and our communications with the United States by land will be improved. Public instruction is in a flourishing state. Nothing is left undone to attract a desirable class of immigrants. The army is in a state of efficiency, and quiet reigns throughout the republic.

Relations with the United States.—The President of the United States, in his annual message to Congress of Dec. 4, 1883, expressed himself about our relations with Mexico to the following effect:

At no time in our national history has there been more manifest need of close and lasting relations with a neighboring state than now exists with respect to Mexico. The rapid influx of our capital and enterprise into that country shows, by what has already been accomplished, the vast reciprocal advantages which must attend the progress of its internal development. The treaty of commerce and navigation of 1848 has been terminated by the Mexican Government, and, in the absence of conventional engagements, the rights of our citizens in Mexico now depend upon the domestic statutes of that republic.

There have been instances of harsh enforcement of the laws against our vessels and citizens in Mexico, and of denial of the diplomatic resort for their protection. The initial step toward a better understanding has been taken in the negotiation by the commission authorized by Congress of a treaty which is still before the Senate awaiting its approval.

The provisions for the reciprocal crossing of the frontier by the troops in pursuit of hostile Indians have been prolonged for another year. The operations of the forces of both Governments against these savages have been successful, and several of their most dangerous bands have been captured or dispersed by the skill and valor of the United States and Mexican soldiers fighting in a common cause.

The convention for the resurvey of the boundary from the Rio Grande to the Pacific having been ratified and exchanged, the preliminary reconnaissance therein stipulated has been effected.

Our geographical proximity to Central America and our political and commercial relations with the states of that country justify, in my judgment, such a material increase of our consular corps as will place at each capital a consul-general.

Rejection of the Reciprocity Treaty.—The Mexican treaty was rejected by the United States Senate on January 18th, the vote showing that the majority in its favor lacked one vote of the two thirds required for ratification. The sugar and tobacco interests are arrayed solidly against it, and it was also opposed by some Senators on the ground that reciprocity treaties are of doubtful constitutionality, inasmuch as they tend to interfere with the free exercise by the House of its right to initiate bills raising the revenue; but the period allowed for its ratification has been extended by the President, the Secretary of State, and the Mexican minister to May 20, 1884, and thus there is still a chance for its adoption.

Finances.—The national and State finances, as shown by the budget estimates for the current fiscal year, exhibit the following details:

REVENUE.	Budget of 1883–'84.
Custom-House	$19,000,000
Custom-House at Mexico and town dues	2,000,000
Stamp dues	4,500,000
Direct taxes	900,000
Mint	700,000
Instruction fund	60,000
Post-Office and telegraphs	700,000
Lottery	800,000
New tobacco and stamp taxes	2,000,000
Sundry incomes	1,200,000
Income of individual States	7,500,000
Grand total	$39,360,000

EXPENDITURE.	
The Legislature	$1,015,652
The Executive	48,832
Supreme Court	406,652
Foreign affairs	867,580
Interior	3,285,578
Justice and Public Instruction	1,243,510
Public Works	11,127,600
Finance	4,966,262
Army and Navy	8,252,352
Expenditure in the different States	7,500,000
Grand total	$38,213,998

National Indebtedness.—The foreign debt embraces the following items: English loan of Oct. 14, 1850, $89,252,360; agreement of indebtedness to English bondholders of Dec. 4, 1851, $5,900,025; ditto to Spanish, of Dec. 6, 1853, $1,231,775; ditto, ditto, of Nov. 12, 1853, $5,553,287; debt to the United States of July 4, 1868, $2,475,128; together, $104,412,570; internal debt, $40,241,215; grand total, $144,653,785.

The outcome of the recent negotiations between the representative of the Mexican Government and the committee of the council for foreign bondholders has not, it appears, been such as to improve Mexico's standing in the British market. The refusal of the Mexican Government to comply with the demands of the English bondholders for an issue of £20,000,000 of 3 per cent. bonds in addition to the debt of $80,000,000, was made public through a cable dispatch.

In May, 1883, a congressional committee reported a bill authorizing the Executive to liquidate the national debt, excepting only the debts of the empire, those of the Miramon and Zuluaga Governments, and claims already rejected. Claims admitted by the Mexican and American commission and those for railroad subsidies are not affected by the proposed settlement. The Executive was authorized to issue bonds bearing 3 per cent. interest, to be receivable for Government lands, adjudicated property, and letters patent, the debt to remain national. The details of the settlement, involving the amount recognized, were left entirely to the Executive. Mexico acknowledges an indebtedness, principal and interest, of £16,000,000. A month previous to the introduction of the bill referred to above, a private agent of Mexico, without full authority, had made a preliminary agreement with the bondholders, by which Mexico was to replace the outstanding bonds with a new issue for £20,000,000 at 3 per cent. interest. The additional £4,000,000 were for the purpose of paying the first year's interest and reimbursing the expenses of the bondholders' committee. Subsequently Congress, by passing the bill above alluded to, authorized the President to settle the debt on the given basis, and the agreement was signed in London on May 12th. When the text of the agreement arrived from London, the President refused to approve the additional £4,000,000. Negotiations for a new agreement were then begun, but failed. Toward the end of October the President instructed Cárlos Rivas, the Mexican agent in

London, to offer £18,000,000 in bonds, instead of £20,000,000. The offer was refused, and Rivas was instructed to suspend negotiations and return to Mexico. The Government declares that it is anxious to settle, but considers the demand of the bondholders exorbitant. Even before negotiations were broken off, Mexican securities had become very much depressed in London. The Mexican Secretary of the Treasury stated, on Nov. 24, 1883, that the debt which has been the subject of negotiation in London does not include the convention debt, which consists of the recognized bonded claims of British subjects.

Nickel Coin.—Under date of Nov. 29, 1883, it was reported from the city of Mexico that considerable confusion had been caused in retail commercial circles there by the large amount of nickel coin in circulation. Congress was discussing a law to regulate the nickel coinage and determine the extent to which it shall be made a legal tender. On November 28th a protest against the abuses occasioned by the nickel had appeared, and was signed by many persons. The proposed law only authorizes the coinage of 4,000,000 nickels among 10,000,000 people. The main objection seems to be, that the introduction of the new currency has been made awkwardly, and many say, unfairly. Instead of allowing the people to become gradually accustomed to the new coins, all at once the country has been flooded with nickel.

The Postal Service.—The business of the Mexican post-office has greatly increased since the reduction of domestic postage from twenty cents to ten cents. Number of post-offices, 836; 53 of which are chief offices, 267 express offices, and 516 agencies. Number of letters dispatched in 1881–'82: In the interior, 3,831,829, without counting 79,627 registered ones; sent abroad, 411,826, besides 3,596 registered; postal-cards, 7,081; together, 4,335,459 letters; newspapers, 2,943,880; samples, 8,053; total, 7,287,392 items of mail matter, against 6,462,807 in 1880–'81. Amount of postage collected, $723,079, against $641,067 in 1880–'81.

Telegraphs.—There is great activity in telegraph-construction. Nearly 18,000 miles of wire are in operation, and the telephone system is extensive and increasing rapidly. Length of wire of Government lines in July, 1883, 18,263 kilometres; of States, 1,484; private, 3,502; of railroads, 4,000; and cables, 875; together, 28,124 kilometres, equal to 17,718 miles. In 1881 there were only 17,061 kilometres; the increase in two years has therefore been 11,063 kilometres. Number of offices, 282; messages forwarded in 1880, 744,917; net earnings, $399,814.

There are in Mexico twenty-three telephone offices, with 1,600 instruments; the office in the city of Mexico has 700 subscribers.

Railroads.—The Mexican railway system in operation in the summer of 1883 was the following:

	Miles.
AMERICAN LINES.	
Mexico to Aguascalientes, with branches (Central)	345
El Paso to Durango (Central)	432
Tampico westward (Central)	62
Guaymas to Nogales (connected with Central)	265
Mexico to Morelia (National)	227
Laredo to Saltillo (National)	220
Lines not yet connected (National)	178
Altata to Culiacan (Sinaloa to Durango)	98
Eagle Pass to Durango (Huntington)	73
Total	1,840
ENGLISH LINE.	
Vera Cruz to Mexico (Mexican Railway)	358
MEXICAN LINES.	
Mexico to Cuantla and branches (Morelos)	183
Yucatan line	68
Hidalgo line	56
Several small lines	300
Tehuantepec (bought back from Americans)	28
Total	635
Grand total	2,833

Both the Central and National obtained their concessions in September, 1881, and began to work in the month following. The portion in operation of these two lines, taken together as given above, represents a value of $60,000,000. The railroad prize of the near future is said to be the trunk line south of the city of Mexico. The Boston syndicate, controlling the Mexican Central, hope to push southward from Mexico. The Mexican Southern, Grant and Gould's consolidation, is designed for a trunk line through the southern Mexican States.

Antiquities.—The pyramid of Cheops is said to be dwarfed by the one discovered in the midst of virgin forest in 1883, near Magdalena, Mexico. It is said to have a base of 1,350 feet, and to be 750 feet high. There is a winding roadway from the bottom, leading by an easy grade to the top, wide enough for carriages to pass over, said to be twenty-three miles long. The outer walls of the roadway are laid in solid masonry, huge blocks of granite in rubble-work, and the circles are as uniform and the grade as regular as they could be made by our best engineers. The wall is only occasionally exposed, being covered over with *débris* and earth, and in many places the *sahuaro* and other plants have grown up, giving the pyramid the appearance of a mountain.

At a recent meeting of the California Academy of Sciences, at San Francisco, Eusebio Molera read a paper on the Aztec calendar, or Mexican calendar-stone, from which an insight has been obtained of the extent of the astronomical knowledge of the Aztecs. The stone was unearthed in the city of Mexico on Sept. 17, 1790, and was placed in the wall at the base of one of the towers of the cathedral, where it remains to this day. The stone is eleven feet nine inches in diameter, and originally weighed twenty-four tons. The conjectures of antiquaries in relation to this object were reviewed by Mr. Molera, who thinks it was designed for one of the sacrificial stones on which captives were slain, their hearts being offered to the sun. He believed it was con-

structed under the second Montezuma, who, having done nothing to perpetuate his name, determined to construct a sacrificial stone as his predecessors had done. He wanted to make it larger than any of the others, and gave orders that it be two elbows larger than they were. The Indians began hauling the stone, which finally said it would not go any farther. There were 10,000 Indians pulling the stone, and the ropes broke, and the stone would not move. This the historians cite to show that supernatural phenomena were connected with the event. However, it appears that the stone was really brought to town, and it was so heavy that it broke the dike and fell down.

Wages.—Wages are steadily increasing in Mexico. In the capital, a common laborer receives $1.25 a day. Mechanics get from $1.75 to $2.25. Along the railroad lines the prices are about $1 a day for unskilled laborers, and $1.50 to $2 for mechanics. The laborers from the rural districts are coming in to the railroad districts in large numbers.

Gold and Silver Production.—Some of the gold and silver mines have been worked without intermission since the Spanish conquest. During colonial times, from 1537 to 1821, the silver-mines turned out $2,035,000,000, and the gold-mines $68,765,000. From the time when Mexico gained her independence to 1880, the silver product amounted to $900,000,000, and the gold product to $4,841,000. Grand total, 1537 to 1880, $3,008,606,000.

Tin Discoveries.—The first ton of tin coming from the Durango mountains of Mexico was landed in the United States in 1883. This tin discovery was made by Mr. H. Freeman, of Australia, who spent a year in Mexico in prospecting for tin, following therein the records left by the Spaniards.

The Mines of Sonora.—Sonora has not more than 125,000 inhabitants, and 75,000 of these are Indians. There are about 5,000 natives of the United States in the State, mostly speculators. Fabulous sums are said to have been taken out of her mines, and now and then a vase filled with gold nuggets left by the Spaniards. Such a discovery was lately reported in Ures, $80,000 in gold being found in an old earthen vessel a few feet underground. But, although there are many old abandoned mines that may be worked profitably, the principal industry is stock-raising and fruit-culture.

Resources of Michoacan.—Michoacan, brought into communication with the world at large by the opening of the Mexican National Railway to its capital, Morelia, is the Pennsylvania of Mexico. Here, in close juxtaposition, are found iron and coal. Pending their development, the State has other resources which now become of immediate value. In it is one edge of the great lumber-region of southern Mexico, the region whence in future must be drawn the domestic supply of lumber for the whole country; in it are extensive silver-workings, including the famous Coalcoman mines; in it copper, lead, sulphur, marble, and lithographic stone are found; in it wheat, Indian corn, barley, beans (a most important crop in Mexico), sugar-cane, cotton, and coffee are grown; and in Morelia, a trim little city of 38,000 inhabitants, weaving and various small manufactures are carried on. These products furnish a substantial basis for a brisk export trade, and promise a counterbalancing import trade from Europe and the United States. Even the Mexicans themselves at last seem to be inspired with some sort of confidence in the future of their country. Heretofore, with some few exceptions, they have maintained a position of observation, while the "Americanos" have been building railroads and pushing other enterprises. Apparently now they are convinced that these ventures will pay; for that very rich and very conservative institution, the Banco Mercantile, the old "Spanish Bank," the strongest in the country, has agreed to advance at once $500,000 against subsidy certificates owned by one of the American roads.

Tunneling a Volcano.—It is proposed to drive a tunnel into the crater of Popocatepetl, and to build from the mouth of the tunnel a railway to connect with the Interoceanic Railway at Amecameca. Those who are in negotiation for the property with the owner of the volcano, Gen. Gaspar Sanchez Ocha, are said to be a rich American house. The representative of the house visited the volcano with the French engineer Charles Roay. A contract is said to have been made for the exportation of 50,000 tons of sulphur a year. It is also proposed to establish a factory of sulphuric acid for use in Mexico, selling at $3 a quintal of 101½ pounds, American, of 65° strength.

Petroleum.—A company, composed of Boston capitalists, has secured large interests in the Tuxpan oil-region, in the State of Vera Cruz. The company has been preparing for extensive developments for more than a year. The geological formation is the same as that of the Pennsylvania oil-fields, and there are many marvelous oil-springs. The oil-field lies at the base of the San Felipe mountains, southwest of the port of Tuxpan. The petroleum, which resembles in gravity and appearance the Pennsylvania oil, oozes from the rocks and ground in many places. Around a small lake in the district, Lake Culco, there are forty oil-springs; the oil runs from them in such quantities that the lake is constantly covered with it. Pennsylvania oil-well drillers are superintending the development of the district.

There are also extensive petroleum deposits in the State of Tabasco. The oil-fields, or what will be the oil-fields if they are ever developed, are about forty miles from the capital. What is undoubtedly the most promising oil territory in Tabasco—in the San José mountains—is owned by natives, who are not inclined to dispose of it, and who care nothing for the petroleum it contains.

Viticulture.—Great efforts were made in 1883,

in the Department of Public Works, to distribute fine grape-cuttings, and to encourage a large interest in viticulture, with the view of making Mexico a wine-producing country. At Paso del Norte, northern Chihuahua, and Durango and Coahuila, Mr. Parras, of the latter State, grows a grape from which a wine is made equal, it is said, to fine sherry. The Del Norte wine is made from the old Mission grape. It is a good table-wine, but as made now will not bear transportation.

Cedar and Pine.—The surveyors of the American and Mexican Railway report that there are immense forests of cedar and pine in the south-eastern portion of Chihuahua. The entire Sierra Madre interiors are heavily timbered.

Bananas.—Mexican banana-planters get three crops a year. The plant is cultivated far more easily than any grain or tuber in northern latitudes, and the fruit is more nutritious. Even in spite of the price of the luxury, the demand for bananas has heretofore doubled in the United States about every five years since 1860, when the fruit-venders of American inland cities began to invest in an occasional cargo. But since the price of wheat, in crossing the Atlantic, increases only two thirds, there is no reason why bananas, in crossing the Rio Grande, should become twenty times dearer. In Western cities the poorest bananas can not be bought for less than three cents apiece, while in Oaxaca a "ramo," or bunch, with more than a hundred bananas of the very best quality, is sold for two reals, twenty-one cents. Among the wholesale planters of the rural districts, "ramos" of two hundred apiece, about the nutritive equivalent of three bushels of Irish potatoes, can be bought for one real. In slow-going fruit-barges, exposed to the seething sun, about 20 per cent. spoil before they reach New Orleans; but refrigerator cars would reduce that risk to a minimum.

The Toloachi-Plant.—The toloachi-plant grows everywhere in Mexico, but more thriftily in the tropical lowlands of the "tierra caliente." It is a harmless-looking plant, much resembling the northern milk-weed, and quite too dangerously convenient in a land where suspicion rules and jealousy amounts to madness. It does not kill, but acts immediately on the brain, producing first violent insanity and then hopeless idiocy. It is whispered that poor Carlotta had hardly landed at Vera Cruz, on her sorrowful mission to Mexico, before some of it was administered to her, and her deplorable fate is cited as one among many instances. Of all the dangers in Mexico, this is one of the most appalling. Any political enemy or jealous rival, or offended servant, may thus revenge himself in a more fiendish manner than with the stiletto, and with little fear of detection; a few drops of this tasteless white fluid, mixed with milk or other food, does its work with inexorable certainty, and can only be detected by its gradual results.

Property Rights of Foreigners.—Foreigners may purchase, hold, and transfer lands anywhere in Mexico, as well as Mexicans, excepting lands of the public domain. That is, they have the right so to do, but it is not practicable. It is required of all notaries before whom deeds for lands on the frontier are executed, to recite, in the opening of the instrument, the residence and nationality of the parties, and, if the purchaser be a foreigner, to insist upon the production of his permit before proceeding. Also, that the fact of such permit (referring thereto as being then produced) should be recited in the deed, with its date. Without such declaration, the title may be legally declared void; at least, it would leave the title in grave doubt.

Immense Estates.—Much has been said and written of the great extent and large possibilities of Mexican haciendas. But probably few people outside of Mexico yet realize the extent of some of these tracts, where a million or a million and a half of acres often constitute a single estate in the hands of one owner. There are many such in Mexico large enough to hide away some European principalities, large enough to awaken the envy of landed proprietors in the United States. These are to be found in the central and northern States of Mexico. The famous Salado ranch, for example, contains more than 600 square miles. It lies partly in the States of Nuevo Leon, Coahuila, Zacatecas, and San Luis Potosí, on the highway to Mexico and on the line of the new railroads. It occupies the central table-lands of Mexico, at an average elevation of 4,000 feet. Chains of mountains traverse the estate, rich in mineral wealth. The boundaries of the estate extend more than 100 miles from north to south, and flourishing farms and large mining towns are met at frequent intervals.

Señor Antonio Asunsolo owns 650 square leagues, and is part owner and administrator of a tract of 1,945 square miles. He sold in 1883 to an English syndicate, for $550,000, five haciendas, comprising 110 leagues, and the stock.

Industry in the Capital.—A great impulse has been given to manufacturing at the capital during the past few years, and there are now in the city of Mexico a great many hat-manufactories, 48 factories where dry goods are woven, chiefly shawls, 22 manufacturing saddlery, 26 silver-smiths' establishments, 32 metal-foundries, 12 iron-works, 7 copper-smiths' establishments, 12 match-factories, 14 chocolate-factories, and 10 candle-factories.

Immigration and Colonization.—The greatest activity is displayed, fostered by the Federal Government, to attract desirable immigrants, notably agriculturists, from Italy and the Spanish possessions, and settle them in colonies on the table-lands. Most of the 11,000 newcomers at Vera Cruz in 1882 were of these two nationalities, and 2,178 from the United States.

Commerce.—On Dec. 5, 1882, a treaty of commerce and navigation was signed between

Mexico and Germany, based, so far as the former is concerned, on the "most favored nation" clause. Negotiations have since been set on foot between Mexico on the one hand, and England and France respectively on the other, for the conclusion of similar agreements. The only advantages which the United States would possess over those nations, by the ratification of the pending reciprocity treaty, would be proximity of market and a lower freight-rate which the competition between railroads and ocean-steamers will secure. The amount of duties collected by the Mexican custom-houses from 1878 to 1882 was $65,513,932. The ensuing table shows the increase of the average annual exportation from Mexico:

ARTICLES EXPORTED.	Quinquennial period, 1878–'82.	Triennial period, 1872–'75.
The precious metals	$20,484,664	$22,210,983
Sisal hemp and Tampico istle	2,221,270	1,082,215
Coffee	2,022,986	608,889
Hides and skins	1,585,074	1,821,000
Cabinet-woods	1,514,073	1,250,675
Vanilla-beans	435,884	402,841
Cochineal and dye-woods	373,710	521,037
Sugar and molasses	326,335	38,854
Tobacco	252,464	90,570
Sarsaparilla	74,574	103,186
Other goods	928,482	791,965
Total	$30,169,516	$28,867,165

It will be noticed that while the export of the precious metals has decreased, that of other products has been on the increase. The average import in the fiscal years 1880–'81 and 1881–'82 was:

From the United States	$5,044,085
From the United Kingdom	4,921,990
From France	3,547,740
From last two countries *via* Belgium and Germany	4,447,705
From Germany, Spain, and other countries	1,796,145
Total	$19,757,665

While the imports of English and French dry goods have decreased somewhat, those of American have quadrupled.

The Mexican exports during the first quarter of the fiscal year 1882–'83 were as follow:

To England	$3,941,755
To the United States	2,702,738
France	1,009,740
Spain	292,085
Germany	271,980
Colombia	98,478
Guatemala	38,800
Ecuador	200
San Salvador	180
Total	$8,355,956
Of which the precious metals	$6,004,807
Sisal hemp	794,967
Cabinet and dye-woods	378,989
Coffee	335,586
Hides and skins	195,815
Istle	154,798
Vanilla	41,883
Tobacco	86,129
Sugar	49,077
Honey	39,420
Live animals	37,720
Other goods	233,564
Total	$8,355,956

	Precious metals.	Merchandise.	Total.
	Dollars.	Dollars.	Dollars.
Export, first quarter	6,004,807	2,346,129	8,355,956
Export, second quarter	9,465,998	2,398,123	11,864,122
Export, third quarter	8,561,961	3,521,254	12,083,216
Total	24,032,766	8,265,506	32,303,294

The United States imported from Mexico during the fiscal year 1883, $8,177,123 worth of merchandise, against $8,461,899 the previous year; and the domestic export from the United States to Mexico was $14,370,992 in 1883, against $13,324,505 in 1882. The import of specie from Mexico into the United States was $9,782,986 in 1883, against $6,631,938 in 1882.

The chief articles imported into the United States in the fiscal year 1882 from Mexico were: Coffee, 17,020,669 pounds; Sisal hemp, 19,233 tons; hides and skins, $1,525,107 worth; lead, 1,132,064 pounds; and sugar, 2,931,649 pounds. The principal articles exported from the United States to Mexico in the same year were: Manufactures of iron and steel, $3,861,514 worth; 838 railroad-cars, worth $579,421; 12,537,650 pounds of cotton; 10,584,486 yards of cotton goods; and $1,426,411 worth of lumber, furniture, and wooden-ware.

Inter-State Trade.—The Federal Constitution of Mexico was amended in 1883, to enable the individual States to abolish the collection of interstate duties, which had been one of the greatest obstacles to commercial intercourse, and had become a positive nuisance since the introduction of railroads. In response to a circular issued by the Minister of Finance, the various States sent delegates to the capital, October 1st, and the necessary steps were taken, in conformity with the amendment, leaving the States to indemnify themselves by imposing each some State tax or taxes in lieu of the duties thus abolished.

Reduction of Duties.—In December, 1883, the duty on all goods imported under the Mexican flag was reduced by 10 per cent.

MICHIGAN. The biennial session of the Legislature began on January 3d, and continued 157 days, adjourning June 9th. The result was 197 public acts, 24 joint resolutions, and 341 local acts. Among the public acts of more general interest are:

An act authorizing a father to appoint in his last will and testament a guardian or guardians for his minor children, born or unborn at the time of making the will, subject to objection by the surviving mother when the will shall be offered for probate. The same power is given to the mother of a minor child whose father may have died without appointing a guardian. In the same line is an act "to provide for the establishment of wills during the lifetime of testators." As introduced, the bill provided for proving the will without making its contents known to heirs, legatees, or officials; but, as the law passed, the contents of the will become public at the time of the hearing thereon, thus defeating the real object.

An act to authorize the general laws of this State, collected, arranged, and annotated by Andrew Howell (or Howell's Annotated Statutes), to "be received

and admitted in all courts and proceedings, and by all officers in this State, as evidence of the existing laws thereof, with the like effect as if published under and by the authority of the State."

An act to regulate the practice of dentistry creates a board of examiners, and provides for the issue of certificates to dentists who are not in practice in the State at the time the act shall take effect, or who do not hold a diploma from the faculty of a reputable dental college.

An act to promote public health provides that it shall not be lawful for any person to practice medicine or surgery, or any branch thereof (except dentistry), without having the qualifications required in the provisions of this act, and without having first registered in the office of the county clerk as provided in this act. The "qualifications" prescribed throw the door to practice and the books of registration wide open to every person "who shall have actually practiced medicine continuously for at least five years in this State, and who is practicing when this act shall take effect."

An act creating a Bureau of Labor and Industrial Statistics, and defining the powers and duties of the same, charges the commissioner, his deputy and assistants, with the collection of "statistical details relating to all departments of labor in this State, including the penal institutions thereof." John W. McGrath, of Detroit, was appointed commissioner, who appointed John Devlin, of the same city, deputy.

An act "to protect the rights of laborers" prohibits a stay of execution on any judgment obtained before a justice of the peace for the personal work and labor of the plaintiff.

Provision was made for a more complete census of population and productions (agricultural and manufactures) to be taken in June, 1884; and an appropriation of $60,000 was made for an asylum for insane criminals. It has been located at Ionia.

The list of joint resolutions includes two, amending the Constitution of the State:

1. So amending section 6 of Article VI (the judicial article) that the Board of Supervisors of each county in the Upper Peninsula may "give and pay to the circuit judge of the judicial circuit to which such county is attached, such additional salary or compensation as may from time to time be fixed and determined by such Board of Supervisors."

2. Fixing the compensation of members of the Legislature at $700 for each regular session (in lieu of the present allowance of $3 a day), and $100 for each extra or called session. The ten cents a mile travel-fee is continued, and the limit of introduction of bills is practically removed by authorizing legislation on "such subjects as are submitted to them by special message of the Governor after the expiration of fifty days." A new clause of the section reads, "And no member of the Legislature shall accept or use any free pass or free ticket of any railroad during his term of office." Each of the proposed amendments is to be voted upon at the general election to be held on the first Tuesday in November, 1884.

United States Senator.—In the contest for United States Senator to succeed the Hon. Thomas W. Ferry, whose term would expire March 4, 1883, the Republicans nominated Senator Ferry for re-election, and Hon. Byron G. Stout was chosen as the "Union" candidate. In the ballot on January 16th, the Republican vote was divided, and no candidate received a majority in either house. Balloting was continued from day to day, without result, until March 1st, when on the eighty-first ballot the vote stood: For Thomas W. Palmer, Republican, 77; for Byron G. Stout, Democrat, 44; for Thomas W. Ferry, 8; for John W. Champlin, 1.

Political.—At the annual election held on the first Monday of April, two justices of the Supreme Court were elected (one for the full term of eight years, and the other to fill a vacancy created by the resignation of Justice Marston); also two Regents of the University of Michigan for eight years.

The Republican State Convention was held at East Saginaw, February 28th. The candidates nominated were: For Justices of the Supreme Court—Austin Blair, for the full term; Thomas J. O'Brien, to fill vacancy. For Regents, Harry B. Hutchins and Joseph C. Jones. A committee on resolutions was appointed, but failed to report, and no platform was adopted.

The Democratic State Convention was held at Lansing, March 7th. John W. Champlin was nominated for Justice of the Supreme Court, and Arthur M. Clark for Regent. The chairmen of the convention and the State Central Committee were authorized to notify the National Greenback Convention of the action, and in case no union was effected, to fill the vacant places in the ticket. The committee on resolutions reported a platform. A vigorous attack was made upon the declaration in the third resolution in favor of "a tariff for revenue only," but the convention almost unanimously refused to strike out the word "only."

The National Greenback State Convention was held at Lansing, March 8th. The proposition to unite with the Democracy and accept their nominations of the day before, was bitterly opposed, but on call of the roll was adopted by a vote of 333 to 79. The convention completed the ticket by nominating Thomas Sherwood for Justice of the Supreme Court, and Charles J. Willett for Regent of the University.

The Prohibitionists entered the canvass with a full ticket, and a platform demanding an amendment of the Constitution so as to prohibit the manufacture and sale of intoxicating beverages, beer included, and opposing license or taxation of the traffic. A fourth ticket was put forth by a few Greenbackers who repudiated the action of the State Convention. The election resulted as follows:

On Justice of the Supreme Court, full term: For John W. Champlin, Union, 127,376; Austin Blair, Republican, 119,870; John H. Tatem, Prohibition, 13,467; James S. Andrews, Greenbacker, 641. Plurality for Champlin, 7,506.

On Justice of the Supreme Court, vacancy: For Thomas R. Sherwood, Union, 124,639; Thomas J. O'Brien, Republican, 122,330; D. P. Sagendorph, Prohibition, 13,950. Plurality for Mr. Sherwood, 2,309.

On Regents of the University: For Arthur M. Clark, Union, 127,635; Charles J. Willett, Union, 125,405; Harry B. Hutchins, Republican, 120,627; Joseph C. Jones, Republican, 120,956; Joseph W. Ewing, Prohibition, 13,959; George S. Hickey, Prohibition, 13,762; Waldo May, Greenback, 466. Plurality for Clark, Union, 6,679; for Willett, Union, 4,449.

Finances.—The annual report of State Treasurer Butler for the fiscal year ending Sept. 30, 1883, shows the financial condition of the State as follows:

Cash balance, Sept. 30, 1882	$1,757,983 31
Receipts for fiscal year	2,752,797 53
Total	$4,510,780 84
Payments	3,436,463 64
Balance in treasury Sept. 30, 1883	$1,074,267 20

The bonded indebtedness was reduced during 1883 by the payment of the balance of the two-million loan, amounting to $590,000. The bonded debt now is:

Past due part-paid five-million loan bonds, $21,000, adjustable at $578.57 per $1,000 (not bearing interest)	$12,149 97
War-bounty loan bonds, due in 1890	297,000 00

For the payment of which are held:

In general fund	$12,149 97
In hands of Fund Commission, United States 4½ per cent. bonds	297,000 00

The trust-fund debt, composed of amounts upon which the State as trustee pays interest for educational purposes, now is:

Agricultural-College fund	$258,524 53
Normal-School fund	60,365 45
Primary-School fund	3,064,078 34
Primary-School five per cent. fund	344,194 31
University fund	493,401 32
Total	$4,221,063 95

Upon which interest has been paid from the specific-tax fund as follows:

To Agricultural-College interest fund	$16,741 38
To Normal-School interest fund	3,622 12
To Primary-School interest fund	710,399 64
To University interest fund	34,352 09
Total	$765,115 23

The trust-fund debt was increased during the year in the sum of $188,196.84.

The receipts on account of specific taxes showed an increase from the preceding year of $156,133.37; of which sum $128,857.16 came from the railroad companies.

The total apportionment of State taxes was $1,474,672.26, an increase over the apportionment for the year 1882 of $353,581.03. The increase in the item for general purposes is $338,400.92, or nearly the whole amount.

Railroads.—There were constructed in Michigan, by fifteen companies, during the year, 405·6 miles of railroad, the largest number of miles built by any State that year. The Michigan and Ohio, built by the Seney syndicate, was completed from Allegan to Toledo, 155 miles, much of it parallel with the Michigan Central.

Insurance.—The following figures are taken from the summary of the report of the State Commissioner of Insurance:

MICHIGAN BUSINESS, 1883.

NAME AND LOCATION.	Risks written.		Premiums received.		Losses incurred.		Losses paid.	
	Fire.	Marine and inland.	Fire.	Marine and inland.	Fire.	Marine and inland.	Fire.	Marine and inland.
Michigan companies	$13,501,257	$1,490,693	$167,882	$10,197	$61,928	$5,290	$50,601	$8,578
Companies of other States	149,450,285	11,044,896	2,166,140	96,699	1,117,805	89,980	1,088,984	75,010
Foreign companies / United States branch	53,779,293	2,739,265	768,283	21,565	412,709	34,081	379,031	24,256
Aggregates	$216,730,785	$15,274,854	$3,097,305	$128,461	$1,591,942	$129,261	$1,518,608	$107,844

Education.—The following school statistics are furnished by the Superintendent of Public Instruction, in advance of the publication of his annual report:

Number of school districts, September, 1883	6,719
Increase over previous year	89
Number of school-houses	6,890
Increase over previous year	162
Number of children between five and twenty years of age	560,888
Increase during the year	22,477
Number of children attending the public schools	391,610
Increase over previous year	6,106
Number of sittings in public schools	485,886
Increase over 1882	3,481
Number of private and select schools	295
Number of teachers employed, male	137
Number of teachers employed, female	281
Increase over 1882	108
Wages paid teachers	$2,461,486 66
Increase over 1882	267,588 73
Estimated value of school property	10,485,860 00
Amount on hand from previous year	933,688 22
Amount received from one-mill tax	640,141 50
Amount received on primary-school fund	724,864 21
Library moneys	32,668 90
Amount received as tuition for non-residents	46,196 17
Amount received from district taxes	2,538,997 07
Amount received from all other sources	466,870 13
Total receipts for the year	$5,383,426 20
Amount carried forward to next year	$1,123,553 44
Expenditures, including wages of teachers, payments on debts, buildings, etc.	4,259,872 76
Total expenditures for the year	$5,383,426 20

From the annual report of the Warden of the State Prison, not yet in print, the following abstract is taken:

Number of convicts, Sept. 30, 1882	636	
Received during the year	177	
		813
Discharged by expiration of sentence	200	
Discharged for new trial	3	
Discharged by order of Supreme Court	1	
Pardoned by Governor	19	
Lost by escapes	4	
Died	6	
Transferred to Detroit House of Correction	2	
		235
In prison, Sept. 30, 1883		578

Average length of sentence, 3 years, 9 months, 26 days. Classification by crimes: Murder in first degree, 3; murder in second degree, 8; manslaughter, 1; felonious assaults, 8; robbery, 10; rape, 4; attempt to rape, 3; abduction, 1; assault with intent to rob, 1; polygamy or bigamy, 4; incest, 1; against

property, 115; forgery and counterfeiting, 12; perjury, 3; riot, 1; jail-breaking, 2.

The net earnings for the year were $6,329.98; the net expenditures, $89,257.70.

Iron.—The amount of iron-ore shipped from Lake Superior mines in 1883 was 2,851,872 tons; the approximate value of which was $13,677,919. The Lake Superior charcoal-furnaces in 1883 produced 57,384 tons of iron, the approximate value of which was $1,291,140. The product of the Lake Superior iron-mines since 1863 is 23,126,078 tons.

Salt.—The following table shows the amount of salt inspected in Michigan in 1883:

DISTRICTS.	Fine, bulk.	Fine, barrels.	Packers'.	Second quality.	Total.
Saginaw county*	236,885	919,085	3,632	9,620	1,185,957
Bay county	217,307	880,418	3,422	5,320	1,106,461
Huron county	.....	253,946	5,784	6,239	256,965
Iosco county	.....	209,297	679	668	210,644
Midland county	.....	59,370	....	6,766	66,135
Manistee county	.....	46,207	1,906	431	48,544
Gratiot county	.....	3,086	....	2,100	6,176
St. Clair county	.....	3,392	1	1,387	4,780
Grand totals	454,192	2,374,796	15,424	33,526	2,894,672

The above table shows a decrease in the amount inspected during the fiscal year from that of 1882 of 142,645 barrels.

Lumber.—The aggregate lumber-cut of 1883 was 938,675,078 feet, which was about 78,000,000 feet less than that of 1882.

MINNESOTA. State Government.—The following were the State officers during the year: Governor, Lucius F. Hubbard, Republican; Lieutenant-Governor, Charles A. Gilman; Secretary of State, Frederick von Baumbach; Treasurer, Charles Kittelson; Auditor, W. W. Braden; Attorney-General, W. J. Hahn; Superintendent of Public Instruction, D. L. Kiehle; Adjutant-General, A. C. Hawley; Public Examiner, H. M. Knox; Insurance Commissioner, A. B. McGill; Commissioner of Statistics, Oscar Malmros; Railroad Commissioner, James H. Baker. Judiciary, Supreme Court: Chief-Justice, Charles E. Vanderburg; Associates, William Mitchell and D. A. Dickinson.

Legislative Session.—The Legislature convened on the 2d of January, and adjourned early in March. On the 1st of February, and on the thirtieth ballot, Dwight M. Sabin, Republican, was elected United States Senator by a vote of 81 against 30 for William Windom, 15 for Gordon E. Cole, and 9 for Lucius F. Hubbard.

Upward of 1,000 bills were introduced, of which about half became laws. Of those passed the larger number are special acts. The general laws outside of general appropriations number 150. Fifty-odd bridge appropriations were ordered, and a score of bills passed for general appropriations. Thirty-one bills relating to St. Paul and Ramsey county passed, while Hennepin county and Minneapolis asked legislation to the extent of 25 bills.

Among the number of valuable additions to the statute-books is the act creating a Board of Public Charities and Corrections; the bill making murder punishable with the death-penalty; and the law regulating the practice of medicine and providing for the examination and licensing of all physicians who shall come to Minnesota, for five years. The savings-bank law was amended to permit the savings-banks to loan money in Dakota, and State banks were put upon the same platform as national banks in the matter of making their reports. A law likely to be fraught with some good and possibly some evil was the one making void bills, notes, and other negotiable paper obtained by fraud or artifice in the hands of any third person. A codification of the laws—stringent and comprehensive—for the prevention of the spread of infectious diseases became a law, while the companion bills, to prohibit the pollution of waters and to regulate slaughter-houses, failed. The date of beginning the fiscal year in the State was changed from November 1 to July 1. The chief appropriation was $306,000 for improving the State Prison, the sum to be distributed over about ten years. Among the acts passed were also the following:

To prevent setting fire to woods, prairies, or other grounds.

To provide for borrowing money to defray the extraordinary expenditures of the State government.

To punish willful violation and omission of duty and gross negligence of duty on the part of railway employés.

Amendments were proposed to the Constitution, to be voted upon at the November election, viz.:

The official term of the Secretary of State, Treasurer, and Attorney-General shall be two years. The official term of the State Auditor shall be four years, and each shall continue in office until his successor shall have been elected and qualified.

The official year for the State of Minnesota shall commence on the first Monday in January in each year, and all terms of office shall terminate at that time; and the general election shall be held on the first Tuesday after the first Monday in November. The first general election for State and county officers, except judicial officers, after the adoption of this amendment, shall be held in the year 1884, and thereafter the general election shall be held biannually. All State, county, or other officers elected at any general election, whose terms of office would otherwise expire on the first Monday of January, A. D. 1886, shall hold and continue in such office, respectively, until the first Monday in January, 1887.

Increasing the term of office of the Clerk of the Supreme Court from three to four years, and reducing the official term of the judges of the supreme and district courts from seven to six years.

The proposed prohibitory amendment failed.

The appropriations made by this session, including standing appropriations of former Legislatures, for public institutions, current expenses, bridges and miscellaneous purposes, for the thirty-one months ending July 31, 1885, amounted to $2,682,937.25.

Finances.—The report of the Treasurer for the

* Includes 16,785 barrels of solar salt.

eight months from Dec. 1, 1882, to July 31, 1883, the end of the new fiscal year, shows the following receipts and disbursements:

The receipts:	
For revenue fund	$546,890 31
For State institutions fund	484,277 13
For interest fund	65 48
For sinking fund	284 95
For seed-grain sinking fund	978 83
For permanent school fund	346,249 07
For general school fund	286,615 45
For permanent university fund	20,375 09
For general university fund	41,829 57
For internal improvement land fund	58,289 91
For forestry fund	27,014 52
For redemption fund	7,957 19
For internal improvement land fund interest	33,614 76
For swamp-land fund	50 00
For attorney Twelfth District	1,499 94
For school text-book fund	19,255 79
Total	$1,875,198 99
Balance in treasury Dec. 1, 1882	143,098 58
Total receipts	$2,018,297 57
The disbursements:	
From revenue fund	$570,842 69
From State institutions fund	386,917 07
From interest fund	3,480 82
From sinking fund	25,000 00
From redemption fund	9,549 61
From seed-grain sinking fund	1,000 00
From permanent school fund	404,800 00
From general school fund	85,237 36
From general university fund	67,216 51
From internal improvement fund	10,658 88
From internal improvement land fund	86,985 00
From forestry fund	1,195 61
From internal improvement land fund interest	30,595 67
From attorney Twelfth District	1,499 94
From school text-book fund	20,236 97
Total disbursements	$1,714,711 18

There was in the treasury a balance of $557,744.27 Nov. 30, 1881. For the year ending Nov. 30, 1882, the receipts were $3,201,415.79, and the disbursements, $3,058,317.21, leaving a balance of $143,098.58. The total bonded debt of the State was placed at $4,339,000. The total taxable value of all property for 1882 was $311,193,435.

The number of children enrolled in the public schools in 1883 was 191,873.

Agriculture.—The crops of 1883 are reported as follow: The yield of wheat was for 2,571,637 acres 38,305,373 bushels, an average of 14·89 bushels to the acre. There were 922,813 acres sown in oats, returning 34,448,609 bushels, an average of 37·33 bushels to the acre. Barley, 304,006 acres, producing 7,344,785 bushels, or 24·16 bushels per acre. Rye, 25,834 acres; production, 439,178 bushels. About 764,687 acres were planted in corn. The crop was poor in quantity and quality. The following was the yield of 1882:

	Bushels.		Bushels.
Wheat	32,461,006	Oats	25,600,068
Corn	16,673,142	Barley	6,096,750

Dairy Products.—The Auditor's report for 1883 gives a total of 301,688 milch-cows in the State, the assessable value of which is set at $5,499,000. In 1882 there were 272,681 milch-cows, valued at $4,988,000; and in 1881 the number was 267,577, worth, at $18 each, about $4,248,000.

The value of this year's butter product in Minnesota, at an average valuation of 30 cents a pound, will exceed $5,300,000, and that of last year was close to $5,000,000. In 1880 there was not a single creamery in the State worthy the name, and the one erected at Spring Valley in 1881 was much commented upon. Now there are seventy creameries or butter-factories of considerable size, and their number is being augmented almost every month. There were produced in 1882, 17,136,788 pounds of butter.

Party Conventions.—The Republican State Convention met in St. Paul on the 27th of June, and nominated the following ticket: For Governor, Lucius F. Hubbard; Lieutenant-Governor, Charles A. Gilman; State Treasurer, Charles Kittelson; Secretary of State, Frederick von Baumbach; Attorney-General, W. J. Hahn; Railroad Commissioner, James H. Baker.

The Democratic State Convention met in St. Paul on the 2d of August, and nominated the following ticket: For Governor, W. W. McNair, of Minneapolis; Lieutenant-Governor, R. Frazee, of Becker county; Secretary of State, J. J. Green, of Le Sueur; Treasurer, John Ludwig, of Winona; Attorney-General, John W. Willis, of St. Paul; Railway Commissioner, A. T. Lundholm, of Stillwater.

Mr. McNair declined, and Mr. Bierman was substituted in his place.

Election Returns.—At the election in November, the Republican ticket was successful by the following majority: Hubbard, 9,149; Gilman, 14,290; Von Baumbach, 24,045; Kittelson, 23,035; Hahn, 23,295; Baker, 23,452. The amendments received an average majority of 50,072.

Cyclone.—Near the end of August a cyclone struck the city of Rochester, Olmsted county, a handsome place of about 6,000 inhabitants, and in a brief time over 100 houses had been entirely demolished, 19 persons killed, and nearly 100 wounded. The storm passed through sections of Dodge county, leaving a trail of death and destruction.

MISSISSIPPI. State Government.—The following were the State officers during the year: Governor, Robert Lowry, Democrat; Lieutenant-Governor, G. D. Shands; Secretary of State, Henry C. Meyers; Treasurer, W. L. Hemingway; Auditor, Sylvanus Gwin; Attorney-General, Thomas C. Cutchings; Superintendent of Public Education, J. Argyle Smith; Commissioner of Agriculture and Immigration, E. G. Wall. Judiciary, Supreme Court: Chief-Justice, J. A. P. Campbell; Associate Justices, H. H. Chalmers and Timothy E. Cooper. The only election during the year was for members of the Legislature. That body, when it meets in 1884, will consist of 33 Democrats, 3 Republicans, and 1 Independent in the Senate, and of 99 Democrats, 12 Republicans, and 5 Independents in the House.

Finances.—The Auditor's report shows the valuation of the property in the State to be as follows:

For 1882, realty.....	$79,712,851	State tax..	$293,585 42
For 1882, personalty ..	37,213,209		
Total.....	$116,926,060		
For 1883, realty.....	$87,596,173	State tax..	$316,887 81
For 1883, personalty...	39,158,754		
Total	$126,754,927		

The assessment for 1883 shows an increase of $20,556,227 over the valuation in 1879, when the land was last assessed.

The following extract from the Treasurer's report for the years 1882 and 1883 will show the general financial condition of the State:

RECEIPTS.

The receipts for 1882.....	$770,959 52
The receipts for 1883.....	746,864 75
Cash balance in the treasury, Jan. 1, 1882.....	545,106 28
Total.....	$2,062,930 55

DISBURSEMENTS.

The disbursements for 1882.....	$1,057,441 05
The disbursements for 1883.....	836,499 90
Cash balance in the treasury, Jan. 1, 1884.....	168,989 60
Total.....	$2,062,930 55

RECOGNIZED INDEBTEDNESS.

Chickasaw school fund.....	$815,709 71
Chickasaw school-fund interest.....	10,876 13
Common-school fund, old account	817,646 46
Common-school fund, distributive	128,139 10
Seminary fund, account of University of Mississippi.....	544,061 28
Warrants outstanding	80,173 99
Certificates of indebtedness outstanding	2,555 00
State bonds, series "G," past due and not presented	1,000 00
Mississippi 4 per cent. bonds due Jan. 1, 1890...	216,000 00
Agricultural-College bonds due Jan. 1, 1896....	227,150 00
Interest on 8 per cent. State bonds, past due and not presented	890 00
Deposits by insurance companies, currency not included in cash balance	60,000 00
Railroad-tax for distribution.....	37,293 21
Swamp-land fund	88,837 28
Total	$2,974,832 06

On the 1st of January, 1882, there was a cash balance of $545,106.28 in the treasury. On the 1st day of January, 1884, this balance was reduced to $168,989.60.

Education.—"It affords me pleasure" says the Governor, "to be able to state that the cause of education is at present receiving more attention in Mississippi than at any former period of her history. The average attendance for 1882 and 1883 was largely in excess of that of any previous years since the inauguration of the system. Teaching in public schools has improved, and this is due in part to the introduction of teachers' institutes in many counties. Great interest is being manifested in the State Teachers' Association, which has been organized in this State, and the recent meeting was largely attended."

During the session of 1881–'82 there were in the literary department of the University of Mississippi 202 students; in the law department, 12. During the session of 1882–'83, there were in the literary department, 245; in the law department, 14. The present session opened in September, and at the close of 1883 there were enrolled in the literary department, 236; in the law department, 9.

In June, 1883, the trustees opened the doors of the university to women, and 12 matriculated the following session. There are now 22 in attendance.

The last Legislature appropriated $8,000 for the repair and improvement of the university buildings. The law prohibiting the sale or giving away of intoxicating liquors within five miles of the university is working well.

In the Agricultural and Mechanical College, the first year, there were 354 students: 87 in college classes; 267 in the preparatory department. The second year, there were 304 students: 150 in college classes; 154 in the preparatory department. The third year, there were 317 students: 148 in college classes; 169 in the preparatory department.

The college has received from the State in the aggregate $205,000. With this sum and $9,000 given by the citizens of Starkville, and the interest on the land-scrip fund, and $15,000 realized from the sale of bonds, authorized by an act approved March 7, 1882, the college has been supported for three years, and has acquired property worth $180,357.

In the past three years the college has realized from the sale of surplus produce of the farm and dairy, $7,447.44.

In the Alcorn Agricultural and Mechanical College the attendance for the past two years has been rather larger than heretofore, but it still averages only 100 a year. One great difficulty the institution encounters is the broken and irregular attendance of the pupils, but few going the entire session. There have been but three graduates since the college was founded. The faculty is composed of the president, two professors, and one tutor. The college is practically a normal school for the education of colored teachers, though agriculture is taught with some success.

In Tougaloo University the attendance is larger than at any previous time, there being a total of 147—74 males and 73 females. The school was never so well equipped and officered. The managers and instructors number 13. The expense per month for board and tuition is $10. About 200 acres of land are in cultivation. Most of the labor is done by the students. An industrial superintendent has recently been added to the corps of instructors.

The institution was founded and is carefully supervised by the American Missionary Society of New York.

The school-buildings are valued at.....	$36,000 00
The farm, with buildings, is valued at	11,500 00
The stock and vehicles are valued at.....	8,500 00
Total.....	$51,000 00

State Institutions.—In the Lunatic Asylum the death-roll has been larger than usual, owing, it is thought, to overcrowding and an insufficient supply of water. The completion of the East Mississippi Insane Asylum will enable this one to reduce the number of patients.

The total amount expended on account of the Institute for the Blind for the year 1882 was.....	$37,576 13
And for the year 1883.....	11,793 67
Total	$49,369 80

The entire cost of the present establishment, including the $15,000 originally appropriated and expended in 1880–'81, is $46,119.80.

The building was completed in September, 1882, and possession taken in October following. Since that date everything has been working to the satisfaction of the Trustees.

Under the management of Mr. J. R. Dobyns, who continues in charge, the Institution for the Deaf and Dumb has attained unusual and extraordinary success. The pupils have made rapid advances, and can communicate their thoughts with readiness and facility by signs and in writing. Articulation instruction has been introduced within the last two years with gratifying success. There were in attendance, in 1882, 57 whites and 15 colored; in 1883, 66 whites and 15 colored. The last Legislature appropriated $3,000 for the erection of buildings on the lands adjacent to the city of Jackson, in the possession of the Board of Trustees, suitable for the accommodation, care, and instruction of the colored deaf-mutes. A site was secured and necessary buildings erected, within the appropriation, for that purpose.

On the first day of January, 1884, there were in charge of the lessees of the Penitentiary 771 convicts, of whom 696 are colored, 74 are white, and 1 Indian. During the last two years, beginning Jan. 1, 1882, and ending Dec. 1, 1883, 218 have died, 118 have escaped, and 25 have been recaptured. During the two years preceding those last named, out of a total of 876 convicts, 122 died, 136 escaped, and 25 were recaptured. The number received in 1882 was 408; in 1883, 293. The number of convicts by crimes against person is 548; against property, 223. The number discharged in 1882 was 219; in 1883, 144.

Progress of the State.—In regard to the recent progress of the State, the Governor reports:

In the last two years alone 461,783 acres have been purchased through the Auditor's office from the State. There is a growing confidence in the future, as shown by the purchase of these lands and of 435,110 acres of lands held by the Federal Government in the last two years, together with the unprecedented homestead entries, amounting to 286,283 acres. The reduction in the debt and the rate of taxation and yearly expenditures has been accomplished without detriment to the public service or neglect of the different charitable and educational institutions. All these have been liberally sustained and new ones established. During the past two years some 450 miles of railroad have been built in Mississippi. Large sums have been invested in cotton-factories, oil-mills, cotton-compresses, etc., and I am pleased to say that the investment has been profitable in every instance. The capacity of some mills has been doubled within the last two years, and they are still unable to supply the demand for their fabrics.

Manufactures.—To encourage the establishment of factories in this State, the Legislature of 1882 passed an act exempting from taxation, for ten years, the machinery used for the manufacture of cotton and woolen goods, yarns or other fabrics, composed of these or other materials, or for the making of all kinds of machinery or implements of husbandry, or all other articles not prohibited by law.

There are fourteen cotton and woolen factories: The Wesson mills, at Wesson; Natchez cotton-mills, at Natchez; Rosalie cotton-yarn mills, at Natchez; Stonewall cotton and woolen mills, near Enterprise, Clark co.; Juanita cotton and woolen mills, near Enterprise; Ullman woolen-mills, at Bay St. Louis; Yocona cotton-yarn mills, at Water Valley; Stansbury cotton-mills, at Carrollton; cotton-mill at Canton, and two cotton-mills at Corinth; Bay Springs cotton-factory, Tishomingo co., and another at Port Gibson.

There is a cotton-seed oil mill at Natchez, two at Vicksburg, one at Port Gibson, one at Jackson, one at Yazoo City, one at Grenada, one at Columbus, one at Meridian, one at Aberdeen, one at Lexington, one at Refuge Landing, one at Greenville, and a number of others in process of construction. A great many saw-mills are going up throughout the long-leaf pine region, a good many built by Northern capital. Besides these, there are a great many in operation already.

Timber.—There are 20,000,000 or more acres of timber-lands, which consist of pine, red-gum, oak of many varieties, cypress, magnolia, willow, cottonwood, beech, locust, and elm. Of long-leaf pine, in the region of Pearl river, contiguous to the Illinois Central Railroad, there is perhaps 6,000,000,000 feet (board-measure) now; east of Pearl river there is perhaps the same quantity. There is perhaps of the short-leaf pine standing, 7,000,000,000 feet. The red-gum, to which the people heretofore attached but little value, is now taking its place to some extent.

Health.—About 784 cases of small-pox have been reported as occurring in the State in 1882 and 1883. Where an extensive outbreak of the disease has occurred, it has been the rule to place an inspector in charge, and to employ guards, both on foot and mounted, when necessary to secure the isolation of cases.

Concealed Weapons.—On this subject the Governor says:

A fruitful source of crime is the too prevalent habit of carrying concealed weapons. Impulses are often born of opportunities, and it frequently happens that the possession of a pistol presents strong temptation to its unlawful use. In my opinion the most efficient remedy for the evil of carrying concealed weapons is to make their use to kill, or attempt to kill, a crime not admitting of defense, so that, if killing or attempting to kill is by means of a weapon drawn from concealment on the person, there shall be no excuse or justification. If one could not, under any circumstances, lawfully use a deadly weapon, carried in concealment on the person, he would cease to carry it.

Miscellaneous.—On the 17th of January a convention of citizens interested in the culture of jute was held in Jackson, and on the 1st of October an Interstate Levee Convention assembled in Vicksburg. In April a cyclone swept over a portion of the State, being especially destructive in the towns of Wesson and Beauregard, where many lives were lost.

MISSOURI. State Government.—The State officers during the year were the following: Gov-

ernor, Thomas T. Crittenden, Democrat; Lieutenant-Governor, Robert A. Campbell; Secretary of State, Michael K. McGrath; Treasurer, Philip E. Chappell; Auditor, John Walker; Attorney-General, Daniel H. McIntyre; Superintendent of Public Schools, William E. Coleman; Register of Lands, Robert McCulloch; Superintendent of Insurance Department, John F. Williams; Railroad Commissioners, George C. Pratt, Archibald Sevier, and Jas. Harding. Supreme Court: Chief-Justice, Warwick Hough; Associate Justices, John E. Henry, Elijah H. Norton, Robert D. Ray, and Thos. A. Sherwood.

Legislative Session.—The Legislature met January 3d, and adjourned April 2d.

Among the acts passed are the following:

To prevent the change of rates for freight without notice thereof by railroad companies in this State; to protect owners of property shipped for sale on commission, and to punish persons for making false returns of such sales; concerning persons charged with crime and becoming insane between indictment and trial, and to provide for their disposition; to protect Government lights and light-house stations on the navigable waters of this State; to prevent and punish malicious mischief; to provide for counting, comparing with the list of voters, and examining ballots in cases of contested elections; creating a State Board of Health, and defining its duties and powers; relating to the deposits of foreign insurance companies; to provide for a topographical survey of the sunken and overflowed lands of southeast Missouri; to authorize corporations which have been or hereafter may be organized for the purpose of reclaiming swamp and overflowed lands to levy in certain contingencies an additional tax of fifteen cents per acre per annum; to regulate the practice of dentistry in the State; to regulate the practice of medicine and surgery in the State; to facilitate the assessment and collection of revenue; revising and amending the general laws in relation to roads and highways, and providing for establishing, opening, repairing, and vacating the same; to provide for the construction of turnpike-roads; to establish a Bureau of Labor Statistics, and inspection of factories, mines, and workshops throughout the State, and to provide for the appointment of an inspector of the same.

Two amendments to the Constitution were proposed, to be submitted to the people in November, 1884. One of these provides for the raising of a tax of not over fifteen cents on the $100 for road and bridge purposes. The other extends the jurisdiction of the St. Louis Court of Appeals over fifty-five counties as well as the city, and establishes at Kansas City an additional appellate court, to be known as the Kansas City Court of Appeals, having jurisdiction over the residue of the State, and consisting of three judges. It also gives the Legislature power to create one additional Court of Appeals, and to regulate the jurisdiction of these courts. Other important acts are the so-called "Downing high-license" law, and the act creating a commission of three judges to relieve the Supreme Court. The general appropriation bill provides for $6,134,301, and the special appropriations $550,000, $100,000 being to extend and repair the State University.

Education.—The report of the Superintendent of Public Schools shows that decided improvement was made in the pubic schools of the State during the year. The statistics, while approximately correct, are quite unsatisfactory, for many county clerks fail to make correct returns from all the districts, and some fail to make any report whatever. In referring to colored schools, the superintendent says:

The prejudice heretofore existing against colored schools and the education of the colored youth, to give them equal advantages with the whites, as the law directs, has in a great measure disappeared, and the colored schools are maintained for the same length of terms as the white schools. Sometimes a case arises where the people or board refuse to open a colored school as the law directs, but only a few such cases have been reported to my office. Nearly all the colored schools are taught by colored teachers, and, so far as at present known, they are all colored. This plan is less objectionable and works much better than otherwise.

The last General Assembly made appropriations for educational purposes as follow:

One fourth of revenue	$892,242 14
Interest on school fund	174,540 00
State moneys, 1883	566,782 14
Estimated for 1884	570,000 00
University (for building)	100,000 00
University support	54,540 00
Agricultural College debt	28,000 00
School of Mines, support of	15,000 00
Normal School, Kirksville	20,000 00
Normal School, repairs	15,965 50
Normal School, Warrensburg	20,000 00
Normal School, repairs	15,000 00
Normal School, Cape Girardeau	20,000 00
Normal School, repairs	12,750 00
Lincoln Institute	12,500 00
Repairs for same	3,500 00
Deaf and Dumb Institute	92,500 00
Repairs for same	26,000 00
Blind Asylum	52,000 00
Repairs for same	5,000 00
Increase of school fund	218,462 99
Total appropriation	$1,843,330 93

The following report is made by the County School Commissioners, showing the number of children of school age in the State:

White children	719,670
Colored children	43,323
Total	762,993
White children enrolled	487,509
Colored children enrolled	23,820
Total	511,329

The number of teachers employed in the State is 12,077; average monthly salary, $46.61.

Finances.—Between the 1st of January and the 1st of September the Fund Commissioners purchased and retired 572 State bonds of $1,000 each, which leaves still outstanding of the bonded debt of the State $13,231,000. The remainder of the debt will mature as follows:

1885	$4,000	1890	$242,000
1886	1,856,000	1892	884,000
1887	8,157,000	1894	489,000
1888	3,184,000	1895	625,000
1889	848,000	1911	3,031,000

The assessed value of the taxable property last year was $656,250,418, an increase of $6,983,171 over the valuation of 1882, and $54,528,000 over that of 1881. The State taxes collected last year amounted to $3,345,378.

Temperance Convention.—The Prohibition Alliance of the State met in Warrensburg on the

26th of June, and remained in session until the 28th. Its resolutions included the following:

That we hereby pledge our individual and organized efforts for the defeat of any candidate for the next General Assembly of the State, whether the nominee of a party or not, who shall refuse to declare publicly in writing that if elected he will vote and industriously labor for the submission of a constitutional amendment prohibiting the manufacture, for sale, and the sale of intoxicants, as a beverage, within this State.

MONTANA. Territorial Government.—The territorial officers during the year were: Governor, John Schuyler Crosby; Secretary, Isaac J. McCutcheon.

Railroads.—Three years ago the Northern Pacific Railroad reached the eastern border of Montana, and in August of this year the two ends met, 50 miles west of Helena. There are 787 miles of its trunk line within the Territory, and two branch lines have been completed, one from Livingston to the borders of the National Park, 50 miles, and another to the mining center at Wickes, 20 miles. There are also in the Territory about 200 miles of narrow-gauge road, a part of the Union Pacific branch extending from Ogden, Utah, to a connection with the Northern Pacific at Garrison, Montana, with a branch at Butte.

Banks.—Montana has twenty-five banking institutions, nine of which are national banks. Four of these latter are in Helena, and have a combined capital of $875,000, with deposits to the amount of $4,300,000.

Finances.—In 1882 there was a total assessment of $33,211,319, an increase of $9,170,511 over 1881. The assessment for 1883 is about $46,560,300. Even this fails to do the Territory justice, for it does not include a dollar for the mines, whose net income alone is taxed.

The Territory does not owe a dollar, and the aggregate indebtedness of the thirteen counties is under $1,000,000, mostly incurred for public buildings, and for roads and bridges.

The expenditures for 1882 by warrants drawn on the treasury amounted to $61,067.52. The estimated expenditures for 1883 were $70,500.

Amount of revenue proper collected during 1882..	$90,863 47
Amount of revenue proper collected during 1881..	75,286 64
Increase of revenue proper for 1882.....	$15,576 83

Schools.—The only means of support for the schools is a property-tax, divided among the districts of each county in proportion to the number of children of school age. By territorial law this county school-tax can not be less than three mills nor more than five mills on the dollar. It averages about four mills. In addition to this, many districts vote an additional special tax to extend the school term. All of the larger places have provided themselves with convenient school-houses. Besides those of former years, seven large graded school-buildings of the first class are in process of construction, and the value of school-buildings in the Territory is fully $200,000.

General Condition.—On this subject the Governor in his report, dated Oct. 31, 1883, says:

At the time of the census of 1880, Montana had fewer than 40,000 inhabitants. That same year witnessed the entry of the first railroad within her borders. During the ten preceding years the population had barely doubled, but within the past three years it has advanced from 40,000 to upward of 80,000. While it is true that much of Montana's surface seems adapted to a scanty population engaged in pastoral pursuits, other sections, covering probably a fourth of its area, creviced and underlaid with mineral wealth, are certainly destined to give homes and employment to a dense population at no distant day.

The last Territorial Legislature authorized a call for a Constitutional Convention with a view to submit the Constitution framed to the vote of the people in November, 1884. The convention will assemble in January, and the members have already been elected.

The following was the vote for delegates in Congress in 1882: Martin Maginnis, Democrat, 12,398; A. C. Botkin, Republican, 10,914.

Some experiments are now in progress to test the feasibility of artesian wells. One at Miles City has struck a strong flowing stream at the depth of 852 feet.

Timber-Lands.—The timber-lands of Montana are almost exclusively confined to the mountains—estimated to cover two fifths of the Territory—where the lands would be of very little or no value when once stripped. Every year witnesses a greater waste by fires, that care might prevent, than would suffice to supply the wants of settlers.

Mining Products.—The rich placer-mines of early days have probably yielded up their most bountiful harvests, yet the oldest ones continue to be worked with good results. A great deal of what is properly mineral land is still more valuable for agriculture, in which it produces year after year, instead of being worked out for a single harvest, though a rich one. But the more permanent and productive mines are the quartz-lodes of gold, silver, and copper, of which the entire range of the Rocky mountains and its various spurs seem to be full, focusing at certain points in surpassing richness. In every county of the Territory, with the possible exception of Dawson, the easternmost, these mineral veins are known to exist. They are best developed and most productive in Silver Bow county, of which Butte City is the center. The gross yield of the mines of that single county for 1883 was upward of $4,000,000. "The most careful recent estimate," says the Governor, "is to the effect that the yield of $10,000,000 of the present year will be increased for 1884 to $30,000,000 in gold, silver, copper, and lead."

It is estimated that over 20,000,000 pounds of copper will be shipped in 1884 from the mines at Butte, Silver Bow county.

Live-Stock.—The following shows the most recent returns of live-stock:

	Number.		Value.	
	1882.	1883.	1882.	1883.
Cattle.....	287,210	475,000	$4,699,812	$14,250,000
Sheep.....	362,776	700,000	1,018,124	2,100,000
Horses.....	67,000	90,000	8,197,020	6,787,000

Indians.—The Governor recommends the curtailment of the Indian reservations, which comprise nearly two fifths of the Territory, while the Indians number not more than 18,000. "Besides the matter of cutting down the Indian reservations," he says, "a heavy and pressing duty rests upon the General Government for their support and education. The great body of the Blackfeet, North Piegans, Assinnaboines, and Gros Ventres are even in a half-starved condition, owing to the failure and disappearance of the buffalo and other large game. These Indians must be supplied before spring, or they will have to choose the alternative of starvation or stealing the white man's cattle. They should be placed on smaller reservations, and be recompensed for the lands surrendered by supplies of stock, cattle and sheep in particular. The Flatheads on the Jocko reservation are well advanced in civilization and toward self-support. The disappearance of the larger game and the want already experienced make these Indians willing to exchange land for cattle, and anxious to cultivate the land."

Mormons.—There is a settlement in Deer Lodge county, and another in Gallatin county, of monogamic Mormons, expelled from Utah for their apostasy. Their numbers are small, they are industrious, good citizens, and they seek no proselytes; and their children, growing up under the training of the schools and in association with the citizens of the Territory, rise above and drift away from Mormonism.

MONTENEGRO (Cernagora, "Black Mountain"), a principality in eastern Europe. The government is an absolute monarchy. The legislative and executive powers, and the control of the revenue, remain practically in the hands of the Prince, though organic statutes of 1852, 1855, and 1879 introduced the representative principle in the form of a legislative body, called the State Council, of eight members, one half elected by the male inhabitants who bear arms or have done military service. The throne is hereditary by male primogeniture in the family of Petrovich Njegos, who liberated the country from the Turks, and was proclaimed Vladika, or Prince-Bishop, in 1697. Danilo I, who succeeded his uncle, Prince Peter, the celebrated poet and reformer, in 1851, abandoned the title of Vladika, and assumed that of Hospodar. He was assassinated, Aug. 13, 1860, and was succeeded by Nicholas I, the present reigning Prince. The inhabitants of Montenegro are divided into forty tribes, each governed by elected elders and a chief, called the Knjas, who acts as judge, and in time of war is the military commander. By the administrative statute of 1879, the country was divided into eighty districts and five military commands. There is no standing army, except the Prince's body-guard of one hundred men; but in case of war all Montenegrins are soldiers from the time when they can first bear arms until they have no more strength. The military population is divided into companies of a hundred men. Each military district furnishes a battalion, or two if it has more than eleven companies. The ministers are the sovereign's appointees on the Council of State.

Statistics.—The area is about 3,470 square miles. The population is officially reported as 236,000. With the exception of about 4,000 Catholics and as many Mohammedans, the people are adherents of the Greek Orthodox Church. There are about 2,000 Montenegrins in Austria, Turkey, and Russia, and a small number in Alexandria and San Francisco. The capital, Cettinje, has about 2,000 inhabitants. Podgoritza, Dulcigno, Niktchich, and Antivari are somewhat larger.

The exports are estimated at 2,000,000 florins ($1,000,000); they consist of rabbits and hares, cheese, fish, smoked mutton, wool, sumac, wine, fruits, etc. There are 444 kilometres (or 228 miles) of telegraphs.

Ministerial Changes.—During the insurrection in the Crivoscie and the Herzegovina in 1882, Prince Nicholas preserved an attitude which the Austrian resident minister, Col. Thömmel, reported to be perfectly correct, notwithstanding the dispatches of the commander of the Austrian forces, Baron Jovanovich, to the contrary. The sympathy of the Montenegrins for their kindred in the annexed provinces was too strong to allow the Prince to carry out any loyal intentions he may have had of preserving neutrality. The pretended military cordon was a fiction, for fugitives who were disarmed at the frontier were provided with weapons and ammunition again in the interior, and used Montenegrin territory as a base for their raids, until the Austrians established a cordon on their side, and thus crushed out the rebellion. This formidable frontier guard is permanently maintained. The Austrian party in Cettinje was headed by the Voyvode Mascha Vrebica, Minister of the Interior. The more powerful Russophile party had for its leader Bozo Petrovich, President of the Senate, a cousin of the Prince. The feeling against Austria became more decided when the Prince received in reply to his demand of indemnification for the support of the refugees, the answer from Vienna that he might keep them. The Austrian Government relented to the extent of amnestying all but the leaders of the Herzegovinians, who were glad to return to their fields. But the Crivoscians were left to encumber the scanty resources of the Cernagorans. Prince Nicholas, familiarly called Nikita, visited St. Petersburg later in the year, and returned the sworn ally of the Czar. After his return, the agitators, confined in compliance with Austrian demands, were set at liberty. Shortly afterward the Minister of the Interior was dismissed. Bozo Petrovich succeeded him as Minister of the Interior and became Minister President. The Minister for Foreign Affairs, Stanko Radonich, and the Finance Minister, Ilija Cerovich, sent in their resignations, but the former was retained.

Marriage of Princess Zorka.—The attention of Europe was attracted to the movements of the Servian pretender, Peter Karageorgevich, in the early part of the year. This prince had spent his life and dissipated his fortune in weak and hopeless attempts, instigated by Austria, to stir up a rebellion in Servia and regain his father's throne; he visited Montenegro and was received with many marks of cordiality and respect by Prince Nicholas. Prince Peter denied that his visit had any political significance, declaring that he came simply on a pious pilgrimage to the seat of his ancestors and the home of Servian liberty. The close and cordial relations between the Czar and Prince Nicholas were remarked at the coronation at Moscow, where the Cernagoran prince appeared by the side of the Czar as though he were a relative, and alone of all the foreign visitors received popular ovations. On August 10th, Peter Karageorgevich was given in marriage at Cettinje, Prince Nicholas's eldest daughter, Zorka. The Russian Government, according to rumor, furnished a handsome dower. The idea of a Great Servia, under Russian protection, is the chief aim of Russian activity in the Balkans. Prince Peter Karageorgevich's father was driven from the throne on account of his subservience to Austria. The same fate now threatened the house of Obrenevich. But the immediate recognition of Prince Peter's claims did not seem likely to be the object of Russia in taking him under her protection. From various expressions of Prince Nicholas, it appears that he has hopes of founding the kingdom of United Servia. Montenegro was the only Servian land not subjugated by the Ottomans. A Servian song says that, when Freedom deserted the Servians, she escaped to the crags of Cernagora.

Turkish Boundary Difficulty.—The Turkish boundary question was stirred up again in the early part of 1883, after resting since the end of 1880. The line drawn through the map by the plenipotentiaries at the Berlin Congress was even more difficult to establish than the new boundary of Greece. The delimitation was carried out in the main according to the Berlin Treaty before the naval demonstration of the powers in 1880, with the exception of the transfer of the districts of Plava and Gusinje, patrimonial possessions of the clans of the Hotti and Klementi. This transfer could not be effected without a bloody conflict with the then all-powerful Albanian League. The outcome of the intervention was, that Montenegro retained, in the place of those districts, the port and district of Dulcigno, which are more valuable than any of the lands ceded by the Berlin Treaty. The southeast boundary of Montenegro remained undetermined until the principality pressed for a settlement, and in January, 1883, the preliminaries were arranged between Bedry Bey, as Turkish plenipotentiary, and the Montenegrin commissioners. The settlement which they arrived at regarding the line to the northeast of Lake Scutari preserved the actual frontier, leaving the villages of Matagosh and Vladnia to Turkey, and Gosik, as well as the hill of Voina, which is of strategic importance for the defense of Podgoritza, in Montenegrin possession. The continuation agreed upon as far as Planinica corresponds with the line stipulated in the Treaty of Berlin, the boundary between the Kuchi Kraina and the Gruda and Klementi tribes.

The portions adjacent to Lake Scutari were transferred to the Montenegrin authorities, and occupied without difficulty. In the Kraina the delimitation agreed upon could not be carried out without a conflict. The Albanians gathered to resist the occupation with arms, but the Turkish military interposed and loyally assisted the Montenegrins to establish their authority after a severe skirmish. The Porte declared its willingness to evacuate the Ottoman portion of Kolashin, but when it refused to give up part of the Plava-Gusinje territory, Montenegro broke off the negotiations and appealed to the signatory powers. Upon receiving no answer to the first communication, of January 31st, it addressed a note of urgency to the powers, February 9th, declaring its intention to take forcible possession of Matagosh and Vladia, and asking for a decision of the boundary dispute. On February 11th the Gruda, Klementi, Kastrati, and Shkrieli clans met in Bessa and swore the *bessa* (blood-pact) against the Montenegrins and the Turkish troops, in case they should attempt to partition their lands. They showed their temper in two sanguinary skirmishes with the Turkish military in Scutari. The Albanians, with the experience of their race-kindred in Podgoritza to teach them, have stronger grounds than simple religious and national sentiment to resist being handed over to Montenegrin jurisdiction. The new code of laws, elaborated by Prof. Bogosich, can not counteract the national prejudices and propensities which refuse equal rights to Musulmans in Montenegro. Their lands and herds are divided up among Montenegrins on perpetual leases at arbitrary rentals which they are unable to collect, and they themselves are driven to emigrate, or expelled on a trumped-up charge of conspiracy, if other means fail.

Border Warfare.—A border war was carried on between the Albanians and Montenegrins for two or three months. Fierce skirmishes, which were no better than butcheries, took place all along the frontier, and a long list of blood-revenges was treasured up on both sides. Every Montenegrin fled from Scutari, and peaceful communications were entirely interrupted. At length, after a third note to the powers had failed to stir them from their apathy, the Montenegrin Prince fell in with the desire of the newly-appointed Vali of Scutari to put an end to the useless bloodshed by reopening negotiations. An interview was held at Rjeka, April 21st, in which the Vali, Mustapha Assim Pasha, said that the Klementi and

Hotti would never become Cernagoran subjects, and could not be made to abandon their pasture-lands without force, and that the Porte was not willing to carry on a military campaign against them to carry out uncertain provisions of the Berlin Treaty. Prince Nicola replied that these things should have been thought of before signing the treaty, that Montenegro had need of valley-lands, and that it had an historical claim to territory once peopled by Serbs and ruled by the Servian emperors. With that it was agreed to postpone discussion for several months, and leave the boundary controversy open while peace was being restored and friendly intercourse resumed. Mustapha Assim Pasha invited the Albanian chiefs to a conference to discuss measures of public safety, but the message was answered with a refusal. The chiefs of the Shoshi, Shallas, Marturi, Nikai, Gashi, Kastrati, and Hotti, all belonging to the Malissora group of tribes, communicated with the Mirdites, and the Luria, Matija, and Dibra-Posht tribes, with whom the *bessa*-oath had been taken. An assembly was held at Kastrati April 26th. Here it was resolved to revive the Albanian League. They swore together to resist any encroachment of Montenegro on Albanian territory, and the Ottoman authorities if they infringed on the rights of the tribes. No communications were to be held with the Vali. The Albanians sent for a large supply of cartridges for the Martini-Henry and Snyder rifles with which they were all armed. The Vali strengthened the garrison at Tusi, and upon his urgent request 6,000 Nizams were sent from Crete. The Porte admonished the new Vali to adopt conciliatory methods with the Malissora tribes. An obnoxious ordinance relating to the collection of the tax on cattle was revoked, but orders were given to collect the tax where the authorities had the power. This, and the firing upon the Djovanni, a branch of the Shoshi tribe, when they entered Scutari to purchase supplies, exasperated the Albanians. The unnecessary severity of the Vali in preventing the harboring of outlaws in Scutari drove a number of influential persons into the mountains to aid in the organization of the League. A proclamation was issued to the Hotti, Gruda, and Kastrati, May 19th, assuring them that the Sultan desired nothing but the conservation of their ancient customs and their submission to his authority. A deputation of the tribesmen met the Pashas at Scutari. Mustapha Assim Pasha declared that a regulation of the boundary-line was unavoidable. This question, the Albanian representatives replied, could only be considered by a council of all the tribes. From the general council the answer came that the Albanians had for four hundred years given proofs of their readiness to give their lives for the Padishah, and that they would not enter into negotiations with the Government, which had often deceived them, unless they had a guarantee that the Government would not demand the cession of their territory to their mortal enemies. The Vali then announced that the regulation of the boundary would be carried out—with force, if necessary. The League held an assembly at Rabshi, May 25th, which resolved to send armed men into the disputed district to be ready for eventualities.

On the night of June 1st they took Tusi by surprise, captured all the military stores, disarmed the garrison, and sent the troops to Matagosh. A simultaneous attack upon Helmi was frustrated through the vigilance of the garrison. Hafiz Pasha, with a body of Cretan Nizams, marched against the Albanians. He was preceded by a deputation of notables of Scutari, who brought back word that the troops would not be allowed to enter the territory of the tribes. When the Turkish troops appeared, the Albanian outposts opened fire. The Nizams advanced to the village of Kastrati, where a desperate fight of several hours' duration took place. The steam ironclad and gunboats on Lake Skadar bombarded and destroyed the village. The next day, in order to gain time for re-enforcements to come up, Hafiz Pasha resumed negotiations. In the night of the 2d, contingents of the Hotti, Shalla, and Shoshi tribes came to the aid of Kastrati. Abdul Aga, the Hotti chief, took command and ordered an attack. The battle lasted from morning till night. More than 500 dead and wounded covered the field. A truce was called on the 5th for the burying of the dead, but a conflict took place between the Albanian re-enforcements, who were hurrying to the scene of conflict, and the Posripa tribe. The latter joined the League after their chief had fallen. On the 6th hostilities were renewed in the vicinity of Shiptzanik, where the Albanians had intrenched their camp. The battle was decided by the Krupp artillery of the Turks, and in the afternoon the Albanians retreated in good order toward the northeast into the district of the Hotti. Hafiz Pasha advanced on his march to Tusi. The next morning he was again set upon by Abdul Aga's bands near Hum. In a furious hand-to-hand combat hundreds fell on both sides. Although terrible damage was inflicted on the Turks, his own forces were so weakened that the Albanian commander retreated into the mountains.

On the 9th Hafiz Pasha reached Tusi, but could not retake the fort without re-enforcements. Mustapha Assim Pasha was preparing to march into the field in person, when lightning struck the powder-magazine at Scutari, June 8th, and destroyed the whole supply of ammunition. On the night of the 9th some bands of the Skreli crept up to the intrenchments with which Hafiz had surrounded his camp, and from under the cover of the trees opened fire. In the darkness the Turks fought with one another, killing and wounding 300, while the Albanians disappeared. When the Pasha made ready on the 11th to proceed to Tusi, he found the road blocked by superior numbers of the mount-

aineers. He concluded, therefore, to make secure his communications with the coast and relieve Fort Helmi, which was besieged by 1,000 Klementi. With his four or five battalions of available troops he was unable to penetrate to the besieged garrison, which suffered for want of food and water. After a couple of days of skirmishing, finding himself nearly surrounded by the Albanians, who were continually receiving re-enforcements, the Turkish commander decided to give battle rather than retreat across Lake Scutari. On the 14th and 15th the Turkish Nizams fought with desperate courage. Many hundreds of corpses covered the field. Three Krupp guns were captured by the Leaguers. Hafiz Pasha then sent a message, proposing a truce and negotiations, to the Albanian leaders, Abdul Aga Hotti and Dod Prechi. The latter refused to treat, knowing that it was only a *ruse* to gain time for re-enforcements. Hafiz Pasha then crossed the lake in a sail-boat and returned on the 17th with three battalions. His troops had defended themselves with difficulty against incessant attacks. With the fresh troops Hafiz again took the offensive, and in an eight hours' battle compelled the League troops to retire. These battles cost the Turks over 1,200 men; the Albanians reported their loss as 800.

Marching farther, Hafiz Pasha encountered the Malissori near Shin Mari, where his army was again surrounded. The Albanians were rendered savage and desperate by the ruthless acts of the Turks, who burned all the villages and farm-houses on their way. The Turkish troops fought their way through after a day and a night of fighting, but left several hundred dead on the battle-field and 50 captives in the hands of the Albanians. Another Turkish detachment under Shaban Bey was defeated on the 16th and 17th, with a loss of 250, near Tusi, which place was burned by the Albanians. On the 18th two battalions of Nizams came up, with four guns, whereupon the Albanians retreated into the district of the Hotti.

Forced back in front by Hafiz Pasha and on the flank at Tusi, the Albanians retired into their mountains and confined themselves to defending the defiles of approach. The Turkish commander pitched his camp near Spinje and opened negotiations, on the basis of instructions from Stamboul, for the subjection of the insurgents. The latter, who were encamped in the approaches to Gruda, suffered from the want not only of ammunition, but of food, as their herds were in Mirdita or far away in the mountains. Hafiz Pasha demanded unconditional surrender, but promised the tribes complete amnesty and the confirmation of their ancient rights. Recently the Vali, Mustapha Assim Pasha, had called upon the Kastrati chief Dod Bachir, whose lands were in the ceded territory, to help effect the peaceable transfer, and the latter accompanied his refusal with an expression of amazement that the Porte should wish to get rid of loyal subjects by force. The League commanders, Abdul Aga Hotti, Nicol Mirasi, and Shaban Smaku, refused to deliver up the leaders, but agreed to surrender on the condition that the integrity of their territory was guaranteed, and that they should be left free to defend it eventually against the Montenegrins. Hafiz Pasha rejected the conditions, and left them another week to consider. As a proof of his determination, he burned the rest of the villages, and destroyed the growing corn and gardens. The League renewed its appeal to the representatives of the powers at Scutari, getting no encouragement with regard to the boundary question, but receiving a promise to intercede with the Turkish authorities and endeavor to induce them to proceed less barbarously. As the result of their efforts, the Vali went among the insurgents and proclaimed the intentions of the Porte to grant an amnesty and indemnity for the destroyed property. Hafiz Pasha, who had received large re-enforcements, began strategic operations, which led to fresh skirmishes, in which the Turkish artillery carried the day. A demand for the surrender of the chiefs of the rebellion was again refused, but the Albanians continued negotiations.

A deputation of the League then went to Montenegro and opened secret negotiations with the Government. They proposed that Montenegro should assume a protectorate over all the Malissori tribes, which should be gradually extended over the whole Ghegi territory; that the Montenegrins should confirm their particular rights, respect their religion, and not interfere in their administration further than was the practice with regard to the tribes that were already subject to the Montenegrin rule. In return, the Albanians promised to aid the Montenegrin Government in war, in the same way as they have the Porte, to pay the same contributions that they have to the Porte, and to annul all existing blood-oaths. These unexpected propositions were at first received favorably by the Montenegrins, though the scheme could not have been definitely settled, as Prince Nicholas was absent in Paris. Hafiz Pasha, growing impatient, pressed for a decision, and received the answer that the Albanians would not deliver up their chiefs, but that if he attacked them again, they would go over to the principality of Montenegro.

The Leaguers relied on the experience of the Turks of their ability to defend the passes of the mountains indefinitely and with little difficulty. With their old muzzle-loading muskets this was possible. But they had not learned to make the cartridges for the Martini-Henry and Snyder rifles, with which they were now armed, and, although they had friends enough in Scutari, it was useless to attempt to get cartridges in any quantity, first through the custom-house and then out of the city and through the Turkish lines. The suppression of the rebellion was only a matter of time. First the Kastrati, whose villages were burned, sent back

the arms which they had captured from a transport and made their submission. The leaders either joined the Skreli or fled to Montenegro; their houses were fired and their cattle confiscated. The Shalli and Shoshi, who had attacked the garrison of Scutari in April, were excluded from the amnesty. In July an expedition was undertaken against these tribes and against the Skreli, who were responsible for the murder of Salih Aga. The Skreli sent a deputation, offering to yield to the demands of the Government. Hafiz returned to Tusi and sent word that the murderer of Salih Aga must be surrendered and the chiefs come to Scutari to receive the commands of the Vali. The tribe refused these terms, and Hafiz again set out with six battalions and four mountain-guns. Three sharp skirmishes took place, in which the Skreli were victorious. Yet when the Shalla and Shoshi, after hearing of the submission of all the other tribes, also accepted the amnesty, the Skreli withdrew to distant fastnesses in the hills, whither Hafiz Pasha had no inclination to follow them, content with having secured the rectification of the frontier, and pacified the neighborhood of Lake Scutari. The deputations of the Shalla and Shoshi were well received by the Vali, and the Stamboul authorities were so gratified at the favorable termination of the difficulties that they imposed no ransom for the attack on Scutari. Their leaders escaped into the Herzegovina. All the tribes were commanded to deliver up to the Government the weapons it had furnished them at the time of the Russian war and during the conflict with the great Albanian League, a mandate to which no attentiou was paid. On the 10th of August Hafiz Pasha made his triumphal entry into Scutari.

The Porte was informed betimes of the secret offer of the Malissori tribes to accept a Montenegrin protectorate, which was made in June. Engagements were said to be entered into with the Cettinje Government to avert this, but the substance of the promises has not been divulged. Prince Nicholas visited Stamboul soon after, and was received with great hospitality and distinguished honors by the Sultan. He is the first prince of the Cernagorans who has paid a visit to the Padishah since the foundation of the principality. This event made a profound impression on the Albanians, who for centuries have been accustomed to regard the Turks and Montenegrins as irreconcilable enemies. At this interview the boundary dispute, after years of diplomatic controversy, was settled in an hour between the heads of the two states. The Prince of Montenegro was persuaded to relinquish his claims to the lands of the Hotti and Kastrati, who retain their pastures undivided. In compensation, Montenegro receives accessions of territory in the Plava and Gusinje districts.

The delimitation commission met directly after the return of Prince Nicholas. The line northeast of Lake Scutari to Gradishte was fixed. The district of Planinica as far as Mocha, and thence to Mojkovac on the Tara, which is the terminal point of the delimitation, was not marked out by the end of the year.

MORGAN, Edwin Denison, an American merchant, born in Washington, Berkshire county, Mass., Feb. 8, 1811; died in New York city, Feb. 14, 1883. At the age of seventeen he entered the store of his uncle, Nathan Morgan, with whom, in about three years, he became a partner. In 1836 he removed to New York, and engaged in business on his own account, as a grocer, in Front street. From that time till the date of his death his life may be divided into three periods. The first embraced about twenty years, during which he was most active and energetic as a merchant, extending his operations to distant lands, and becoming well known as a successful importer. His connection with the firm of E. D. Morgan & Co., as senior partner, was continued through various changes in its organization, and only ceased with his death. For another period of about twenty years, including a portion of the years allotted to his active business career, he was largely identified with the political life of his adopted city and State, and of the United States —being at one time a member of the Board of Aldermen of New York; twice State Senator; a delegate to the conference assembled at Pittsburg in 1856; chairman of the convention that followed at Philadelphia, and afterward chairman of the National Republican Committee; twice Governor of the State of New York; and, finally, a member of the United States Senate. During the term for which he was elected to this last high office he was never once absent from a meeting of the Senate, and was one of its most efficient working members.

On the conclusion of his term, in 1869, the ex-Senator directed his energies largely to the various institutions with which he was connected as a director, notably with the National Bank of Commerce, the United States Trust Company, the Lake Erie and Western Railroad Company, and the Western Union Telegraph Company. He was for many years President of the Woman's Hospital of New York, and associated with many charitable associations, to all of which he was a liberal benefactor. He gave $100,000 to Williams College, and a like sum to the Presbyterian Theological Seminary. In his long, active, and varied career as merchant, statesman, and trustee, he enjoyed a high character for integrity, ability, and sound judgment, commanding in all these various relations the entire confidence of his fellow-citizens. He was twice tendered the office of Secretary of the Treasury, but declined it. His appointment by President Arthur was confirmed by the Senate, but the office was refused because of age and increasing infirmities. His interest in politics did not cease with his retirement from the Senate, but his counsel was always at the command of those

filling the highest offices in public life. In the critical period of our civil war, during which he was Governor of New York, his services were as important as those of any other Governor, and contributed largely to the final success of the national cause. He was tendered by President Lincoln the appointment of major-general of volunteers, and accepted the rank, but declined any compensation for services. A memorial volume, with a fine portrait, was printed privately by his widow, who, with an only grandchild, survives him.

MORRILL, Lot M., an American lawyer, born in Belgrade, Maine, May 3, 1813; died in Augusta, Maine, Jan. 10, 1883. He entered Waterville College (now Colby University) in 1835, but did not remain through the year. He then studied law, and in due time was admitted to the bar. One of his fellow-attorneys was Timothy O. Howe, with whom he was later associated in the United States Senate. He removed to Augusta, established himself in practice, and took the lead in the Democratic party in Maine. In 1854 he was elected to the Legislature, where he gained much reputation; and on his re-election in 1856, he was chosen President of the Senate. In 1855 Mr. Morrill denounced the course of his party on the question of slavery in Kansas, and severed his connection with his former associates. He was nominated in 1857 by the Republicans for Governor, and was elected by over 15,000 majority. His administration was very successful, and he was twice re-elected; and he served his native State in that office during the years 1858–'60.

In 1860 Senator Hamlin was elected Vice-President of the United States, whereupon Gov. Morrill was chosen by the Legislature to serve during the remainder of Hamlin's term. He entered the Senate Jan. 17, 1861, and was placed on important committees. He attended the "Peace Conference," from which much was hoped, but which led to no beneficial result. During the two years that followed, Morrill took an active part in public affairs, and in 1863 he was elected Senator for the term ending in 1869. He was chairman of the Committees on Expenses, on the District of Columbia, on Appropriations, and on Indian Affairs. In the Republican caucus for a successor, Mr. Morrill was defeated by a single vote; but, as Senator Fessenden died in 1869, Morrill was appointed to serve out the remainder of Fessenden's term. In 1871 he was again elected Senator, and in the discharge of his duties devoted much attention to financial questions. He was what was called a "hard-money" man, and voted against the bill for inflating the currency, which was vetoed by the President, and voted in favor of the resumption act of 1875. He was noted as being a steady, hard worker in committee-rooms, and was especially familiar with naval and Indian affairs.

On Secretary Belknap's resignation, President Grant asked Senator Morrill to take a seat in the Cabinet, but he preferred to remain where he was. In June, 1876, his name was sent in by the President for the Treasury Department, and he was immediately confirmed. During the few weeks before entering upon his new and important duties, he was busily engaged in looking after the appropriation bills. He was chairman of the Senate Committee on Appropriations, and strained every nerve to carry these important measures. He bade farewell to the Senate on July 6th.

As Secretary of the Treasury Mr. Morrill was able and energetic, and gave very general satisfaction. He was familiar with all government business, was inflexible and resolute in enforcing the laws, and showed that clear common sense which is always popular in a minister of finance. In November, 1876, while in New York, he made an address to the moneyed men of the metropolis, from the steps of the Sub-Treasury Department, which proved effective and well-timed. His annual budget, in December of the same year, was very straightforward, and gave a clear presentation of the financial condition of the nation. He urged immediate and yet gradual contraction of the currency, and declared that specie payments could be resumed in 1879. His recommendations had the merit of simplicity and directness. He asked Congress to give him authority to fund greenbacks at his discretion, in 4½ per cent. thirty-year bonds, and to compel the national banks to accumulate coin.

When Mr. Hayes became President, in 1877, he offered Mr. Morrill a foreign mission; but it was declined. He was appointed, in March, Collector of Customs for Portland and Falmouth district, Maine, which post he held at the time of his death. On getting back to his native State, he took but little active interest in politics. His health became infirm, and he suffered greatly from inflammation of the stomach. In his last illness, attended by his wife and family, he sank quietly and peacefully to rest. Although not to be called eloquent in speech, or brilliant in debate, he was always earnest, clear, and sensible. With a fine head and an impressive air and manner, Mr. Morrill rarely failed to convince his hearers that the measures he advocated were judicious and sound in principle.

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NEBRASKA. State Government.—The following were the State officers during the year: Governor, James W. Dawes, Republican; Lieutenant-Governor, Alfred W. Agee; Secretary of State, Edward P. Roggen; Treasurer, P. D. Sturdevant; Auditor of Public Accounts, John Wallichs; Attorney-General, Isaac Powers, Jr.; Superintendent of Public Instruction, W. W. W. Jones; Commissioner of Public Lands, A. G. Kendall. Supreme Court: Chief-

Justice, George B. Lake; Associate Justices, Amasa Cobb and Samuel Maxwell.

Legislative Session.—The Legislature, containing 15 Republicans, 11 Democrats, 6 Anti-Monopolists, and one Greenbacker in the Senate, and 55 Republicans, 26 Democrats, 16 Anti-Monopolists, and 3 Independents in the House, convened on the 2d of January, and adjourned on the 26th of February. On the 4th of January, Gov. Dawes delivered his inaugural address, from which the following are extracts:

There is an evil of considerable magnitude which of late years has prevailed in many localities of our State, to the great injury of large numbers of our people. I refer particularly to the sale of fraudulent patent rights and of stock in fictitious corporations, by which unsuspecting persons have been induced to make worthless purchases, and give in payment their negotiable promissory notes, which, by a transfer to innocent holders, they were finally compelled to pay. There seems to be a well-founded doubt in the minds of many whether, in the present condition of our criminal law, such fraudulent practices can be reached and punished. I would, therefore, respectfully suggest the propriety of incorporating into the law a suitable provision remedying this defect.

Article XI of the Constitution, sections numbered four and seven, reads as follows:

"SECTION 4. Railways heretofore constructed, or that may hereafter be constructed in this State, are hereby declared public highways, and shall be free to all persons for the transportation of their persons and property thereon, under such regulations as may be prescribed by law. And the Legislature may from time to time pass laws establishing reasonable maximum rates of charges for the transportation of passengers and freights on the different railroads in this State. The liability of railroad corporations as common carriers shall never be limited.

"SECTION 7. The Legislature shall pass laws to correct abuses and prevent unjust discrimination and extortion in all charges of express, telegraph, and railroad companies in this State, and enforce such laws by adequate penalties to the extent, if necessary for that purpose, of forfeiture of their property and franchises."

These citations are made for the reason that I wish to bring before your minds the fact that by virtue of these provisions the people have reserved to themselves absolute power in all matters pertaining to the correction of abuses, extortions, or unjust discrimination on the part of railroads or other corporations.

On the 31st of January, Charles F. Manderson (Republican), on the seventeenth joint ballot, was chosen United States Senator. The vote was as follows:

C. F. Manderson, 75; J. H. Stickel, 20; James E. Boyd, 17; J. S. Morton, 14; C. H. Brown, 5; A. H. Connor, 1; D. M. Nettleton, 1. Total, 133.

Among the acts of the session were:

Joint resolution to Congress praying for the abolishment of tolls on the railroad-bridges spanning the Missouri.

Authorizing counties to issue bonds for refunding their bonded indebtedness, and provide for registering and certifying the same, and for levying a tax to pay interest and principal thereof.

To provide additional remedies for enforcement of judgments and orders for alimony and maintenance.

Amending section 4, chapter 55, compiled statutes, by adding the following: "Persons who can show documentary evidence that they have passed a satisfactory examination before medical boards of other States created for the purpose of such examination, and all surgeons or assistant surgeons who were commissioned and served as such in the late war of the rebellion."

Joint resolution to Congress requesting such legislation as will compel railroad companies to take out patents and pay taxes on lands granted them by the national Government.

For the security of guests and lodgers in hotels against injury by fire.

Apportioning the State into ten judicial districts.

Prohibiting the uttering of false pedigrees of stock.

To protect butter and cheese manufacturers.

Requiring county treasurers to publish a tabulated statement of the affairs of the office in June, 1883, and January, 1884, and semi-annually thereafter.

For the incorporation of churches, parishes, and religious societies.

Amends section 11, chapter 50, compiled statutes, "Liquors." The amendment is the old section with the following added: "Provided, that any person or persons shall be allowed to sell wine made from grapes grown or raised by said person or persons on land belonging to or occupied by said person or persons in the State of Nebraska, the same to be sold in quantities not less than one gallon, without procuring the license provided for in this chapter."

Prohibiting extortion and discrimination in the transmission of telegraph dispatches.

Amending the Constitution in regard to the Legislature. Members will remain in office two years, and receive a salary of $300, and ten cents mileage both ways. Regular sessions to continue sixty days. No bills to be introduced after the fortieth day, except in response to a special message from the Governor.

Prohibiting the fraudulent transfer of property.

To prevent beginning of round-up of cattle till after the 15th day of May.

To protect the health of female employés, by compelling employers to provide chairs for their female employés.

For the protection of inmates of the Hospital for the Insane; providing that every inmate shall be allowed to write one letter a week and have it posted without censorship of officers.

Appropriating $50,000 for the erection of a new building, and for repairs and improvements of the Nebraska State Reform School. One-fourth-mill tax to raise money.

Capitol appropriation bill; provides for taking down the old building, and makes a half-mill tax.

Prohibiting the importation, selling, or running at large of domestic animals afflicted with any contagious disease.

Several bills for the regulation of railroads were introduced, but none was passed.

Party Conventions.—The Democratic State Convention met in Omaha, on the 29th of August. James W. Savage, of Douglas county, was nominated for Justice of the Supreme Court; and J. M. Woolworth, of Douglas, E. R. Daniels, of Madison, and G. W. Johnston, of Fillmore, for Regents of the University.

The platform declares against protective tariff, against prohibitory liquor laws, against encroachments of corporate capital, and against free passes.

The Republican State Convention met in Lincoln, on the 26th of September. The following is the ticket nominated: For Judge of the Supreme Court, M. B. Reese, of Saunders county; for Regents of the University (long term), Milton J. Hull, of Clay, and John T. Mallalieu, of Buffalo; for Regents of the University (short term), Jesse M. Hiatt, of Harlan, and Ed. P. Holmes, of Pierce.

The platform declares for protective tariff,

for a constitutional measure to prevent discrimination by railroad and telegraph companies, for the reclamation of lands granted to railroads but not earned by them, and approves the administration of President Arthur.

The Anti-Monopolists indorsed the Democratic ticket in part, and nominated David Butler, Amos Dean, and J. F. Merritt for Regents.

Election Returns.—At the election in November, the Republican ticket obtained a majority. The vote was as follows:

	Judge.
Reese, Republican	52,905
Savage, Democrat and Anti-Monopolist	47,795

REGENTS, LONG TERM.

Hull, Republican	56,381
Mallalieu, Republican	56,961
Daniels, Democrat	41,998
Butler, Anti-Monopolist	13,172
Woolworth, Democrat	31,097

REGENTS, SHORT TERM.

Hiatt, Republican	56,427
Holmes, Republican	56,445
Dean, Anti-Monopolist	34,464
Merritt, Anti-Monopolist	16,511

For District Judges, Democrats were chosen in the First and Seventh districts, and Republicans in the other eight.

NETHERLANDS, THE, a constitutional monarchy in Western Europe. The Constitution, proclaimed Nov. 3, 1848, vests the legislative authority in the States-General, composed of two chambers. The executive authority is exercised through a council of eight ministers.

The Government.—The reigning King is William III, born Feb. 19, 1817, who succeeded his father, William II, March 17, 1849. The heir-apparent is Alexander, Prince of Orange, born Aug. 25, 1851. The ministry is composed of the following members: Minister of Foreign Affairs, Dr. P. J. A. M. van der Does de Willebois; Minister of the Interior, Dr. J. Heemskerk Az; Minister of Justice, Dr. Baron M. W. du Tour van Bellinchave; Minister of Finance, W. J. L. Grobbee; Minister of the Colonies, F. G. van Bloemen Waanders; Minister of the Waterstaat, Commerce, and Industry, J. G. van den Bergh; Minister of War, Major-General A. W. P. Weitzel; Minister of Marine, Vice-Admiral F. L. Geerling.

In consequence of the Cabinet changes, the Stadtholder-General of the East Indies, Frederik s'Jacob, resigned late in December.

Area and Population.—The area of the Netherlands, which are divided into eleven provinces, is 12,648 square miles. The population on Dec. 31, 1879, when the last census was taken, was 4,012,693. The computed population at the same date in 1882 was 4,172,971. The number of marriages in 1882 was 29,565; births, 153,900; deaths, 93,396. In 1879 the population was divided as to religion into 2,469,814 Protestants, 1,439,137 Catholics, 81,693 Israelites, and 22,049 of other faiths. The cities of over 100,000 inhabitants were: Amsterdam, with 350,201; Rotterdam, with 162,140; and the Hague, with 127,931.

Finances.—The following statement gives the expenditures and receipts as set down in the budget of 1883:

EXPENDITURES.	Guilders.
Royal household	750,000
Cabinet	625,161
Foreign Affairs	700,114
Justice	5,468,523
Interior	12,800,895
Marine	12,819,955
War	22,298,784
Public debt	30,381,294
Finance	8,498,915
Payment to communes	9,166,000
Worship	2,007,183
Colonial administration	1,152,572
Waterstaat, etc	19,102,071
Railroads	14,500,000
Total	139,265,967

RECEIPTS.	Guilders.
Land-tax	10,955,770
Personal tax	10,416,000
Patents	4,198,400
Spirits	22,000,000
Other excise duties	17,175,000
Stamps, etc	24,790,000
Customs, etc	4,712,000
Plate and jewelry guarantee	311,100
Domains	2,100,000
Post-Office	4,650,000
Telegraphs	1,080,800
Lottery	430,000
Hunting and fishing licenses	145,000
Pilotage	1,002,000
Mining royalties	3,105
Railroads	2,121,000
Miscellaneous	4,561,525
Total	110,601,700

The expenditure for the colonies entered in the budget refers to the central administration of the West Indies and Surinam. The East Indies have a separate budget, voted by the States-General.

In 1883 the public debt amounted to 989,703,350 guilders, not including 10,000,000 guilders of paper money. The interest on the debt in 1883 amounted to 29,285,894 guilders; the sinking-fund charge to 1,045,400 guilders. The total amount of the debt in 1882 was 931,308,450 guilders. The new loan of 60,900,000 guilders was issued at 98¾. A certain amount is to be paid off annually, after four years, the numbers of the bonds called being drawn by lot, and the whole extinguished in fifty-six years.

Army and Navy.—The army was reorganized in 1881 by introducing the German system of conscription. It is recruited partly by enlistment and partly by conscription. The conscripts remain with the colors twelve months, and, for the rest of their five years of service, are called out for six weeks annually. Besides the regular army, there is a militia, called the Schutterzen, divided into two classes, the active, composed of men between twenty-five and thirty-five years of age, and the sedentary, from thirty-five to fifty-five. The regular army numbered 2,326 officers and 62,684 men. Of the latter, 42,839 were infantry, 8,987 cavalry, 1,433 engineers, 13,291 artillery, and 441 special. The active Schutterzen numbered 28,600, and the sedentary 40,000 men.

The army of the East Indies is entirely dis-

tinct. It is recruited exclusively by enlistment among Europeans or natives. In 1882 the effective was 1,372 officers and 30,933 men, of which latter, 14,524 were Europeans and the remainder natives.

The navy in July, 1883, consisted of 23 ironclad vessels, 95 other steamers, and 20 sailing-vessels. The largest ironclad, the Koning der Nederlanden, has 8½-inch plates, and carries four 35-ton guns. It has two turrets, as has the Prince Hendrik, carrying four 12-ton guns, a ram of great speed. There are four other ram-bowed vessels ranked as first-class ironclads, all with a single turret, besides the De Ruyter, a monitor ram with a battery of 14 guns in a single turret. There are thirteen second-class ironclads, slow monitors intended for coast-defense, all built on the same model, with 5½ inches of armor and two 12-ton guns. In the East Indies are a number of armed steam and sail vessels in the maritime police service.

Commerce.—The total value of the special imports in 1881 was 865,568,000 guilders, as compared with 782,591,000 guilders in 1880; of the exports, 647,975,000 guilders, as compared with 582,684,000. Including the commerce with the Dutch colonies, the total imports in 1881 amounted to 919,671,000 guilders; exports, 690,385,000 guilders. Of the imports in 1881, 267,770,000 guilders came from Germany, 244,325,000 from Great Britain, 111,087,000 from Belgium, 60,753,000 from the United States, 53,022,000 from Java, 46,635,000 from Russia, 37,363,000 from British India, 20,942,000 from the German free ports, and 20,104,000 from France. Of the exports, 291,114,000 guilders went to the German Zollverein, 159,810,000 to Great Britain, 109,399,000 to Belgium, 42,092,000 to Java, and 16,360,000 to the United States. The imports of cereals in 1879 amounted to 166,200,000 guilders; exports, 108,800,000; imports of colonial produce, 85,000,000 guilders; exports, 32,700,000; imports of coal, 35,100,000 guilders; imports of metals, 108,200,000 guilders; exports, 66,900,000; imports of hides and leather, 25,800,000 guilders; exports, 24,100,000; imports of textile materials, 36,400,000 guilders; exports, 38,500,000; imports of yarns, 43,600,000 guilders; exports, 26,300,000; imports of textile fabrics, 34,700,000 guilders; exports, 21,100,000; imports of drugs, dyes, and chemicals, 66,900,000 guilders; exports, 54,100,000; imports of oils, etc., 49,700,000 guilders; exports, 31,900,000.

The mercantile marine consisted on Jan. 1, 1882, of 751 sailing-vessels, of an aggregate capacity of 615,602 cubic metres, and 86 steamers of 241,321 cubic metres.

Railroads.—The length of railroads in operation on Jan. 1, 1883, was 2,022 kilometres, or 1,260 miles, of which 1,056 kilometres belonged to the state, and 966 kilometres to private companies. The total earnings of the private lines in 1880 were 17,167,424 francs; expenses, 11,858,353 francs. The total outlay on the Government lines up to June, 1881, was 176,339,544 francs.

Telegraphs.—The length of telegraph lines on Jan. 1, 1883, was 4,132 kilometres; length of wires, 15,486 kilometres; number of dispatches in 1882, 3,364,612, of which 2,009,297 were internal, 1,323,974 foreign, and 31,341 official. The receipts were 1,071,608 guilders; ordinary expenditures, 1,477,015 guilders; extraordinary, 102,395 guilders.

Mails.—The number of private letters sent through the post-office in 1882 was 45,978,611 domestic, and 13,850,420 foreign; postal-cards, 18,723,366; total, 78,552,397. The number of newspapers was 42,300,965. The receipts amounted to 4,590,540 guilders; expenses, 3,311,375 guilders.

Colonies.—The colonial possessions of the Netherlands have an aggregate area of 659,126 square miles, and contain a total population of 25,530,426.

The immigrant and European population of all the East India possessions, including that of Java, was in 1880 as follows: Europeans, 41,676; Chinese, 343,793; Arabs, 16,025; Hindoos and others, 9,119. The capital of the Dutch East Indies is Batavia, which had in 1880 96,957 inhabitants. Samarang contained 68,551; and Soerabaya, 122,234.

Java produces, for the benefit of the Netherlands, a large surplus revenue, after paying for its own government. Most of it is obtained by the sale of a vast amount of colonial produce, grown under the "culture system."

The budget for 1883 gives these receipts:

	Guilders.
In Holland:	
Sales of coffee	34,840,908
Sales of cinchona	145,085
Sales of tin	5,422,326
Railroads	1,165,000
Other receipts	715,531
In the East Indies:	
Sales of coffee	8,164,700
Opium	18,780,000
Leases of public lands	18,652,000
Customs	9,651,000
Salt duty	7,080,500
Posts and telegraphs	1,258,500
Railroads	8,156,000
Other receipts	30,231,992
Total	139,288,492

About one third of the annual expenditure is for the army and navy, and one third for the general administration, in Java and the Netherlands. The expenditure is stated at 24,388,492 guilders in Holland, and 123,311,629 guilders in the East Indies, making a total of 147,700,121 guilders, and showing a deficit of 8,461,629 guilders.

The exports of the Dutch East Indies in 1880 were of the total value of 178,954,000 guilders, of which 141,777,000 guilders were exported by private individuals and 37,177,000 guilders by the Government. The total exports in 1879 amounted to 175,745,000 guilders. The total imports in 1880 were 173,414,000 guilders, 157,474,000 on private and 15,940,000 on Government account, against the total of 154,652,000 guilders in 1879.

The aggregate tonnage of vessels entered in 1880 was 1,855,631; cleared, 1,779,305. The tonnage of the colonial fleet in 1880 was 146,-110 tons; in 1881, 143,317 tons.

The colony of Surinam, or Dutch Guiana, has an area of 46,060 square miles, and a population of 69,856. The West India islands belonging to Holland are: Curaçoa—area, 210 square miles; population, 24,507. Aruba—area, 69 square miles; population, 6,193. Bonaire—area, 95 square miles; population, 5,060. St. Martin—area, 17 square miles; population, 3,236. St. Eustace—area, 7 square miles; population, 2,258. Saba—area, 5 square miles; population, 2,202.

Ministerial Crisis.—In March the Van Lynden ministry, after an adverse vote, February 26th, of 66 to 2 votes on the proposition to reduce the limitation of the franchise, determined to hand in their resignation. The Opposition was made up of the Catholic and ultra-Protestant parties, and the object of the votes was to prevent the reform of the electoral laws which was demanded by all the Liberals. Dr. Heemskerk got together a Cabinet after several weeks. His own group counted only a half-dozen votes; but the Liberals were split into two irreconcilable factions. The new ministry was composed mostly of men outside of Parliament and not known to politics.

Legislation.—During the Cabinet crisis, legislation went on without interruption. The proposition for a new loan was approved, though the rate of interest was fixed at 4 instead of 3 per cent., as intended by the Government. The terms were so attractive that twelve times the 60,000,000 was subscribed. The North Sea fishery treaty, framed the previous year by a conference of the interested powers, was approved. The project of a new canal, to connect Amsterdam with the Rhine, was confirmed in the form proposed by the passage of an expropriation act. The new Conservative ministry applied themselves to the task of regulating the disordered finances of the country. The expenditures for the colonies were to be reduced, except those for Curaçoa, which are somewhat increased. It was proposed to revive the timber duties and increase the spirit and tea duties; but only a part of the new imposts were approved by the Chamber. The catastrophe in northern Java, and epidemics among human beings and animals in the East Indies, increased the difficulties of the Government.

The question of a revision of the Constitution was before the country, but the Liberals could not agree as to the extent of the reform. In the elections of half the members of the Second Chamber in June, the Liberals, who could not agree on the question, lost three seats, electing only 18, while the Conservatives elected 24 members. The two sections of the Left still commanded a majority in the Second Chamber. By the provincial elections, which were held later, the large Liberal majority in the First Chamber was not diminished. The points in which the Liberals proposed to alter the Constitution were to make the law of succession to the throne clear and complete, to empower the Council of State to speak out independently in administrative affairs, to abolish the electoral cense and substitute an intellectual qualification, and to reduce the terms of representation, so that the States-General will be entirely renewed within the period of five years; further, the complete introduction of universal personal military service, the abolition of the oath, and an easier process for revising the Constitution. The new ministry upon assuming office appointed a commission to study the question of revision.

War in Atcheen.—The war in Sumatra was continued, and no important success was achieved by the Dutch soldiers. The natives were armed with excellent rifles, obtained from trading-vessels. The woods and hills of northern Sumatra were favorable for guerilla warfare. The leader of the rebels, the Rajah Njay Hassan, refused the terms which were offered, and demanded the return of the disputed territory, and the payment of 5,000 guilders.

(For an account of the International Exhibition at Amsterdam, see WORLD'S FAIRS.)

NEVADA. State Government.—The following were the State officers during the year: Governor, Jewett W. Adams, Democrat; Lieutenant-Governor, C. E. Laughton; Secretary of State, J. M. Dormer; Treasurer, George Tufly; Comptroller, J. F. Hallock; Attorney-General, W. H. Davenport; Superintendent of Public Instruction, C. S. Young; Surveyor-General, C. S. Preble. Judiciary, Supreme Court: Chief-Justice, Thomas P. Hawley; Associate Justices, O. R. Leonard and C. H. Belknap.

Legislative Session.—The Legislature convened on the 1st of January, and adjourned on the 1st of March. Ninety-three laws were passed, among which were the following:

Consolidating Washoe and Roop counties under the name of Washoe.

Defining the rights of husband and wife.

For the prevention of fraud and the better protection of miners in the sale and purchase of ores.

To enable mining corporations to consolidate, and defining the manner of such consolidation.

Providing for the taxation of mines that produce a ton or less of ore or mineral-bearing material per day, and to encourage the prospecting of undeveloped mines.

Providing for the support of illegitimate children.

Providing for the licensing of traveling merchants or soliciting agents, commonly called drummers.

Providing for the consolidation of domestic and certain foreign corporations.

Granting the right of way and providing for the construction of the Nevada and Northern Railroad from Elko to the head-waters of the Owyhee river, and thence to the pine-forests of Oregon; like rights to the Nevada Southern Railroad, from Wells, Elko county, to the Colorado river.

For the better observance of the Sabbath.

The following proposed amendments to the Constitution are to be voted on at the election in November, 1884:

Section 2 of Article IV is amended, changing the time of the convening of the Legislature from the first Monday in January to the first Monday in February. This is for the purpose of giving the State officers an opportunity to prepare their reports, so that they will be ready for the Legislature when it convenes.

Section 1 of Article II is amended so as to require naturalized citizens to perfect their citizenship six months prior to the time of voting. This is evidently for the purpose of preventing political parties and candidates from defraying the expense of naturalization papers for such persons as do not care enough for the privilege of exercising the elective franchise to pay for themselves. It also disfranchises all persons convicted of the offense of selling their votes.

Article XVI is changed so as to render it necessary for constitutional amendments to be adopted only by one Legislature instead of two consecutive ones, before submitting them to the voters for ratification. It requires, however, the vote of two thirds of the members of each House instead of a bare majority, as under the present system. The article is further amended by fixing the minimum number of members of a Constitutional Convention at one half the membership of both branches of the Legislature, instead of the aggregate number, as it now stands.

Section 3 of Article XI is amended so as to permit the proper board to invest the funds accruing from the sale of State lands for educational purposes in the bonds of other States, instead of restricting them to United States and Nevada State bonds, as at present.

The question of calling a Constitutional Convention will also be submitted at the same time.

Finances.—The Comptroller estimated the amount of expenditures necessary for the fiscal year 1883–'84 at $307,550.68. Of this the amount dependent on taxes, exclusive of the amount of deficiencies for 1882, will be:

For ordinary current expenses	$430,300 00
For public schools—five-cent tax	27,000 00
Tax for State interest and sinking fund	94,000 00
Total amount dependent on taxes	$551,300 00

The appropriations made by the Legislature at this year's session amounted to $470,300.

The amount of taxable property in the several counties, as returned by the county assessors to the State Comptroller for the years 1882 and 1883, was $27,369,335.37 in 1882, and $27,857,656.68 in 1883.

The State tax, 90 cents on each $100 in 1882, was $246,323.99; in 1883, $250,718.91.

At the beginning of the year the State had $331,127.03 in coin on hand; the State school fund had $576,617.50 in first-class securities; the University fund, $56,730, also in good securities; the public debt amounted to $336,587.50. The receipts for 1881 were $302,435.74, and expenses $346,917.01. In 1882 the receipts were $303,445.94, and expenses $286,842.66. For the two years there was an excess of $27.868.99. The assets of the State school fund are shown to be $622,008.85.

RECAPITULATION OF EXPENSES.

Legislative	$58,878 58
Executive	37,500 09
Judicial	24,042 00
Printing	14,008 79
Public buildings	9,516 57
State-Prison	70,820 18
Charities	73,248 31
Schools	56,754 29
Interest on State debt	25,120 00
Redemption of State bonds	26,000 00
Invested funds	155,899 45
Miscellaneous	26,643 72
Total	$571,931 88

The total valuation of real property for the year was $18,845,868.01; of personal, $8,912,304.80; a total of $27,728,172.81, and an increase of $388,737.44 over 1882. On this valuation the State received a tax of $249,823.56, and the several counties $614,552.05, a total of $864,375.61.

The receipts from the sale of State lands amounted to $93,462.78.

The net yield of bullion, upon which taxes were paid, was $1,643,407.89, upon which the total tax collected was $57,572.40, of which the State received $14,790.52, and the counties $42,781.88.

Mining.—The following is the bullion product by counties for 1882:

COUNTY.	Gold.	Silver.
Churchill	$50,000	$30,000
Elko	35,000	500,000
Esmeralda	50,000	1,470,000
Eureka	885,000	1,700,000
Humboldt	350,000	80,000
Lander	20,000	1,000,000
Lincoln	25,000	430,000
Nye	25,000	280,000
Storey and Lyon	920,000	860,000
White Pine	40,000	460,000
Washoe	10,000	17,000
Totals	$2,000,000	$6,750,000

The bullion yield for 1883 was $7,487,634.25.

State Institutions.—Provision for the insane was made by the enactment of a law, approved Feb. 24, 1881, providing for the erection and equipment of a State Insane Asylum at Reno, and appropriating $80,000. The building has been completed.

In July, 1882, the State patients in the asylum at Stockton, Cal., 148 in number, were transferred to the new asylum. The number of patients, Nov. 1, 1883, was 149. The number of convicts in the State-Prison on November 30 was 117. The average attendance at the State University during 1882 was 28.

The following table gives the number of children of school age by counties:

COUNTIES.		COUNTIES.	
Churchill	89	Lyon	515
Douglas	386	Nye	214
Elko	918	Ormsby	1,090
Esmeralda	227	Storey	2,655
Eureka	803	Washoe	1,080
Humboldt	472	White Pine	353
Lander	618		
Lincoln	493	Total	9,518

The population of the State has decreased since 1880.

Railroad Incorporations.—During the years 1881 and 1882 nine certificates of incorporation were filed by railroad companies in this State. This is the list:

Nevada Western; California Central, Nevada Division; Salt Lake and Western; Nevada Midland; Nevada and Oregon; Carson and Colorado, Second Division; Eureka and Colorado River; Battle Mountain and Lewis; Salt Lake and Western.

Election Returns.—The following is the vote cast in November, 1882:

OFFICES.	Republican.	Democratic.
Governor	6,585	7,770
Lieutenant-Governor	7,362	6,906
Secretary of State	7,737	6,570
Comptroller	7,451	6,828
Treasurer	7,654	6,688
Attorney-General	7,181	7,116
Superintendent of Schools	7,551	6,742
State Printer	7,800	6,559
Surveyor-General	7,512	6,776
Supreme Judge	7,728	6,545
Clerk of Supreme Court	7,688	6,626
Congressman	6,462	7,720

Of the seven district judges chosen, the Republicans elected six and the Democrats one. The Legislature has 12 Democrats and 8 Republicans in the Senate, and 27 Republicans and 13 Democrats in the House; Republican majority on joint ballot, 10.

NEW BRUNSWICK, an eastern province of the Dominion of Canada. Area, 27,322 square miles; population in 1881, 321,233. Capital, Fredericton.

Towns.—The towns of importance in New Brunswick, and their population, are: St. John, 26,127; Portland, 15,226; Fredericton, 5,218; Moncton, 5,032; Chatham or Miramichi, 4,600; Newcastle, 4,000; Carleton, 4,000. The chief town, St. John, at the mouth of St. John river, conducts over two thirds of the entire trade of the province. Portland is a suburb of St. John. Fredericton, the capital of the province, is on St. John river, 84 miles from the bay. Vessels ascend far above Fredericton, steamers running as far as Woodstock, a small town in Carleton county, near the Maine border. Moncton is the junction of the St. John branch of the Intercolonial Railway with the main line. The workshops, etc., of the railway are here. It is also a port on Petitcodiac river.

Soil.—The valley of the St. John river, the shores of Northumberland straits, and of the Bay of Fundy, are, on the whole, fertile and very well fitted for agriculture and grazing. The northern districts are rocky and very thinly peopled. Agriculture is not conducted on even an ordinary scale, the product being little more than enough for home consumption.

Climate.—The climate of this province is very genial along the shores of the Bay of Fundy and the Gulf of St. Lawrence, but inland extremes of summer heat and of winter cold are often experienced. The most northern point is in latitude 48°, and the most southern about latitude 45°. The waters of the Gulf Stream moderate the climate of the southern part somewhat, and this modification is assisted by the continuous flow and ebb of the tides in the bay. These tides rise to very great heights in the inlets or "guts" along the shores—sometimes attaining the extreme of sixty-five feet.

Ports.—The ports of New Brunswick are: Dalhousie, Bathurst, Cavagnet, and Shippegan, engaged in the timber and fishing trade, on the Bay of Chaleur; Chatham, Newcastle, Richibucto, Shediac, on the Gulf of St. Lawrence and Northumberland straits. The first two are lumbering and ship-building towns, the last two are packet-stations for Prince Edward Island, as well as ship-building and lumbering ports. Moncton and Hillsboro, on the Petitcodiac; Dorchester and Sackville on Shepody and Cumberland bays, are ship-building, lumbering, and coal stations. Campo Bello, St. George, St. Andrews, and St. Stephens, on Passamaquoddy Bay, are lumbering, ship-building, and general commerce stations, trading largely with Calais, in Maine, on the boundary. St. John has already been noticed. Fredericton has a large river trade as well as the timber business.

Industries.—Lumber is the chief export and source of wealth. The total of all exports of New Brunswick products in 1882 was $6,599,881, of which $4,724,422 was lumber. The fisheries rank next, the exports of New Brunswick fish amounting to $753,251. This is chiefly on account of dried and fresh herring, and of lobsters. Including the two departments, agriculture and grazing, the farming exports amounted in 1882 to $578,420, nearly all of which went to the United States. The exports of manufactured articles for the year in question amounted to $365,748. This sum is made up chiefly of extract of hemlock-bark, $129,812; ships, $101,840; grindstones, $30,433; wooden manufactures, $27,053; gypsum, $10,430; and junk and oakum, $15,543. The exported minerals amounted to $140,908. Of this, $35,561 represents coal; $20,140, crude gypsum; $19,689, iron-ore; $4,733, antimony-ore, and $57,684, stone and marble.

Education.—The present system of free public schools in New Brunswick exists under the provisions of the Common-Schools Act of 1871, and of several acts since passed by the provincial Legislature. This enactment had for its object "the establishment throughout the entire province of a well-equipped system of schools, in which the instruction should be open to the children of poor and rich alike; the quality of the instruction good enough for all; and the general character of the instruction non-sectarian and national.

Almost from the day New Brunswick became a separate province (1784) the Legislature had recognized the duty of fostering the work of education, and the statute-book from time to time gave evidence that the importance of placing the means of instruction within reach of every child was more and more clearly perceived. The greatest step in advance, previous to 1871, was made by the passage of the Parish Schools Act of 1858.

The administration of the school law and regulations, and the general supervision of the schools, are vested in the Chief Superintendent, subject to the Board of Education, of which he is a member. The Board of Education, which is the ultimate authority, under the law, in all matters relating to public schools, is composed of the Governor, the members of the Executive Council, the President of the

University, and the Chief Superintendent of Education—twelve in all.

The whole province is divided by the Board of Education into small districts for local school government. The salaries of teachers are paid in part by the Chief Superintendent of the Provincial Treasury and in part by the trustees. School-buildings and grounds may be paid for by loans extending over a limited period, and poor districts are specially aided by the Board of Education in providing buildings. The law provides for the efficient grading of schools wherever the number of pupils in the district is sufficient. Besides the schools supported and governed as above detailed, there are fourteen county grammar-schools, located in most cases in the shire-towns. Except in the city of St. John, pupils of both sexes attend the same schools and departments.

"The place occupied by the normal school in our school system has no counterpart in any school system of any other province or State on this continent, unless it be in that of Prince Edward Island. It is not, like the normal schools of Nova Scotia, Ontario, and the American States, an adjunct of the system; it is central and vital to it. It is not the head, but in respect of agency by which the quality of school instruction is to be guaranteed even to the extremities of the province, it is the heart of the system." Thus spoke the chief superintendent, Dr. Rand, in his address at the opening of the new building erected for the institution at Fredericton. The building provides ample accommodation for about 200 student-teachers, and for the four Model School departments with about 200 pupils.

The proportion of the population at school, in the summer term of 1881, by the census of the year, was 1 in 6·18. The average monthly percentage of pupils daily present during the term was 72·44. The number of teachers and assistants employed was 1,453, of whom 1,289 had received normal-school training. The number of schools in operation was 1,386; the number of pupils enrolled that term was 51,921, and for the whole year 64,267. The average number of teaching days the schools throughout the province were in session was 101½, out of 108 teaching days in the term. Total provincial grant for education, for the year ended April 30, 1882, $153,085. Total of county fund drafts in the same year, $88,063.

The College of New Brunswick was established by provincial charter in 1800; founded and incorporated by royal charter in 1828, under the name of King's College, Fredericton, with the style and privileges of a university; reorganized under an amended charter in 1860, and denominated the University of New Brunswick. The university derives certain revenues from lands and other property originally granted by the province; it also receives an annual legislative grant of about $9,000. The Faculty of Arts consists of five professors, and the course occupies three years.

NEW HAMPSHIRE. State Government.—The following were the State officers at the close of the year: Governor, Samuel W. Hale, Republican, succeeding Charles H. Bell; Secretary, Ai B. Thompson; Treasurer, Solon A. Carter; Attorney-General, Mason W. Tappan; Superintendent of Public Instruction, James W. Patterson; Insurance Commissioner, Oliver Pillsbury; Railroad Commissioners, Orren C. Moore, E. B. S. Sanborn, and Edward J. Tenney. Supreme Court: Chief-Justice, Chas. Doe; Associates, Clinton W. Stanley, Isaac N. Blodgett, Wm. H. H. Allen, Isaac W. Smith, Lewis W. Clark, and Alonzo P. Carpenter.

Legislative Session.—The Legislature convened on the 6th of June, and adjourned on the 15th of September. On the 7th of June Gov. Hale was inaugurated. On the 2d of August, and on the forty-third ballot, Austin F. Pike, Republican, was chosen United States Senator, by a vote of 181 to 112 for Harry Bingham, Democrat, and 22 for others. In both branches, 424 bills were offered, of which 201 failed to pass; and 66 joint resolutions, of which 19 failed to pass. Among the acts and joint resolutions passed were the following:

To establish a new apportionment for the assessment of public taxes.

To promote the welfare of the common schools.

In relation to uniting, separating, forming, dissolving, or changing the lines of school districts, in amendment of chapters 43 and 86 of the general laws.

In relation to holding of teachers' institutes.

To aid Dartmouth College in furnishing instruction for indigent students from New Hampshire.

In relation to savings-banks. By it the charters of all savings-banks in the State incorporated for a term of years are made perpetual.

Providing for the compensation of the bank commissioners.

To incorporate the New Hampshire Life Insurance Company.

To prevent fraudulent divorces.

For the better registration of births, marriages, and deaths.

To prohibit the sale of toy pistols and other toy fire-arms.

For the punishment of parents who neglect to provide for the support of their minor children.

To facilitate the detection and punishment of crime.

The railroad consolidation bill was passed, under the title of "an act to provide for the establishment of railroad corporations by general law." The act affects thirty-four railway lines operating exclusively inside of New Hampshire, and eight other lines. The principal feature of this act is to authorize any two or more, or all of the said railway lines, to consolidate by perpetual leases, or partnership-contracts, into one corporation. It authorizes also the building of new railroads, and the taking of private property therefor, whenever and wherever a railway corporation chooses to do so. These things, besides the fixing and mortgaging the capital stock, and other matters, the act allows the railway companies to do, "provided the Supreme Court of the State, or three referees appointed by the court, shall decide that the public good requires such new

railroad, or that the public good will be promoted by the proposed union." "An act to establish a Board of Railroad Commissioners" was also passed.

Among the joint resolutions passed by the Legislature of 1883 was the following:

"Relating to a Constitutional Convention." It provides that, at the November election in 1884, the electors shall vote on the question, "Is it expedient that a convention be called to revise the Constitution?"

Finances.—During the fiscal year ended May 31, 1883, the State revenue from all sources amounted to $935,675.72, and the expenditures for all purposes to $792,286.11; leaving in the treasury, on June 1st, an available cash surplus of $204,622.49; such surplus, on June 1, 1882, having been $61,233.48. This favorable result is due to the recently adopted system of biennial sessions of the Legislature.

The State debt on June 1, 1883, was $3,383,060.94. As to a portion of its principal, amounting to $450,000, and falling due on Sept. 1, 1884, the Governor observes that, unless large sums of the public money are appropriated for extraordinary expenses in the mean time, it may be paid at maturity with the surplus of revenue over expenditures accumulated in the interval.

Railroads.—The following is a list of the railroads operating in New Hampshire, the value of each road, and the tax assessed on it for the present year:

NAMES OF RAILROADS.	Value of road and equipments.	Amount of tax.
Eastern	$425,000	$4,227 95
Boston and Maine	1,500,000	17,848 41
Ashuelot	150,000	1,855 05
Boston, Concord, and Montreal	2,500,000	30,230 43
Fitchburg	18,000	204 72
Nashua and Lowell	400,000	4,577 28
Wilton	250,000	3,091 75
Cheshire	1,200,000	13,921 07
Grand Trunk	550,000	6,794 00
Northern	2,000,000	24,559 67
Concord	2,500,000	29,812 66
Manchester and North Weare	78,000	964 62
Concord and Portsmouth	475,000	5,858 46
Dover and Winnepesaukee	350,000	4,231 60
Portsmouth, Great Falls, and Conway	375,000	4,527 29
Manchester and Lawrence	1,500,000	18,601 53
Concord and Claremont	465,000	5,725 32
Sullivan County	500,000	6,004 70
Worcester and Nashua	180,000	2,074 08
Mount Washington	130,000	1,607 71
Suncook Valley	140,000	1,694 13
Portland and Rochester	15,000	185 50
Monadnock	100,000	1,224 78
Portland and Ogdensburg	50,000	618 35
Wolfborough	48,000	584 02
		$190,870 47

The aggregate amount of the tax assessed on railroads in the State for 1883 is nearly $21,000 greater than for 1882, when it was $170,003.85. The excess is almost entirely attributed to the increased rate of taxation.

Savings-Banks.—The number of savings-banks in operation in the State, on June 1, 1883, was sixty-six; the two oldest were chartered in 1823. The deposits amount to $39,124,000; the total assets exceeding $40,000,000, and the number of depositors being 113,187.

In the matter of savings-banks, the last Legislature enacted some important changes, the better to provide for the interests of depositors, the principal one relating to the commissioners. Their number is reduced to two; and their compensation, which was previously paid by the banks, is now made payable by the State, at the rate of three dollars a day of actual service, besides the allowance of ten cents mileage. At the same time, the new law imposes on the commissioners a more exacting and more responsible service than was required of them before.

Insurance.—The total of fire-risks carried in the State, during 1882, was $69,987,572, and that of life-risks, $11,950,766. The system of insurance supervision now obtaining in the State was established in 1870, and the totals of premiums which her citizens have paid since then to the insurance companies of either sort during these thirteen years are of an almost equal amount, namely: for fire insurance, $5,993,286.90; for life insurance $5,978,545.24. The losses paid to the citizens of the State in that time aggregate: fire, $3,172,802.45; life, $2,657,519.04. The aggregate premiums collected in New Hampshire by the fire-insurance companies of other States in 1882 amounted to $470,484.22, and the losses paid by them in the same year were $430,168.94. The New Hampshire Fire Insurance Company collected $60,176.67 of premiums in the State during that year, and paid $30,344.21 of losses. The life-insurance companies, all of other States, collected in New Hampshire $288,317.03 of premiums, and the losses paid by them amounted to $269,533.97. The fire and life insurance companies of other States, for the business transacted in New Hampshire during the year 1882, paid into her treasury $7,578.57 of taxes; and the New Hampshire Fire Insurance Company paid into it a tax of $2,600 on its capital stock.

Education.—The State Normal School, in operation since 1870, has since then graduated 400 pupils, a yearly average of 30. The present number of pupils is 40. The location of it is regarded as a serious drawback to its success. The Governor recommends the establishment of a second Normal School in the northern section of the State.

Respecting public instruction in the State generally, Gov. Hale points to the impediments to its efficiency and diffusion resulting from the district system, and decidedly subscribes to the opinion of the ablest educators that the change from that to the town school system can not be too soon effected.

State Charities.—The Asylum for the Insane during the year has been under a new superintendence, whose management the trustees aver to have been marked by ability and devotion. The present number of its inmates is 254. During the forty years of its existence, the

number of patients admitted into the asylum was 4,423, and that of patients discharged as recovered, 1,593.

The number of indigent persons who belong to other unfortunate classes, and whom the government of New Hampshire keeps as its beneficiaries in institutions of other States, is as follows: Twenty deaf and dumb at the American Asylum in Hartford, Conn., two at the Clarke Institute in Northampton, and two at the Horace Mann School in Boston, Mass. Of blind persons, there are ten at the Perkins Institution for the Blind in South Boston; and at the Massachusetts School for the Feeble-Minded the State keeps three beneficiaries. For the education of the deaf-mutes the State pays annually $175 per capita.

Correctional Institutions.—In the State Industrial School, opened twenty-five years ago, for the correction of wayward youth, there were at the beginning of June 110 inmates—boys, 92; girls, 18. The total number received in this institution since its establishment is 1,100, of whom two only died of disease.

The State Penitentiary contains 121 prisoners, all males except one. No escape from it has occurred during the past thirteen years. Owing to the diminished number of prisoners who might be employed at work, the results of the labor-contract system in 1882 were not so satisfactory for the prison's income as before. The earnings amounted to $16,845.19, and the expenditures to $20,366.20, leaving a deficiency of $3,522.

Legal Reform.—Concerning the present system of the State laws, the Governor lays before the Legislature several of its defects, both in substance and procedure, and earnestly urges their immediate correction. In regard to some among such defects he says: "Theoretically, the Executive Department is responsible for the administration of the laws, the officers directly charged with prosecutions being the Attorney-General and the county solicitors; but it is a fact that, outside of the law reports, and the fragmentary chronicles of the newspapers, there is no published report whatever of the administration of either criminal or civil laws." He suggests that the Legislature should provide for an annual report by the county solicitors to the Attorney-General, and for a report by the Attorney-General to the Governor. The legal proceedings which are now used in the State, with regard to the relations existing between debtors and creditors, the Governor characterizes as subject to manifest and frequent injustice.

Divorce.—In regard to divorces, the Governor plainly says that during the past forty years their number has steadily and alarmingly increased, in proportion to the increased number of the causes for which the Legislature has successively allowed them to be granted. He says: "Of the fourteen causes for which divorces may be granted in this State, there are five that render the marriage relation a matter of option, and under cover of which it is robbed of all its obligation and solemnity."

NEW JERSEY. State Government.—The following were the State officers during the year: Governor, George C. Ludlow, Democrat; Secretary of State, Henry C. Kelsey; Treasurer, George M. Wright; Comptroller, Edward J. Anderson; Attorney-General, John P. Stockton; Superintendent of Public Instruction, Ellis A. Apgar. Judiciary, Supreme Court: Chief-Justice, Mercer Beasley; Associate Justices, Manning M. Knapp, Edward W. Scudder, Bennet Vansyckel, David A. Depue, Alfred Reed, Jonathan Dixon, Joel Parker, William J. Magie. Court of Errors and Appeals, the Chancellor, the Justices of the Supreme Court, and Lay Judges: John Clement, Martin Cole, Caleb S. Green, William H. Kirk, William Paterson, Jonathan S. Whitaker; Chancellor, Theodore Runyon; Vice-Chancellors, Abraham V. Van Vleet and John T. Bird.

Legislative Session.—The Legislature met on January 9th, and adjourned on March 23d. On January 24th, John R. McPherson, Democrat, was re-elected United States Senator, by a vote of 43 against 36 for Garret A. Hobart, Republican, and 2 for Gov. Ludlow. Among the acts of the session are the following:

Enabling corporations incorporated under special charter to increase the amount of their capital stock, and also the number of their directors; an act which enables horse railroads to increase their capital stock to double the present amount; relating to the consolidation of docks and stores for the keeping of live-stock; an act providing for the cancellation of defective conveyances made by attorneys and agents; supplement to an act to appoint harbor-masters and inspectors, approved March 31, 1869, which provides that no ship or vessel shall be anchored within 300 yards of the end of a pier extending from the shore of New Jersey into the waters of New York Harbor, between Ellis Island and Castle Point, in Hoboken, and requires all harbor-masters to enforce the law; authorizing the Governor to appoint six persons to constitute a Board of State Charities and Correction, of which the Governor shall be president.

There were filed in the Secretary of State's office, of Senate bills, 97 bills and 2 joint resolutions approved; 2 bills passed over the veto and 1 bill filed without approval—total, 100 bills and 2 joint resolutions; and of the House bills, 108 bills and 4 joint resolutions approved.

The Legislature provided for the limiting of the hours of labor of children.

Finances.—The accounts are divided and kept under the four headings of Agricultural College Fund, the Deaf and Dumb Fund, the School Fund, and the State Fund. The Agricultural College fund consists of $116,000 of State bonds. The Deaf and Dumb fund consists of $58,793.58, derived from the sale of the Stevens Battery, and appropriated by the Legislature to the Institution for the Deaf and Dumb. There has been expended from this amount $45,000, leaving $13.793.58. The school fund amounts to $3,235,767.11. The securities of the State fund consist of stock of the Camden and Amboy Railroad and Delaware and Raritan canal companies, with a

par value of $288,700. This stock pays 10 per cent. interest. The receipts during the last year (excluding the items not to be counted on in the future) amounted to $861,702, and the ordinary disbursements were $1,051,-901. "The receipts of the State," says Gov. Ludlow in his message to the Legislature of 1884, "should be increased to $1,000,000 per annum. The sum derived from the taxation of railroads should be at least $750,000; tax on foreign insurance companies, $5,000; State-Prison receipts, $75,000; interest and dividends, $29,000; judicial fees, by an amendment to the law which will meet the difficulties shown in the Comptroller's report, should produce $30,000; the item of official fees may safely be put down at $13,000; assessments on corporations, $25,000; a tax should be levied on telegraph and express companies, which now pay nothing, and would produce at least $20,000; a small tax on corporations, other than those already taxed as such, should be levied, with the result of at least $100,000."

The report of the Commissioners of the Sinking Fund show that the assets of the fund are as follow:

Loans on mortgages	$438,954 99
Interest accrued thereon	11,454 54
Decrees against real estate	27,529 92
United States bonds (par value)	50,000 00
New Jersey bonds (par value)	11,000 00
School-district bonds (par value)	6,000 00
Balance in bank	62,608 21
Total	$662 547 66
Real estate, costing	425,659 18
Total	$1,083,206 84

By the supplementary report it is shown that the fund will probably be exhausted by 1893, leaving $800,000 unprovided for.

The investment in railroad property in this State, as stated by the Commissioner of Railroad Taxation, is $227,884,534. Almost the entire amount is withdrawn from the ordinary assessment-rolls of the municipalities, and is taxed under a special system, at one half of one per cent. upon its true value, and the tax is paid directly into the State treasury. The tax levied upon the railroads of this State the last year was $677,557.76, or less than one third of one per cent. upon the amount invested. Other property in the State is taxed at rates varying from one to three per cent.

The commissioners have prepared a schedule of the riparian lands of the State, and show that, out of 4,452,750 lineal feet, the State has disposed of but 500,703. The commissioners attribute the ready sale of these lands to the reasonable prices charged for them, ranging from twenty cents per lineal foot, on unimproved beaches, to fifty dollars on the Hudson river and Bay of New York.

State Institutions.—The number of convicts in the State Prison at the beginning of the year was 798, and at its close 804—37 females and 767 males. The receipts and expenditures of the past year were as follow:

Paid for maintenance	$62,422 83
Paid for repairs	4,500 72
Paid for salaries of officers and inspectors	9,000 00
Paid for salaries of deputies	56,209 64
Paid for discharged convicts	1,300 00
Total	$133,473 19
Earnings of prisoners	72,706 88
Net loss to the State	$60,766 31
Net loss previous year	61,163 27

The number of inmates of the Reform School for Boys has increased slightly over that of last year, being 330 as against 322. The law of 1882, providing for an appropriation of not exceeding $100 a year for the maintenance of each inmate, has worked well. Four hours of each day are devoted to school and to exercise, and the remainder to employment on the farm, in the workshops, or at the brick-yard. The boys earned, last year, $19,816.04, nearly half the cost of maintenance.

There were in the Industrial School for Girls, at the close of the year, 27 inmates, of whom twelve were received during the year. The trustees claim, that of the 185 girls committed since 1871, over 100 have been reclaimed.

The report of the officers of the Trenton Asylum shows that the number of patients on October 31st was 627, two less than the preceding year. The expense of maintaining the institution during the past year was $156,281.-31, of which $44,326.18 was received from the State; $83,274.73 from the counties; and $25,-443.72 from private patients. The institution owns 65 acres of farm-land, and rents 170 more.

The Morristown Asylum reports 707 patients at the close of the year, an increase of 40 since the last report. The expense of maintaining the institution was $196,624.96, of which $39,-675.91 was received from the State; $83,800.-84 from the counties; and $57,340.43 from private patients.

The number of the inmates of the Home for Disabled Soldiers at the beginning of the year was 389; there were 291 admitted during the year, and 474 discharged. The total number under care was 680.

During the year, the organization of the New Jersey Institution for the Deaf and Dumb was completed and the building occupied. As the law organizing the institution provided that the course of instruction should be five years, the admissions into the new institution were limited to those pupils who had received instruction for less than that time. They numbered 66, which with 18 original admissions makes the number in the institution 84. It can comfortably accommodate 175 pupils.

Education.—There were raised and appropriated for school purposes during the year the following amounts:

State school-tax	$1,875,699 20
State appropriation	100,000 00
Township school-tax	24,585 72
Interest from surplus revenue	33,004 49
Local tax for teachers' salaries	274,560 39
Total	$1,807,849 60
Local tax for school-houses	507,752 81
Total	$2,315,602 61

The number of children of school age in the State is 349,242, and there are 211,905 pupils enrolled in the several public schools, and 48,707 attend private schools. The school property of the State is valued at $6,515,620, and affords accommodation for 194,456 pupils; the cost of each pupil, on a basis of the average attendance, is $15.14 a year.

The managers of the Normal School report 218 pupils enrolled during the year; the number of pupils graduated was 39.

The Agricultural College is supported entirely by the proceeds of the land given by the General Government, and by the liberality of Rutgers College, to which it is attached; the State is under no expense in regard to it, and, of the 60 students in attendance, 38 are enjoying State scholarships.

Statistics.—In 1880 there were 7,167 establishments whose total capital was $112,421,593, employing 87,145 persons, whose wages aggregate $46,408,045. The total value of products was $255,925,236.

The leading industries are as follow (the first column of figures shows the number of establishments of each, the second gives the capital employed, and the third the value of the products):

Silk and silk goods	103	$6,952,825	$17,122,230
Iron and steel	40	9,099,050	10,841,896
Sugar and molasses.....	4	2,110,000	22,841,258
Meat-packing, etc.... ...	81	1,775,200	20,719,640
Foundry and machine-shops.....	188	7,481,421	11,282,748
Flour and grist-mill products	481	8,879,068	8,459,944
Cotton and cotton goods..	24	3,961,145	5,089,519
Drugs and chemicals.....	41	3,830,750	4,908,965
Malt liquors.....	49	3,260,800	4,532,788
Jewelry.....	68	2,555,899	4,079,677
Woolen goods.....	27	2,580,125	4,984,007

Under the various "bounty laws" there have been paid upon "flax-stalks" $5,000 for 858 bunches, and upon "flax-fiber" $4,000 for 155 bunches. The bounty paid upon 5,595 tons of sorghum-cane grown was $5,595, and for 319,944 pounds of sugar made from sorghum, $8,199.45.

Northern Boundary.—The commissioners appointed by the States of New York and New Jersey, to locate the northern boundary line of this State, have concluded their labors. Their work was limited to a remarking of the line that was run in 1774, by the restoration of such of the monuments as had been destroyed or injured. This work has been thoroughly done, and in a manner to insure stability.

Party Conventions.—The Democratic State Convention met in Trenton, September 13th, and nominated Leon Abbett, of Jersey City, for Governor. The platform declares in favor of a tariff for revenue "so adjusted as to give protection and encouragement to home productive industry and labor, without producing or fostering monopolies"; and demands "the equalization of taxes on all properties within the State, whether that of individuals or corporations."

The Republican State Convention met also in Trenton, on September 18th, and nominated Judge Jonathan Dixon for Governor. The platform commends President Arthur's administration, declares for a protective tariff, and demands "such a prudent and economical administration of the affairs of the State as will make needless any direct State tax."

Nominations were also made by the Greenbackers and Prohibitionists.

Election Returns.—The vote in November was as follows: Democratic, 103,856; Republican, 97,047; Prohibition, 4,153; Greenback, 2,960. The Legislature, to meet in 1884, will consist of 12 Republicans and 9 Democrats in the Senate, and 34 Democrats and 26 Republicans in the House.

NEW JERUSALEM CHURCH. The General Convention of the New Jerusalem Church in the United States met in its sixty-third session in Boston, Mass., June 1st. The Rev. Chauncey Giles was chosen President. Reports were made from the local associations, as follows: Canada Association, five societies; Maine Association, five societies; Maryland Association, four societies; Massachusetts Association, twenty-one societies, 1,497 members; Michigan Association, 124 members; Minnesota Association, Missouri Association, New York Association, 664 members; Ohio Association, eleven societies, 556 members; General Church of Pennsylvania, seven societies, 359 members; Illinois Association, and from a number of single societies, besides which several evangelists and missionaries reported upon the progress of their labors. The endowment fund of the Theological School was reported to be now $21,780. The receipts of the Board of Missions had exceeded those of the previous year by $849. A single missionary was actually employed by the board, in Middle Tennessee, but other missionaries were aided by it, in different parts of the United States and in Italy and Sweden. The trustees of the "Iungerich fund" for the publication and distribution of the works of Swedenborg reported that their income for the year had been $1,439, and their expenditure $2,626, and that a balance remained in their hands of $33,322. Sixty-seven thousand books had been distributed to the date of making the report. The German Missionary Union had supplied books and tracts to fifteen societies. Reports were presented by the Committee of Correspondence from the Italian mission (where considerable success had been gained in Sicily, and twenty volumes of new church books had been published in Italian), from East Prussia, Denmark, Sweden, and Switzerland. An address was read from the Australasian Conference, which consists of four societies, "and hopes to meet once in three or four years." Stress was laid in the discussions of the Conference upon the importance of the publication of the works of Swedenborg in Latin, for which a fund, called the "Latin fund," had been set apart. This fund was intrusted to the Ameri-

can Swedenborg Printing and Publishing Society, to be used for the gratuitous circulation of the Latin editions.

The English Conference. — The seventy-sixth meeting of the English Conference of the New Church was held in London in August. The Rev. Chauncey Giles and the Rev. Louis Tafel were present as visiting delegates from the United States. Reports were presented of sixty-three societies, having 5,490 registered members of more than twenty years of age, and 6,597 Sunday-school pupils, with thirty-five ordained ministers and fifteen licentiates. Missionaries of the church were working successfully in Germany, Poland, Denmark, Sweden, and Switzerland. The present meeting of the Conference was attended with especial interest, because the year was marked by the one hundredth anniversary of the foundation of the New Church in England, which occurred on the 5th of December, 1783. The fact was remembered in the Conference, and was commemorated in a special service.

NEW MEXICO. Territorial Government.—The following were the Territorial officers during the year: Governor, Lionel A. Sheldon; Auditor, Trinidad Alarid; Treasurer, Antonio Ortiz; Secretary, William G. Ritch; Commissioner of Immigration, Gilbert Scudder. Supreme Court: Chief-Justice, Samuel B. Axtell; Associates, Joseph Bell and Warren Bristol.

Present Condition.—According to the census of 1880, the Territory had a little over 119,000 people. Since that time the increase has been large. Along the lines of railroads the old towns show considerable growth, many new ones have been founded, and all have the appearance of activity and thrift. Ranchmen have settled all over the Territory in large numbers. New mining camps have been established, and reduction-works are being erected. The law imposes a poll-tax on each able-bodied male inhabitant over the age of twenty-one years, and the returns of the assessors of the various counties show the number of such persons to be over 32,000. About three fourths of the population are natives of the country, and speak the Spanish language. But the spread of the English language is rapid, especially in the towns. New Mexico has an admirable climate, great natural resources, an orderly condition, and a population, especially the natives, kindly and hospitably disposed. It lacks a thoroughly systematized government; the methods in vogue are an admixture of common and civil law systems.

Resources.—There are 8,000,000 acres of land adapted to the production of fruits, vegetables, and cereals, and water is convenient and sufficient for purposes of irrigation. These lands are highly productive, but the methods of cultivation are far behind the times. Wheat of the finest quality can be raised. The greatest wealth of the Territory lies in its minerals. These comprise gold, silver, copper, lead, iron, and zinc, and coal is abundant. Development has been slight, and reduction-works are few, though recently a greater impetus is manifest. During the year 221,270 tons of coal, of an average value of $3 a ton, were mined. There were nearly 500 men employed in coal-mines.

Finances.—In 1881 the taxable property of the Territory amounted to $14,088,554; in 1882 it advanced to $20,441,395; and in 1883 to $27,137,903. Except the Atlantic and Pacific, all the railroads in the Territory are exempt from taxation for a period of six years from completion, and none have been completed for so long a time. One per cent. is levied upon the taxable property—one half for the Territory, one fourth for county purposes, and one fourth for schools. At the end of the year the Governor expected the Territory would be out of debt, and would have a respectable surplus on hand.

Railroads.—Some progress has been made in the construction of railroads. The Atlantic and Pacific is finished across Colorado river, which furnishes an additional connection with the Pacific coast. A narrow-gauge road has been completed from Deming to Silver City, in Grant county, 46 miles; another from Lordsburg, on the Southern Pacific, to Clifton, Arizona, 30 miles of which are in New Mexico; and a third is partly constructed from Santa Fé to Española, 34 miles, connecting with the Denver and Rio Grande.

Education.—The greatest want of New Mexico is a proper school system. A law passed at the last session of the Legislature authorizes the establishment of charitable schools for indigent orphan children, the management being confided to the Governor and the archbishop. Schools are established for nearly one hundred children, which make no distinction on account of religious opinions, and are divided between Catholics and Protestants in substantially fair proportions. The Legislature at the same session also passed an act authorizing the creation of separate school districts in seven of the counties of the Territory by a vote of the people. Under this law the districts may regulate their own schools. The law contemplates compulsory attendance for five months of the year, but it is not executed. The census of 1880 shows that the greatest percentage of illiteracy in the United States is in New Mexico.

Land System.—On this subject the Governor expresses the following views:

> New Mexico is largely plastered with grants of land, real or pretended, made by the Spanish and Mexican Governments. By law these grants are segregated from the public domain, and must continue in a condition of practical mortmain until final action is taken to determine their validity. The claimants do nothing to develop, or improve, or pay taxes on them, and a satisfactory title can not be acquired by others. In some cases the grants overlap, which leads to disputes, and occasionally to acts of violence. Confirmations have been carelessly made, and it is generally believed that errors and frauds have been practiced, and apparently legalized, through want of knowledge of, or attention to, the subject. Grants have been confirmed of greater dimensions than the Spanish or Mexican

laws seem to justify, and though mineral lands were not alienated in fee-simple by those governments, still confirmatory acts have been passed and patents issued, under which it is claimed that minerals pass to patentees. Success in securing confirmation of grants of a doubtful character so encouraged and emboldened the covetous, that it is alleged the manufacture of grant-papers became an occupation, and surveys have been so erroneously made as to lead to a belief that these grants are endowed with India-rubber qualities. No one will attempt to acquire any lands in the vicinity of these alleged grants, for fear that the stretching process will be applied. Prospectors avoid the grants because it is assumed that, in accordance with the practice in former confirmations, the minerals will pass to the claimants. Doubt and uncertainty seriously retard settlement and development. More than a third of a century has passed since this Territory was acquired, and still large numbers of the grants remain undisposed of.

The homestead and pre-emption laws were designed to distribute lands among the people, and to prevent land monopoly. In those localities where the great body of the land is productive of the necessaries of life, the intended result has been experienced. In the dry and mountainous country the contrary effect has been produced, and under the operation of the homestead and pre-emption laws the greatest land monopoly exists. Locations are made which embrace a spring, or extend along a stream, and the surrounding lands are valueless to any one but the locators of the water. Hence, the man who obtains one hundred and sixty acres controls the usufruct of a vast tract without cost, and without paying any tax to support the local government. A cattle company or an individual may, by owning a few acres, have the occupancy of a tract as large as some of the States.

Indians and Outlaws.—On these subjects the Governor, in his report for 1883, says:

At the time my last report was made, Oct. 31, 1881, New Mexico had recently been relieved from prolonged and destructive raids by hostile Indians. Since that time no raids have been made into the Territory, and no citizen has been killed on the soil of New Mexico, except Judge McComas and wife, which occurred in April last. The Indians then did not enter the Territory for the purpose of a raid, but were driven into it from Arizona by the forces in pursuit, and murdered the persons named while fleeing from the troops, and making their way by a circuitous route into Mexico. Preparations are so complete, and means so ample, that any hostile movement can be met, and crushed speedily and effectually.

Also, at the time my last report was made, the Territory in many parts was overrun by numerous desperate and criminal characters. Life and property were at their mercy, and they acted in defiance of the authorities. The condition was so bad, that good citizens felt justified in organizing vigilance committees, and lynch-law was frequently administered. The desperado and thieving element has substantially disappeared, and nothing more is heard of *vigilantes*, or lynch-law. Thirty militia companies are organized, armed, and officered by good men, under excellent discipline, and as favorably located over the Territory as the condition of the population will permit.

NEW YORK (STATE). Grover Cleveland, who was elected Governor in November, 1882, by an unprecedented majority, was inaugurated on the 1st of January. On the following day the Legislature was organized. The organization of the Senate, as made the year before, was left undisturbed, except that the new Lieutenant-Governor presided. Alfred C. Chapin, of Kings county, was chosen Speaker of the Assembly. For the first time in many years the Democratic party had control at once of the chief executive office and both branches of the Legislature. There were several contested seats in the Assembly, but only one case excited special interest. In one of the election districts of the Thirteenth Assembly District of New York city, 173 votes were returned as cast for Thales S. Bliss, Democrat, and 120 for Henry L. Sprague, Republican. It was claimed in behalf of Sprague that the figures had been transposed through an error of a poll-clerk, which reversed the result of the election in the entire Assembly district. The county canvassers had refused to correct the error, and given the certificate to Bliss. The Assembly Committee on Privileges and Elections, consisting of five Democrats and four Republicans, reported, after a full investigation, in favor of Sprague's right to the seat, seven members signing the report. Two members of the committee, without disputing the facts established by the majority, reported in favor of Bliss, and after debate this minority report was adopted, 14 Democrats voting with the Republicans against the motion.

Legislative Action.—A subject which occupied a good deal of attention during the session was that of convict-labor, an effort being made to abolish the employment of inmates of the State Prisons by contract. An investigation of the alleged abuses of the system was made by a committee of the Assembly, and at one time thirteen bills affecting the subject were pending. A bill was passed forbidding the renewal of the contract for making hats at the Clinton Prison, but beyond that the system was not interfered with. An act was passed, however, near the end of the session, referring the question whether contract-labor should be abolished from the prisons to a vote of the people at the next regular election.

Two important acts affecting the civil service of the State were passed. One of these prohibited assessments for political purposes upon persons holding office or employment in the service of the State, or the collection of contributions for political purposes in any public office or institution. Although this act became a law, the same object was still more effectually provided for in the other bill, the main purpose of which was to regulate appointments to and removals from office. This bill was prepared under the advice of the New York Civil-Service Reform League, and was modeled on the national law. It was introduced simultaneously by a Republican in the Senate and by a Democrat in the Assembly, on the 25th of January. It was referred to the Judiciary Committees, whence it was favorably reported in the Assembly February 28th, two Democratic members of the committee dissenting. It was not acted on until April, when, through the efforts mainly of Republican members, it was brought under consideration, amendments having been added from another bill, which extended its provisions somewhat. When

on the 1st of May a motion was made in the Assembly to lay aside all orders of business having precedence, for the purpose of taking up this measure, it was defeated by a strict party vote, the Democrats opposing it. Later, on the same day, however, the same measure was adopted by a vote of 75 to 17, and the bill was ordered to a third reading by a *viva-voce* vote. It was finally passed with little opposition in either house, though the long delay was attributed to covert hostility.

The first section authorized the Governor to appoint, and the Senate to confirm, three Civil-Service Commissioners, not more than two of whom shall be adherents of the same party. These commissioners were to constitute the New York Civil-Service Commission, and were to hold no other official place under the State of New York. The Governor may remove any commissioner if he sees fit and appoint his successor with the consent of the Senate. The duties of the commissioners are to aid the Governor, as he may request, in preparing suitable rules for carrying the act into effect. As regards these rules, it is specified that they shall provide as follows:

1. For open, competitive examinations for testing the fitness of applicants for the public service now classified or to be classified. 2. All the offices, places, and employments so arranged or to be arranged in classes shall be filled by selections from among those graded highest as the results of such competitive examinations. 3. There shall be a period of probation before any absolute appointment or employment aforesaid. 4. Promotions from the lower grades to the higher shall be on the basis of merit and competition. 5. No person in the public service is for that reason under any obligation to contribute to any political fund. 6. No person in said service has any right to use his official authority or influence to coerce the political action of any person or body. 7. There shall be non-competitive examinations when competition may not be found practicable. 8. Notice shall be given in writing by the appointing power to said commission of the person selected for appointment or employment from among those who have been examined. And any necessary exceptions from said eight fundamental provisions of the rules shall be set forth.

The commissioners, who were to have a salary of $2,000 a year each, were authorized to appoint a chief examiner with a salary of $3,600, a secretary, stenographer, messenger, etc., making the entire annual expense of the commission about $15,000. It was provided that

Within four months after the expiration of the present session of the Legislature, it shall be the duty of the Governor to cause to be arranged in classes the several clerks and persons employed or being employed in the public service, for the purposes of the examination herein provided for, and he shall include in one or more of such classes, so far as practicable, all subordinate places, clerks, and officers in the public service of the State. After the termination of eight months from the expiration of the present session of the Legislature, no officer or clerk shall be appointed, and no person shall be admitted to or be promoted in either of the said classes now existing, or that may be arranged hereunder pursuant to said rules, until he has passed an examination or is shown to be specially exempted from such examination, in conformity herewith. No elective officer, and no person merely employed as a laborer or workman, shall be required to be classified hereunder; nor, unless by the direction of the Senate, shall any person who has been nominated for confirmation by the Senate be required to be classified or to pass an examination.

Other sections of the bill authorized the mayors of cities having a population of 50,000 or more to prescribe regulations for admission to the civil service of such cities in accordance with the principles of the law; prohibited political assessments upon office-holders or public employés, and the offering of any inducement for appointment to or retention in office; and provided for an investigation by the commission into the conditions of the public service throughout the State, and the expediency of further legislation, having for its purpose an extension and fuller application of the system of competitive examinations. The bill received the prompt approval of the Governor. A bill of a similar character, applicable to the city of New York alone, was defeated in the Assembly. (See REFORM IN THE CIVIL SERVICE.)

The act regulating primary elections which was passed in 1882, and applied only to the city of Brooklyn, was so modified as to apply to all the cities of the State, and in that form was re-enacted. It provides that any person who at any political primary election falsely personates and votes under the name of another, or obstructs or prevents others from voting who are entitled to vote, or fraudulently conceals or destroys ballots in the ballot-box, or takes ballots therefrom, or commits any other fraud tending to defeat or affect the result of the election, shall be deemed guilty of a misdemeanor. Before entering upon their duties the presiding officer and inspectors of the primary shall take the same oath now required of inspectors at general elections. The vote of any challenged person shall be rejected unless he be sworn as to his qualifications as a voter. It is made a misdemeanor for any person elected a delegate at such primary to accept money or valuable thing for his vote as such delegate.

A subject upon which much time was bestowed to no purpose was the amendment of the charter of the city of New York. On the 30th of January a resolution was adopted in the Assembly asking the mayor of that city to inform that House "what legislation, if any, he may consider necessary in order to economize, simplify, and improve the local government of the city of New York." The mayor replied on the 7th of February, submitting a scheme of charter amendment, the fundamental idea of which was to establish single heads for the administrative departments of the city, and give to the mayor full power of appointing and removing these. This plan was strongly supported and persistently advocated, but it was antagonized by powerful political influences; opposition schemes and amendments were presented, and finally the whole effort for charter reform was defeated.

Another subject which occupied a good deal of time and occasioned much controversy, was a project for increasing the water-supply of the city of New York, by means of a new aqueduct and an enlarged reservoir in the Croton basin. A carefully prepared bill for this purpose was introduced. It placed the charge of laying out

the line of the new aqueduct, securing plans, making contracts, and supervising the whole work, in the hands of a commission, and the controversy arose out of the method of appointing the commissioners. At first it was proposed that the Mayor, Comptroller, President of the Department of Taxes and Assessments, President of the Board of Aldermen, Commissioner of Public Works, and two citizens to be appointed by the mayor, should constitute the commission. This was modified so as to make the Mayor, Comptroller, and Commissioner of Public Works the official members. Then it was proposed to have four citizen members appointed by the mayor. This was strenuously opposed by some of the city representatives, who favored naming the commissioners in the bill. After much controversy it was decided that there should be only three citizen commissioners, and these were named in the bill, being James C. Spencer, George W. Lane, and William Dowd. All effort to secure the addition of a fourth citizen commissioner, or to have any power of selection left to the mayor, was defeated. The issue throughout was between those who wished to prevent political control over the aqueduct-work, and those who were credited with a desire to have such control, and the latter were successful. An effort was made, after the close of the session, to induce the Governor to veto the bill, but on the 1st day of June he gave it his approval, filing a memorandum of his reasons, which were mainly that there was urgent need of the new aqueduct, and he saw no evidence of the political jobbery alleged. The support given to the bill in the form in which it became a law was almost wholly Democratic, and the opposition was entirely Republican. (See NEW YORK CITY.) A bill was also passed authorizing the Commissioners of the Sinking Fund of the City of New York to investigate the merits of a scheme for obtaining a supplementary water-supply under high pressure from the Ramapo valley, in Orange and Rockland counties, and if convinced of the advisability thereof, to contract on behalf of the city, for the use of water thus to be supplied. One of the conditions provided for was that, within two years after the contract was entered into with the company proposing to construct the works, not less than 50,000,000 gallons per day of pure and wholesome water should be furnished, under a pressure due to a head of at least 300 feet above tide-water.

A bill requiring the elevated railroads in the city of New York to reduce their fares to five cents for each trip at all hours of the day passed both houses after much agitation. In the Assembly it was passed by a vote of 109 to 6, and in the Senate the vote was 24 to 5. It was nevertheless vetoed by the Governor after a hearing given to the advocates and opponents of the measure. The Governor argued at some length that the act was unconstitutional, because a contract had been entered into allowing the companies to charge the existing rates of fare under the sanction of past legislation. The power of the Legislature to reduce fares under the General Railroad Act was limited by the condition that it could not be done without the consent of the corporations when it would reduce the profits to less than 10 per cent. of the "capital actually expended." This the Governor also regarded as a contract of the State, the obligation of which would be impaired by the bill. He furthermore believed that it would involve a breach of faith, inasmuch as liberal inducements had been necessary, and had been offered, to secure rapid transit in New York, and the rates of fare allowed were an essential part of the consideration under which capital had ventured into the enterprise. An effort to pass the bill over the veto was unsuccessful. The Railroad Commissioners were then called on to report upon the amount of capital "actually expended" in the construction of the elevated railroads, and the ratio of their profits to such expenditure. Two reports were submitted on the 19th of April, one signed by Commissioners Rogers and Kernan, and the other by Commissioner O'Donnell. The companies claimed that the cost of construction was $30,646,659.27, but they included discount on bonds and other items which the commissioners did not regard as properly belonging to that account. They made deductions which left the "total cash cost" at $22,683,253.14. The capitalization of the companies was found to be: Manhattan Railway Company stock, $13,000,000, of which nothing was ever paid in; New York Elevated Railroad Company stock, $6,500,000; Metropolitan Railroad Company stock, $6,500,000; New York Company's funded debt, $8,500,000; Metropolitan Company's funded debt, $12,818,000; total, $47,318,000. The commissioners did not regard the stock of the Manhattan Company as representing in any sense "capital actually expended." The gross income for the year ending Sept. 30, 1882, was stated at $5,973,633.41, of which $3,212,589.03 was derived from the lines of the New York Company, and $2,755,483.62 from the lines of the Metropolitan Company. The operating expenses were $1,794,871.83 for the roads of the New York Company, and $1,796,684.88 for those of the Metropolitan. Taxes and interest on funded debt left the net income at $352,069.37. Mr. O'Donnell did not agree with his colleagues as to the definition of capital expended and net income. He found the total capital actually expended on the entire elevated system to be $22,250,608.72, and the net income to be $2,375,910.54. He held that the roads are built under special charters; that the Legislature could amend, alter, or repeal these charters, and that there was no contract between the city or State not to reduce the fare. Mr. O'Donnell concluded by recommending the passage of a law fixing the "five-cent hours" on the elevated roads at from 4 to 10

A. M. and 3 to 9 P. M. He also proposed a law requiring the Railroad Commissioners to examine and ascertain the cash capital actually expended in the constructing and equipping of each surface railroad in the State, including street railways. Neither bill was passed.

A general act regulating the establishment of street railways was passed, but encountered a veto after the close of the session. The objection to it was that it secured special privileges for certain projects already existing in the city of New York.

A bill providing for submission to a vote of the people of a constitutional amendment prohibiting the manufacture and sale of intoxicating liquors was discussed in the Senate, and defeated by a vote of 13 yeas to 18 nays, only one Democrat voting in the affirmative, and two Republicans in the negative. The only change made in the excise laws was one affecting the cities of New York and Brooklyn alone. This was effected by a bill prepared by the delegations of those two cities, modified on suggestions made by the Governor after it had been submitted for his approval. The changes suggested by the Governor were in the direction of careful restriction, but the act as passed was much more liberal toward the liquor-traffic than the existing law which applied to the State generally. It abolished the requirement that holders of licenses should be hotel-keepers, permitted their removal from one place to another without losing their licenses, and forbade their arrest for violation of the law, except upon a warrant based on affidavits, unless engaged in selling on Sunday.

An act was passed regulating the conduct of receivers in winding up the business of insolvent corporations. Its chief features were that applications for the appointment of receivers should be made at a special term of the Supreme Court in the judicial district in which the principal office of the corporation was situated, that the compensation of receivers should be limited to 5 per cent. on the first $100,000 received and paid out, and 2½ per cent. on all sums in excess of that amount; that the funds received should be deposited at one or more designated places, and that reports should be made to the court every six months, with detailed accounts of receipts and expenses. Restrictions were also put upon the employment of counsel, and a limit was fixed to the time for closing up the business of receiverships.

A proposition to submit to the people a constitutional amendment making legislative sessions biennial was defeated in the Assembly by a majority of one.

A bill apportioning the congressional representation of the State into thirty-four districts was passed, against the opposition of the Republican minority, who claimed that it was unfair, especially in the city of New York.

The first district was made to include the counties of Suffolk, Queens, and Richmond; Kings county was divided into four districts; New York county below the Harlem river was divided into eight districts; that portion lying north of the river was joined to Westchester county to form the fourteenth district.

The other districts are as follow:

Fifteenth District.—The counties of Orange, Rockland, and Sullivan.

Sixteenth District. — The counties of Putnam, Dutchess, and Columbia.

Seventeenth District. — The counties of Ulster, Greene, and Delaware.

Eighteenth District.—The counties of Rensselaer and Washington.

Nineteenth District.—The county of Albany.

Twentieth District. — The counties of Saratoga, Schenectady, Montgomery, Fulton, and Hamilton.

Twenty-first District.—The counties of Clinton, Essex, Warren, and Franklin.

Twenty-second District.—The counties of St. Lawrence and Jefferson.

Twenty-third District.—The counties of Oneida and Lewis.

Twenty-fourth District.—The counties of Otsego, Herkimer, and Schoharie.

Twenty-fifth District.—The counties of Onondaga and Cortland.

Twenty-sixth District.—The counties of Broome, Chenango, Madison, and Tioga.

Twenty-seventh District.—The counties of Oswego, Wayne, and Cayuga.

Twenty-eighth District.—The counties of Tompkins, Chemung, Seneca, and Schuyler.

Twenty-ninth District.—The counties of Ontario, Steuben, and Yates.

Thirtieth District.—The county of Monroe.

Thirty-first District.—The counties of Livingston, Genesee, Orleans, and Wyoming.

Thirty-second District.—The First, Second, and Third Assembly Districts of the county of Erie.

Thirty-third District.—The county of Niagara and the Fourth and Fifth Assembly Districts of the county of Erie.

Thirty-fourth District.—The counties of Chautauqua, Cattaraugus, and Allegany.

A bill extending the scope of investment for the funds of savings-banks met with strong opposition, in which the trustees of a majority of the savings-banks in the State united, and was vetoed by the Governor. Among other important measures which failed was one regulating charges for elevating grain, one reducing the fees of pilots in New York Harbor, and one increasing the number of surrogates in New York county to three.

New Offices and Officials.—A number of bills were passed during the session, providing for new offices and making changes in those previously existing, and a number of new appointments were made. At the beginning of the session, the Governor appointed as Railroad Commissioners, under the act of 1882, William E. Rogers, John D. Kernan, and John O'Donnell. The last mentioned was designated by the commercial organizations named in the act, and was the candidate of the so-called anti-monopolists. There was considerable opposition to him exhibited in the Senate, but the appointment was finally confirmed by a vote of 23 to 8, the confirmation in the other cases being unanimous. Later in the session, on the expiration of the term of office of Insurance Superintendent Charles G. Fairman and Bank

Superintendent A. B. Hepburn, John A. McCall, the deputy superintendent, was appointed to the former place, and Willis S. Paine, of New York city, to the latter. Mr. William B. Ruggles was elected by the Legislature Superintendent of Public Instruction, to succeed Neil Gilmour; James Shanahan was appointed Superintendent of Public Works, to succeed Silas B. Dutcher, in January.

Early in the session a bill was introduced providing that the completion of the new Capitol be placed in the charge of a single commissioner, to be appointed by the Governor. This passed, against the opposition of Republicans, in both houses. In the Senate it was declared by the Lieutenant-Governor to have passed, although a constitutional quorum did not vote, the Republicans abstaining, though present. The ruling that the visible presence of a quorum was sufficient, though not shown by the vote, caused much criticism on the part of the opponents of the Lieutenant-Governor. The salary of the new office was fixed at $7,500, and later on the Governor appointed Isaac G. Perry, of Binghamton, to the position. The custody of the completed public buildings of the State was changed and placed in the hands of the Governor, Lieutenant-Governor, and Speaker of the Assembly, who had the selection of the Superintendent, by whom all subordinate employés were selected. Charles B. Andrews, of Buffalo, was appointed superintendent after the close of the session.

An act was passed providing for a commission of five persons, to be appointed by the Governor, to take all necessary preliminary action for the selection and appropriation of lands about Niagara Falls as a "State reservation," the object being the preservation of the natural scenery, and the protection of public rights therein. The commissioners were to receive no compensation, but their expenses in the discharge of their duties were to be met by the State. William Dorsheimer, J. Hampton Robb, and Andrew H. Green, of New York, Martin B. Anderson, of Rochester, and Sherman S. Rogers, of Buffalo, were appointed to the commission.

In pursuance of authority granted by a constitutional amendment ratified in 1882, an act was passed providing for the election of twelve additional justices of the Supreme Court, two in the first, fifth, seventh, and eighth districts respectively, and one each in the second, third, fourth, and sixth districts.

The office of Canal Appraiser and the body known as the State Board of Audit were abolished, and a Board of Claims was created to hear and decide upon all cases involving claims against the State for compensation or damages. The board was to consist of three commissioners appointed by the Governor, with the consent of the Senate, to hold office after their first appointment for a term of two, four, and six years respectively, and thereafter for terms of six years. Each commissioner was allowed a salary of $5,000 per annum and necessary expenses, not exceeding $500. The board was authorized to appoint a clerk at a salary of $2,000, a stenographer at $1,500, together with five cents a folio for minutes furnished to claimants, and a messenger at $800. The board was required to hold at least four regular sessions a year at Albany, beginning on the second Tuesday of January, April, September, and November respectively. All the necessary powers of a court of record were given to the Board of Claims, before which the Attorney-General was required to appear in behalf of the State. Appeals were allowed to the Court of Appeals from any final award on questions of law only when the amount in controversy exceeded $500. The commissioners appointed to this new board were George M. Beebe, of Sullivan county; Henry F. Allen, of Buffalo; and Lyman H. Northrup, of Sandy Hill.

An act was passed abolishing the Board of Harbor-Masters for the Port of New York, and establishing a new one, the members of which were to be appointed by the Governor, with the advice and consent of the Senate, and to be paid salaries instead of being permitted to collect fees for their services, a practice which had been declared unconstitutional. Another act reorganized the Board of Emigration, and placed it in charge of a single commissioner, to be appointed by the Governor, with the consent of the Senate, who was to receive a salary of $6,000 per year, and be allowed two deputies of his own selection, one with a salary of $4,000 and the other with a salary of $2,500 per year. On the last day of the session, May 4th, the Governor transmitted to the Senate a list of appointments, including those for Harbor-Masters, Port-Wardens, Quarantine Commissioners, and Captain of the Port of New York. The name of William H. Murtha, of Kings county, had previously been sent in for the new office of Commissioner of Emigration. The appointment was opposed by those Senators from New York affiliated with the Tammany organization, and the new appointments were also distasteful to them. The names sent in for Civil-Service Commissioners under the new law, which were those of Andrew D. White, Augustus Schoonmaker, and Henry A. Richmond, were promptly confirmed, as was that of C. F. Peck, for Chief of the Bureau of Labor Statistics, also a newly created position, but those for Harbor Commissioners, Port-Wardens, and Quarantine Commissioners were sent to standing committees, where that for Emigration Commissioner was already "hung up." As the Legislature was to adjourn that day, this action was equivalent to rejecting the nominations. The Governor sent a message to the Senate, which gave rise to a heated discussion, in which Senator Thomas F. Grady criticised the action of the Executive. The latter was as warmly defended by Senator Jacobs, of Kings county. The essential portion of the message was this:

I deem it my duty to remind you of the importance of giving effect to the law lately passed by the Legislature "to amend the laws relating to alien immigrants and to secure an improved administration of alien immigration." The statute was the result of investigation which demonstrated that the present management of this very important department is a scandal and a reproach to civilization. The money of the State is apparently expended with no regard to economy, the most disgraceful dissensions prevail among those having the matter in charge. Barefaced jobbery has been permitted, and the poor immigrant, who looks to the institutions for protection, finds that his helplessness and forlorn condition afford the readily seized opportunity for imposition and swindling.

As a result of the failure to confirm the appointment of a Commissioner of Emigration, the old board continued in power. There was some controversy as to the right of the harbor-masters to continue their functions, but it was not brought to an actual contest, and they continued as though no change had been made in the law. The question of calling an extra session of the Senate to dispose of these appointments was agitated for a time, but the Governor was not disposed to take that course, and renew the controversy.

Political Canvass.—The political canvass of the year presented no features of exceptional interest. The State officers to be chosen were, Secretary of State, Comptroller, Treasurer, Attorney-General, and State Engineer and Surveyor, and both branches of the Legislature were to be renewed. The advantage which the Democrats had gained by their sweeping success in 1882 was somewhat offset by the conduct of the Legislature in creating new offices and increasing public expenses. The differences among the Republicans had subsided, and the action of the party was generally harmonious, while the Democrats were more or less divided, especially in the city of New York. The consequence was a marked reaction, as shown in the result of the election.

The first convention of the year was held by the National Greenback Labor party at Rochester, on the 4th and 5th of September. The most important features of the platform were the following:

That railroads and telegraphs are public institutions, deriving their existence under the fundamental law of eminent domain, or right to take private property for public use; that under that law no legislative sanction can constitutionally confer on companies owning such property a right to tax commerce or travel, to pay interest or dividends on fictitious capital, or to make such property a source of private gain beyond a reasonable remuneration for services actually rendered, and a fair return on the money actually and in good faith expended by stock and bond-holders for its construction and equipment. . . . That pooling associations which allow railroad officials representing roads outside of the State to have a voice in determining transportation charges between points in the State are an outrage on the citizens, and should be prohibited by law. . . . That the outrageous contract prison-labor system still remains in force, notwithstanding the pledge contained in the platforms of the old parties to correct it, showing that no reliance can be placed in either to remedy the evil. We hold that prisons should be located on the mineral lands owned by the State in northern sections; that the prisoners should be employed in developing the mineral resources of the State, so that their labors will not come in competition with the products of honest mechanics' toil, and that the prisoners should be paid for all they earn in excess of the actual cost of their keeping; and that the ballot-box is the only place through which American working-men can strike and obtain permanent relief from their present wrongs.

The ticket put in nomination was as follows: For Secretary of State, Thomas K. Beecher, of Chemung county; Comptroller, G. L. Halsey, of Otsego county; Attorney-General, Louis F. Post, of New York county; State Treasurer, Julian Winne, of Albany county; State Engineer, Edwin A. Stillman, of Ontario county.

The Republican State Convention met at Richfield Springs, on the 19th of September. Secretary of State Joseph B. Carr, Comptroller Ira Davenport, State Engineer and Surveyor Silas Seymour, and Attorney-General Leslie W. Russell were renominated, and Pliny T. Sexton, of Wayne county, was nominated for State Treasurer. The essential features of the platform were as follow:

We rejoice in the successful inauguration of civil-service reform, a result of Republican agitation and national progress, and insist that the work thus auspiciously begun be prosecuted to complete success.

We favor a system of tariff laws under which, while revenue for the Government is provided, American producers are justly protected, American labor elevated, and home markets are secured to home products for the advantage alike of the producer and laborer.

We favor the removal of all unjust burdens upon American shipping, and the awarding of ocean-mail contracts to the lowest bidders among owners of American vessels after open competition.

The tendency to create monopolies requires checking by adequate legislation. Unjust discrimination in transportation should be prohibited.

The free-canal policy of this State has in practice justified its adoption by restoring the canals to their usefulness.

We approve the plan of party reorganization in the city of New York.

The Democratic State Convention met at Buffalo. All efforts to secure unity in New York city had failed, and the Tammany and Irving Hall organizations refused to take part in common primaries as recommended by the State committee.

When the convention met, on the 26th of September, each of the three city factions appeared with separate delegations. There was considerable contest against the admission of the Tammany delegates, but the question was settled in advance by the State Committee, by deciding on a division of the representation on the basis adopted the previous year. This was done in the committee by a vote of 22 to 10. The following is the full report of the Committee on Resolutions:

The Democracy of New York reaffirms the platform adopted at its last State Convention, which has received the approval of the people, as shown by a majority of nearly 200,000 at the last election, and they especially denounce the proposition that the people should be taxed to raise a surplus fund for the Federal Government to distribute among the States. We claim with pride and satisfaction that every pledge therein made has been in good faith redeemed. Valuable re-

forms have been wrought; useless offices have been abolished; the civil service has been freed from the debasing and injurious influences of partisan manipulation; the freedom and purity of primaries have been secured; political assessments have been abolished; receivership abuses have been corrected; the principle of local self-government has been adhered to; the efficiency of the National Guard has been increased; taxation for the support of Government has been reduced; a State Bureau of Labor Statistics has been established; the rights of the working-man have been further protected, and the injurious competition of convict-labor has been curtailed. Business methods have been the rule in the management of State affairs. On the record thus made, and to which it will steadfastly adhere, the Democratic party asks a renewed award of the confidence of the people. We invite with reason all friends of improved State administration, irrespective of party, to join with the Democracy in preserving and perfecting the reforms in progress and in extending them to all branches of the State service. We heartily indorse Gov. Cleveland's administration. It justifies the great vote which elected him. He has deservedly won the affection of the people by his industry, firmness, intelligence, and aggressive honesty. The results make his administration one of the best the State ever had.

The nominations were as follow: For Secretary of State, Isaac H. Maynard, of Delaware county; Comptroller, Alfred C. Chapin, of Kings county; Treasurer, Robert A. Maxwell, of Genesee county; Attorney-General, Dennis O'Brien, of Jefferson county; Engineer and Surveyor, Elnathan Sweet, of Albany county.

The Prohibition party held a convention at Syracuse on the 26th of September, and nominated: For Secretary of State, Frederick Gates, of Herkimer county; Comptroller, Stephen Merritt, of Rockland county; State Treasurer, James Baldwin, of Steuben county; State Engineer, George A. Dudley, of Ulster county; Attorney-General, Virgil A. Willard, of Allegany county.

The platform declared the well-known principles of the party, and favored an amendment of the State Constitution prohibiting the manufacture and sale of intoxicating liquors.

The Election.—The election occurred on the 6th of November. The total vote for Secretary of State was 898,850, of which Carr, Republican, received 446,088; Maynard, Democrat, 427,491; Beecher, Greenback, 7,066; and Gates, Prohibition, 18,205; making Carr's plurality over Maynard, 18,597. For Comptroller, Davenport, Republican, received 429,873, and Chapin, Democrat, 445,974, giving the latter a plurality of 16,101. Maxwell, for Treasurer, had a plurality of 17,695; O'Brien, for Attorney-General, 13,766; and Sweet, for State Engineer and Surveyor, 18,871. To the Senate, 19 Republicans and 13 Democrats were elected, and to the Assembly, 72 Republicans and 56 Democrats. In the city of New York the vote for Secretary of State was—Carr, 68,267; Maynard, 92,050: for Comptroller, Davenport, 59,282: Chapin, 100,303. John Reilly, the Democratic candidate for Register, received 78,510 votes; Jacob Hess, Republican, 64,736; and James O'Brien, Independent, 18,797. All the Democratic candidates for judges were elected. Of the seven Senators elected in the city, one was Republican, two Tammany Democrats, three Anti-Tammany Democrats, and one Union Democrat. Of the twenty-four Assemblymen, nine were Republicans, eight Tammany Democrats, and seven Anti-Tammany Democrats. Of the twenty-four members of the city Board of Aldermen, eight were chosen by the Republicans, eight by the Tammany organization, seven by the County Democracy, and one by an Independent Democratic association. Low was re-elected Mayor of Brooklyn by a vote of 49,934 to 48,091 for Hendrix, Democrat, and 349 for Leigh, Prohibitionist.

On the proposition to abolish contract labor from the prisons of the State, 677,779 votes were cast, of which 408,402 were in favor of the proposition and 269,377 against it. In the city of New York the vote stood 118,777 for the proposition to 14,301 against it. In the larger cities it was generally favored, and in the country districts opposed.

Finances.—The financial condition of the State is favorable and promising. During the fiscal year ending September 30th, $635,200 of the canal debt was paid, leaving the aggregate indebtedness of the State $8,473,854.87, against which stood a sinking fund of $2,495,553.06. Hence the debt unprovided for was only $5,978,301.81. With the exception of an unclaimed balance of $3,000 of the old bounty debt, and $122,694.87, the interest of which is devoted to the payment of annuities to Indians, this entire debt consists of "stock" issued for canal construction, bearing 6 per cent. interest, and redeemable in 1887, 1891, 1892, and 1893. The expenditures of the fiscal year, and the condition of the treasury on the first of October, are shown in the following table:

FUNDS.	Balances in treasury, Oct. 1, 1882.	Receipts for fiscal year ending Oct. 1, 1883.	Payments for fiscal year ending Oct. 1, 1883.
	Dollars.	Dollars.	Dollars.
General	1,052,286	6,695,959	6,615,519
Common-school	67,522	2,091,688	2,228,012
Free-school	179,405	3,063,726	2,007,712
Literature	8,295	77,126	82,491
United States deposits	88,032	1,23[illegible],601	1,266,758
College land-scrip	266,166	82,246	312,576
Elmira Female C. E.	6,105	2,005	2,795
Military record	3,273	2,510	1,327
Canal	2,158,223	2,384,653	3,545,703
County-debt sinking	3,056	.....	.....
Totals	3,857,363	15,592,812	17,062,923

The total cash balance in the State treasury, Oct. 1, 1883, was $2,387,254.44.

The assessed value of property in the State for the year was $2,557,218,240 for real estate and $315,039,085 for personal property, which shows an increase of $124,556,861 in the former and a decrease of $35,982,104 in the latter. The disparity of these figures for real and personal property, the actual values of which are approximately equal, reveals the inequality of assessment under the existing laws. The rate of taxation fixed by the last

Legislature was three and one-fourth mills on each dollar, which on this valuation would furnish a revenue of $9,334,836.31 for the fiscal year 1883–'84, an amount considerably in excess of the requirements of the treasury from that source. The receipts of the year from the special tax on corporations was $1,935,179.31, of which $351,183.75 was for taxes due in 1880, which had been in litigation.

Canals.—The cost of maintenance and repairs of canals was $240,535.54 from Oct. 1, 1882, to Feb. 1, 1883, and $349,319.36 for the remainder of the fiscal year, under the administration of the new superintendent. The estimated expense of the canals for the fiscal year 1883–'84 is $650,000 for repairs and maintenance, $500,310 for interest on canal debt, and $450,000 for the canal debt sinking fund, or $1,600,310 in all, to be met by taxation. During the season of navigation, the first under the system of freedom from tolls, the total traffic on the canals was 5,775,651 tons, an increase of 324,350 tons over that of the previous year. The gain was only about six per cent., while there was a much larger increase in the traffic over the railroad lines which compete with the canals. The shipments of grain, however, from Buffalo by canal amounted to 42,350,916 bushels, against 29,430,688 bushels in 1882. State Engineer and Surveyor Seymour estimated the cost of putting the canals in thorough repair at $3,502,443, and Comptroller Davenport recommended substantial improvements in these water-ways, including the deepening of the prism one foot.

Prisons.—The number of convicts in the three prisons of the State on the 30th of September was 2,828, distributed as follows: at Sing Sing, 1,462; at Auburn, 882; and at Clinton, 484. There has been a progressive decrease in the number since 1877, when it was 3,567. The earnings and expenditures of the prisons during the year were as follow:

AUBURN PRISON.		
Earnings	$125,280 30	
Expenditures	119,857 42	
Surplus		$5,422 88
SING SING.		
Earnings	$237,238 48	
Expenditures	183,219 73	
Surplus		54,018 75
Total surplus		$59,441 63
CLINTON.		
Earnings	$44,542 80	
Expenditures	94,878 20	
Deficiency		50,335 40
Balance surplus		$9,106 23

The first fiscal year during the whole of which the present system of administration under a State Superintendent was in operation was 1878. The cost of maintenance showed at once a very large decrease, being then $429,599.76, against $625,733.44 for the previous year, and much higher figures under the old system. For 1883, it was reduced to $397,955.35. The net deficiency from earnings in 1877 was $317,411.06. The next year it was reduced to $67,800.45; in 1881 it was converted to a small surplus; and in 1883 the surplus was $9,106.23.

Of the results of the present system the superintendent claims: "The productive energy and capacity of the prisoners are constantly increasing. The physical and moral condition of the prisoners is steadily improving. The number of prisoners incarcerated in the State Prisons is gradually diminishing, although the population of the State is increasing. An enormous annual deficit on account of the maintenance of the State Prisons has been changed to a yearly surplus."

There were, on the first of December, more than 15,000 persons confined in the prisons, houses of refuge, penitentiaries, jails, and other penal establishments in the State.

Charitable Institutions.—The value of the property held by the various charitable institutions of the State, on the first day of October, was $42,935,360.04, of which $35,415,555.45 was in real estate, and $7,519,804.59 in personal property. The receipts of all these institutions for the year ending Sept. 30, 1883, were:

State institutions	$909,221 52
County and city institutions	2,363,720 42
Incorporated benevolent institutions	7,157,002 15
Total	$10,429,944 09

Of this sum, $719,753.98 was derived from the State, $4,876,519.37 from cities and counties, and $1,520,571.15 from legacies and donations. The expenditures during the year were:

By State institutions	$1,435,942 62
By county and city institutions	2,363,720 42
By incorporated benevolent institutions	6,492,431 04
Total	$10,291,894 08

The number of insane in the various institutions, on the 30th day of September, was 11,270, distributed as follows:

State Lunatic Asylum at Utica	600
Hudson River State Hospital	806
State Homœopathic Asylum	260
Buffalo State Asylum	329
Willard Asylum (chronic insane)	1,740
Binghamton Asylum (chronic insane)	412
County poor-houses and asylums	1,867
City almshouses and asylums	5,010
In private asylums	498
Asylum for Insane Criminals	144
Asylum for Insane Immigrants	109
Total	11,270

The number of State paupers under care on the first day of October, 1882, was 163. There were 1,426 committed during the year ending Sept. 30, 1883. There remained on the first day of October, 1883, under care, 189.

Public Education.—The following are the statistics relating to public schools for the year ending September 30th:

Total receipts, including balance on hand Oct. 1, 1882	$13,206,065 14
Total expenditures	11,858,504 09
Amount paid for teachers' wages	8,265,452 88
Amount paid for school-houses, repairs, furniture, etc.	1,925,671 27

Estimated value of school-houses and sites..	$31,011,211 00
Number of teachers employed during legal term of school	21,122
Number of teachers employed during any portion of the year	31,570
Number of children attending public schools.	1,041,089
Number attending normal schools	6,270
Number of volumes in school-district libraries.	701,675
Number of persons in the State between the ages of five and twenty-one	1,631,500

There has been a steady decrease in the number of books in school-district libraries. In 1880 the number reported was 1,286,536; in 1881, 707,155; in 1882, 705,812, and now 701,675. There are twenty-four literary and thirteen medical colleges connected with the University of the State. Of these, two were chartered during the year — Canisius College, of Buffalo, and Niagara University, at Suspension Bridge. There are under the visitation of the Regents of the University 277 academies and academical departments of union schools, comprising about 36,000 pupils and 1,400 teachers. The instruction of common-school teachers was carried on in 95 academical institutions, in which 1,611 teachers were trained.

Banks, Insurance, Railroads.—Eight new banks of discount were organized, under State laws, during the year, and one failed, leaving the total number eighty-four, the condition of which, on October 1, was reported as follows:

		Increase during the year.
Resources	$160,716,398	$38,152,933
Capital	21,761,700	2,956,000
Surplus and profits	11,146,418	1,488,716
Due depositors	113,914,963	31,863,938
Other liabilities	13,893,312	1,844,284

Of the increase in capital, $1,300,000 was the result of the conversion of banks from the national to the State system. On the first day of July 127 savings-banks reported to the Superintendent of the Banking Department. During the year one new savings institution was organized, and one closed after paying its liabilities in full. The condition of these savings-banks on the day named was as follows:

		Increase during the year.
Resources	$483,662,008 15	$23,583,425 49
Due depositors	420,831,007 88	20,087,168 96
Surplus on market value	62,114,698 47	2,957,654 24
Other liabilities	716,307 80	498,602 30
Number of depositors	1,119,512	52,994

The reports made July 1st by the sixteen loan, mortgage, guarantee, and indemnity companies doing business in this State exhibit the following condition:

		Increase in number.
Resources	$160,137,764 04	$20,379,229 90
Capital paid in	13,537,000 83	957,500 00
Surplus and profits	12,244,412 42	2,390,035 64
Due depositors	125,283,170 17	20,394,985 01
Other liabilities	9,229,350 92	*3,207,130 45

* Decrease.

Sixteen institutions for the safe-keeping and guaranteeing of personal property, with a capital aggregating $2,886,900, were under the supervision of the Banking Department on the first day of October.

On the first day of July there were doing business in the State 147 joint-stock fire-insurance companies, with total assets of $169,983,924.56, including a net surplus of $51,978,273.33; fifteen marine-insurance companies, with total assets of $23,253,860.86, including a net surplus of $4,440,141.59; twenty-nine life-insurance companies, with total assets of $449,602,347.17, including surplus as regards policy-holders of $76,751,390.73; and seven casualty insurance companies, with total assets of $3,617,413.41, and a net surplus of $1,331,038.81. There were 131 co-operative insurance associations doing business in the State, Jan. 1, 1883. Of these 119 were New York State companies, and 12 were organized in other States; the number of certificates in force issued by these associations was 443,296. The amount of securities on deposit with the Insurance Department July 1st, for the protection of policy-holders insured by the various insurance companies transacting business in this State, was in the aggregate $13,488,347.68, as follows:

New York State life-insurance companies	$2,662,508 75
New York casualty-insurance companies	301,567 73
New York fire-insurance companies	1,693,000 00
Fire-insurance companies of other States	100 00
Foreign insurance companies	8,831,171 29

Under the new law regulating the formation and conduct of co-operative insurance associations and placing them under the supervision of the Insurance Department, thirteen such associations were incorporated in the State, and five organized in other States were admitted to transact business in the State. A number of old ones went out of existence. The administration of the Insurance Department was rendered more efficient and economical during the year, the number of clerks being reduced from thirty to seventeen, the services of an attorney being dispensed with, and the annual expense being reduced from $48,650 to $28,150.

During the eight months ending September 30th the new Railroad Commission caused the greater part of the 6,500 miles of railroad in the State to be inspected, investigated seventy-five complaints, and made a number of special inquiries and examinations, the results of which were embodied in a voluminous report to the Legislature of 1884. Much attention was given to the subject of accidents, their causes, and the means of prevention.

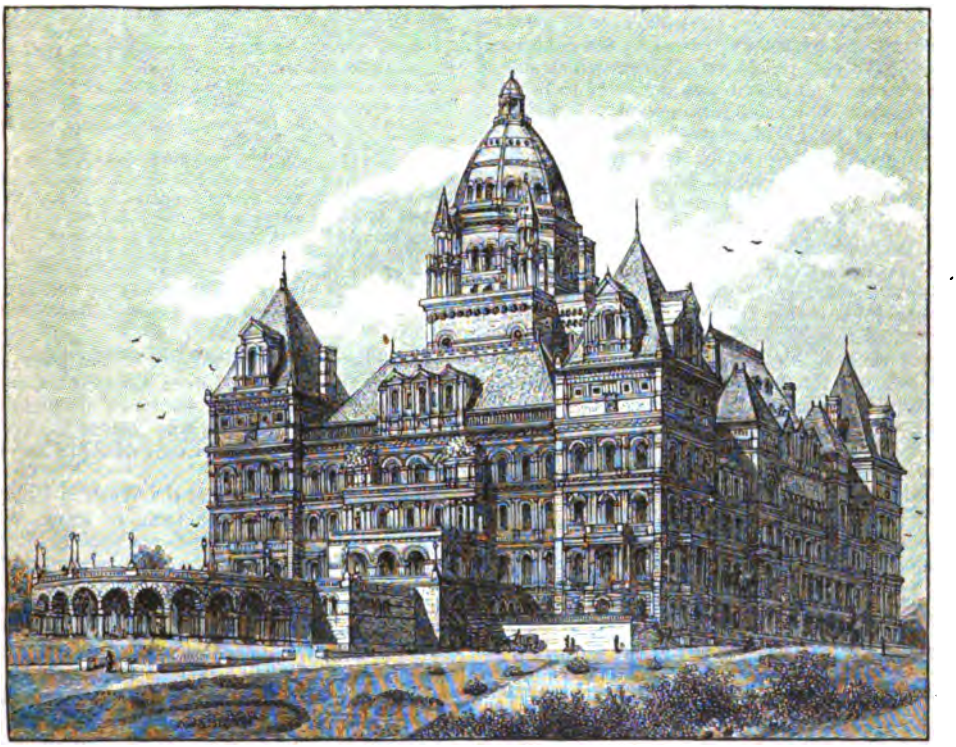
The following is the record of those killed or injured in the operation of the railroads in this State for the eight months ending Sept. 30th:

	Killed.	Injured.
Passengers	34	118
Employés	110	396
Other persons	178	146
Totals	322	660

Immigration. — The number of immigrants landed at Castle Garden for the eleven months ending with December 1st was 372,183, or 63,464 less than for the same months in 1882. The estimated number for the year was 390,000, against 455,450 during the previous year. During eleven months 4,818 immigrants were admitted to the hospital and refuge on Ward's island, of which 575 remained there on the 10th of December, 116 of them being insane. During the same period employment was found for 27,480, and 1,273 were returned to the countries they left as incapable of supporting themselves. The expenses of the Board of Immigration were met by $168,054.04, collected by the United States Treasury Department from the vessels landing immigrants, and $38,202.51 appropriated by the State. There was also $31,049.29 expended for repairs of State property on Ward's island, which was drawn from the State treasury.

National Guard. — The militia of the State, known as the National Guard, consisted on the 30th of September of 11,568 officers and enlisted men. A camp of instruction is held at Peekskill in the summer, on a ground containing one hundred acres, and leased by the State at an annual rental of $1,000. The lease expires May 1, 1885, and the State has the privilege then of purchasing the ground for $13,000. Over 3,500 men were in camp there from June 16th to July 28th.

The New Capitol.—Work on the new Capitol at Albany progressed favorably during the year. The rooms designed for the Court of Appeals in the east end of the building were finished. A contract was made on the 19th of June for the construction of the southeastern staircase, at a cost of $239,345.80, and it is expected to be completed by Sept. 15, 1884. The old Capitol and the State Library building were removed in preparing for the construction of the eastern approach to the new edifice. The State Library and Law Library were temporarily provided for in the new building, in which permanent rooms for them are to be ultimately furnished. When the new commissioner took charge of the Capitol, the granite and brick walls of the west end were unfinished. This wing extends 291 feet from north to south, and 62 feet from east to west, not including the space designed for the great staircase, 72 by 52 feet—all comprising about one fourth of the floor-space of the building. Before the close of the year the walls were completed and roofed over. The total amount expended upon the building to December 15th was $15,318,680.67. The amount expended from April 9th to December 15th was $900,481.23, leaving a balance on hand at the latter date of $99,518.-



STATE CAPITOL, ALBANY.

77. The men employed during the greater part of the year numbered 1,300 to 1,400.

Adirondack Forests.—A special committee of the Senate was appointed, under a resolution adopted May 2d, to ascertain what lands could be bought, and at what prices, adjacent to the forest-lands already owned by the State in the Adirondack wilderness, with a view to preserving such forests as were necessary to protect the sources of water-supply in that region. The subject was one on which there was considerable discussion during the year. It was said that much injury had already been done by the reckless destruction of forests by lumbermen and charcoal-burners, and by fires carelessly kindled by hunting and camping parties. There was a demand that the State acquire control over such lands as it was desirable to maintain in a wild condition, and prevent the further destruction of the forests within the area which fed the important streams of the State. The acquisition of lands by purchase, and the appointment of a commission to have charge of them, were urged. The Senate committee reported in January, 1884, in favor of preserving the lands already owned by the State, and establishing a public park, within which should be inclosed all that it was desirable to protect. It did not, however, recommend a direct purchase of land from private owners, as it was likely to fall into the hands of the State from non-payment of taxes, as much had already done. The subject is one on which the Legislature of 1884 is likely to act.

Telegraph Suits.—In a suit brought by the State against the Western Union Telegraph Company for taxes claimed to be due for the year 1881, under the act taxing corporations on their franchises and capital stock, a decision was rendered by the referee, Judge Samuel Hand, on the 28th of September, and judgment was entered in favor of the State for $178,397.26. The referee held that—

Under the new tax laws the company must pay a tax upon its franchise of a quarter-mill for each one per cent. of dividends declared during the year, computed upon its whole capital stock, and not merely upon that portion of such capital invested within the State, as claimed by the defendant. He followed the decision of the Court of Appeals in the case of the people against the Albany Insurance Company. The judgment was only for taxes due in 1881, and included $12,000 penalty for non-payment of the tax on the demand of the Comptroller. Other taxes due the State from the Western Union Company, in accordance with this decision, make the total amount recoverable from the corporation about $626,000. The law findings were:

1. That the said acts of 1880 and 1881 imposed a new and different system of taxation upon the defendant, as to taxes for State purposes, from any heretofore existing as to telegraph companies under chapter 471 of the laws of 1853, or any other statute; that by said acts the said defendant was subjected to a tax upon its franchise for State purposes of one quarter of a mill upon the whole capital stock for every one per centum of dividend declared during the year whenever these dividends reached six per centum, and not merely upon that portion of such capital invested within this State.

2. That the defendant has become liable to pay ten per centum of said tax imposed by the said acts in case of neglect or refusal to pay such tax within fifteen days after the 1st day of January, 1882.

3. That, in accordance with the decision of the Court of Appeals in the case of the people against the Albany Insurance Company, the only part of the dividend of $15,526,500 in stock declared March 26, 1881, to be estimated as the basis for the franchise tax imposed by the said statutes of 1880 and 1881, is the sum of $1,135,102.62 declared from the earnings and profits made by the company since the law took effect, June 1, 1880.

4. Although this last part of the dividend does not amount to six per centum upon the then capital stock, yet I conclude the tax is to be at the rate of one quarter of a mill for each one per centum of such dividend, because the entire dividends declared during the year, including the cash dividend, make together more than six per centum either upon the original capital, $41,000,000, or the subsequent capital, $80,000,000.

5. No part of the dividend in stock exchanged for the Atlantic and Pacific Telegraph Company's stock, under the principle of the Court of Appeals decision in the people against the Albany Insurance Company, can be taken as any basis for taxation of the franchise under the acts of 1880 and 1881, as that stock was purchased with earnings made before the date of these acts, and does not seem to have permanently increased in value since 1879, but has been exchanged on about the basis of value existing in November, 1879. I hold that the temporary fluctuations in value during the year of property previously wholly purchased from previous earnings of the company are not a basis for the imposition of this franchise-tax.

6. I hold that no part of the dividend of $58,858.50 in the stock of the company was from earnings or profits made during the year, or afforded any basis for an additional franchise-tax.

7. I find the plaintiff is entitled to recover from the defendant the said sum of $118,718.66, with interest thereon from the 15th day of January, 1882; also, the sum of $12,000; also, the sum of $28,377.56, with interest thereon from the said 15th day of January, 1882, and the sum of $2,837.76; and I direct judgment in favor of the plaintiff against the defendant for the aggregate sum of $161,938.98, principal, and $16,463.28, interest—making a total of $178,397.26, with costs of the action.

The question of the validity of the issue of stock by the Western Union Telegraph Company, to be distributed as stock dividends, which was made in 1881, was decided in favor of the company by the Court of Appeals on the 2d of October.

In a suit brought against the Western Union Company to restrain the issue of stock, the special term of the Superior Court of New York city had held that the consolidation with the other companies was lawful, and the issue of stock to pay for their franchises and property was valid. It was also found that there was no conspiracy in the case, and that the stock distributed as a dividend "was not a division, withdrawal, or payment to its stockholders" of the capital stock, and its issue was a proper and lawful exercise of corporate power under the circumstances. This decision was reversed at the General Term of the court, and the case was before the Court of Appeals on an appeal by the company from the judgment of reversal. Judge Earle, in rendering the decision, said: "There are no laws in this State prohibiting the making of a stock dividend, and there is no public policy which, in all cases, condemns such dividends. No harm is done,

provided the dividend is not a mere inflation."

Miscellaneous Incidents.—On the 18th of October the one-hundredth anniversary of the disbanding of the American army of the Revolution was celebrated at Newburg. There was a military parade in the streets of the town, and a naval display on the Hudson river, a general decoration during the day and illumination in the evening, and appropriate literary and festive ceremonies.

On the 20th of December a new railroad-bridge across the Niagara river, constructed on the cantilever principle, was opened. (See ENGINEERING.)

Loren B. Sessions, who had long been under indictment for alleged bribery or attempt to bribe a member of the Assembly during the senatorial contest of 1881, when he was a member of the State Senate, was acquitted at Albany on the 18th of October. (See "Annual Cyclopædia," 1881, NEW YORK. For further details of affairs of New York city, see that title in this volume.)

NEW YORK CITY. The financial condition of the city of New York has somewhat improved in recent years, though the expense of carrying on the municipal government has steadily increased. The total amount of the funded debt at the close of the year was $130,680,570.84; but against this was a sinking fund of $38,134,544.96, leaving the net indebtedness at $92,546,025.88—a decrease of $3,595,922.70 for the year. There were outstanding $2,953,600 of the revenue bonds of the year, which are issued in anticipation of receipts from taxes. The total amount of these bonds issued during the year was $16,324,800, against $19,247,300 in 1882; and the redemptions amounted to $13,371,200 for the issues of the year, and $4,962,600 for those of previous years which were all taken up. Stocks and bonds falling due in 1884 amount to $10,469,631.37. The credit of the city is shown by the fact that the first installment of "additional water stock" to the amount of $50,000, issued on account of the new aqueduct, redeemable in thirty and payable in fifty years, with 3 per cent. interest, was promptly taken at a premium of 1½ per cent.; loans on revenue bonds have been effected at 2½ per cent. Receipts for the sinking fund for the redemption of bonds amounted to $9,061,252.56 for the year, and payments from it to $7,891,061.89, leaving a balance of $1,170,190.67. Receipts of the sinking fund for the payment of interest were $2,763,199.37; payments, $2,679,528.20; balance, $83,671.17. The receipts of the city treasury for the year, including a balance of $3,390,884.55 from the previous year, and $20,998,866.70 from the issue of bonds, were $56,908,291.78; the payments were $54,262,086.89, including $18,364,734.40 for bonds redeemed, leaving a balance of $2,646,104.89. The total cash in the treasury from all balances at the end of the year was $3,899,966.73. The tax-levy of the year was $29,167,029.81, and the general tax-rate was 2·29 per cent. on $1,249,524,258 assessed value of real and personal property, and 2·0324 per cent. on $27,152,906 valuation of personal property of corporations doing business in the city, which are exempt from taxation for State purposes, except on real estate. The amount of taxes collected up to December 31st was $24,333,510.97, on which a rebate of $148,257.72 was allowed for payment before November 1st. The total assessed value of property for the year was $1,276,677,164, an increase of $43,200,765.67 over the previous year. The total appropriations for the year 1884, as allowed by the Board of Estimate and Apportionment, on estimates from the different departments, amount to $34,046,165.60, being an increase of $3,369,380 over those of the previous year. Of the full amount, $21,208,885.39 is apportioned by specific provisions of law, and is beyond the control of the Board of Estimate and Apportionment. The full city budget for 1884, compared with that of 1883 and with the estimates, is as follows:

OBJECTS AND PURPOSES.	Allowed in 1883.	Asked for in 1884.	Allowed in 1884.
	Dollars.	Dollars.	Dollars.
Mayoralty	30,000	30,000	30,000
Common Council	69,250	84,500	70,250
Finance Department	206,500	214,260	288,500
State taxes	3,348,970	4,252,577	4,252,677
Interest on city debt	8,022,857	8,105,884	8,010,917
Redemption of city debt	490,574	578,179	657,569
Armories and drill-rooms	80,750	80,750	80,750
Rents (leases in force)	53,675	53,066	53,066
Judgments	150,000	250,000	250,000
Law Department	149,678	149,828	148,678
Public Works	2,554,900	2,995,630	2,777,066
Public Parks	732,000	1,107,500	869,800
Charities and Corrections	1,506,000	2,107,627	1,774,105
Health	463,207	740,709	411,157
Police	3,426,130	3,883,013	3,601,584
Street-cleaning	1,000,000	1,184,337	1,050,000
Fire	1,585,745	1,686,129	1,686,129
Taxes and assessments	103,700	109,200	109,200
Board of Education	3,750,000	4,431,950	4,431,950
City College	135,000	135,000	135,000
Printing, etc	193,700	203,200	204,400
City courts	329,700	335,045	327,900
Judiciary	868,916	892,199	892,316
Coroners	50,000	50,000	50,000
Sheriff	50,000	60,000	72,000
Election	188,786	163,400	202,981
Preservation of records	28,550	50,385	46,725
Miscellaneous	143,242	185,428	496,841
Asylums, etc	1,029,953	1,118,686	1,094,749
Evacuation-Day	.....	20,000	20,000
Total	30,676,785	35,258,876	34,046,165
Deduct general fund			2,000,000
Total of the city budget for 1884			32,046,165

General Statistics.—The estimated cost of new buildings, for which plans were filed in the Building Bureau, for the year, was $43,214,346, the number of buildings being 2,748. This was an increase of 141 in the number of buildings, and a decrease of $1,578,840 in the aggregate cost as compared with the previous year. The cost of alterations in old structures for which plans were filed was $4,540,885, against $4,267,181 for the previous year. The growth in building operations for ten years is shown in the following:

Year.	Estimated cost.	Year.	Estimated cost.
1874	$16,667,414	1879	$22,507,822
1875	18,226,870	1880	29,115,385
1876	15,908,880	1881	43,891,300
1877	13,365,114	1882	44,798,186
1878	15,219,680	1883	48,214,346
Total ten years			$262,404,450

The number of fires occurring during the year was 2,168, against 2,001 in 1882; the losses by fire amounted to $3,517,326, a decrease of $678,640 from the previous year. The average loss for each fire was less than for seventeen years preceding. A school of instruction has been established in the Fire Department. One new company was organized to man a floating engine, the most powerful fire-boat in existence, 125 feet long and 25 feet beam. Five engine and two hook-and-ladder companies were equipped with a second set of apparatus. The police force of the city numbered 2,783 men on the 31st of December.

The average number of persons under the charge of the Department of Charities and Correction during the year was 11,334. The health statistics of the city were unusually favorable. The number of deaths was 33,958, a decrease of 3,966 from the previous year. The deaths in tenement-houses were 18,041; 502 persons died in the rivers and streets. There were three judicial hangings. Violence caused 1,325 deaths; small-pox, 12; measles, 716; diphtheria, 709; typhus fever, 15; typhoid fever, 470; cerebro-spinal meningitis, 227; diarrhœa (among children under five years old), 2,867; diarrhœa (all ages), 3,393; alcoholism, 218; phthisis, 5,260; heart-disease, 1,690; pneumonia, 3,158; solar heat, 83; apoplexy, 524; Bright's disease, 1,845. Of children under 1 year, 8,724 died; under 2 years, 10,246; under 3 years, 13,720. One hundred and twelve persons more than 90 years old died, among them 3 men and 17 women who were more than 100 years old. There were 61 homicides. One hundred and sixty-one persons—134 men and 27 women—committed suicide. Thirty-four persons were accidentally poisoned. Forty-three persons were accidentally suffocated. The following is the record of contagious diseases:

	1882.	1883.
Scarlet fever	6,312	3,920
Diphtheria	3,507	2,090
Typhoid fever	686	1,373
Typhus fever	207	71
Cerebro-spinal meningitis	236	289
Measles	4,687	3,893
Small-pox	708	26

The number of births recorded was 28,972; marriages, 11,556; against 27,321 of the former, and 11,085 of the latter, in 1882.

Defalcations in Public Offices.—In the early part of April it was discovered that a defalcation had occurred in the Finance Department of the city. Evidence was found among the papers of a deceased coupon-clerk, William B. Carroll, that there had been a practice going on for some time of leaving paid coupons uncanceled, and then selling them to brokers to be again presented for payment. On the 14th of May the comptroller, Allan Campbell, made a report to the mayor on the subject, in which, as the result of an investigation by the chief book-keeper of the department, he placed the loss at $148,630. It was his conclusion that the frauds began in July, 1879, and were carried on by Carroll alone until his death in September, 1882.

A report made to the mayor on May 19th by the Commissioners of Accounts, after a brief investigation, put the total loss at $169,460, of which $10,930 was credited to the year 1879, $17,257.50 to 1880, $66,732.50 to 1881, and $74,540 to 1882. The commissioners criticised the methods of the comptroller's office, and intimated that their investigation had been obstructed rather than assisted by the officials of the Finance Department. On the 4th of June Comptroller Campbell addressed a note to the foreman of the grand jury, requesting that a thorough investigation of the matter be made. In the mean time the Board of Aldermen had taken the matter up, and directed an examination to be made by a special committee. This occupied several weeks, and a report was made in which the lax methods of the office were criticised, and the theory was announced that the frauds had been conducted by Carroll alone by means of counterfeit coupons. Attached to the report were the following resolutions, which were adopted:

Resolved, That the Comptroller of the City and County of New York be and is hereby required to give a bond for the faithful discharge of the duties of his office in the sum of $200,000, with two or more sufficient sureties to justify in double the amount, under oath, before a judge of the Supreme Court, on due notice to the corporation counsel.

Resolved, That the system of accounting pursued in the Finance Department is inefficient, insufficient, and in violation of the charter.

Resolved, That the directions of the charter that regulate the receipts and disbursements of the city funds form a safe system of finance; that through their violation has the city suffered by official defalcations, and that their strict observance, in the opinion of the Common Council, will be ample guarantee against any loss in the future.

Resolved, That, entertaining no question of the legal liability of one or more of the municipal magistrates during any period of the three years' process of William B. Carroll's defalcations, for the whole or part thereof, it is hereby referred to the corporation counsel, under the evidence, to institute such action and take such legal proceedings against any one or more such magistrates as he shall be advised can be sustained at law.

The grand jury, having failed in an effort to secure the aid of expert accountants from certain banks of the city, accomplished little in the way of an investigation. It made a presentment, however, with these suggestions:

1. That if the payments of the city coupons had been made by a responsible bank or trust company, as was formerly the practice, no loss could have accrued to the city.

2. That if the payments for coupons had been made by the City Chamberlain as formerly, the city would have been protected from loss by the large bond of

the chamberlain, which the jury believe would apply to cases like the Carroll frauds.

3. This grand jury is of the opinion that a law should be passed prohibiting any issue of the city's indebtedness other than in registered form, and they recommend the conversion of all outstanding coupon bonds into registered stock.

4. From the testimony before the grand jury they believe that the system and methods of book-keeping in the comptroller's office can and should be so changed and improved as to make a repetition of the late coupon frauds an impossibility.

On the 26th of July Comptroller Campbell resigned his office on account of broken health. The resignation was accepted and took effect August 1st. On the 3d of the same month the mayor appointed his private secretary, Seth H. Grant, to the vacant office. The Commissioners of Accounts made a second and more extended investigation of the coupon frauds, submitting a report on the 8th of October. Their examination covered the period from 1872 to 1882 inclusive, and the fraudulent overpayment of coupons, beginning in 1874, was found to amount to $164,699.

In the month of September other irregularities were discovered in the Water Register's Bureau of the Department of Public Works, and in the Bureau of Arrears in the Finance Department. Two arrests were made in these cases, and indictments were found but not tried during the year. Two clerks and the auditor in the comptroller's office had been dismissed for negligence in connection with the coupon frauds, but the entire result of the manifold efforts at investigation was unsatisfactory. Finally, in November, a special grand jury was called for the Court of Oyer and Terminer, and was charged by Chief-Justice of the Supreme Court Noah Davis to make inquiry into all allegations of fraud and dereliction in the city departments, and of malfeasance in office under the city government. At the special request of the grand jury and the district attorney, $20,000 was included in the city appropriations for 1884 to cover the expense of expert assistance in this inquiry, which was going on at the close of the year. Two changes had occurred in the office of district attorney since the question of this inquiry came up. The Hon. John McKeon, the incumbent of the office, died, and Wheeler H. Peckham was appointed by the Governor to succeed him on the 30th of November. After holding the office little more than a week, Mr. Peckham concluded that the state of his health would not permit him to carry on its arduous duties at such a time, and he resigned on the 9th of December. On the following day Peter B. Olney was appointed to the place.

New Aqueduct.—The subject of an increased water-supply for the city occupied much attention during the year. The matter had been several times urged by the Commissioner of Public Works, and in 1882 he had submitted to the mayor a plan for a new aqueduct, prepared by the Chief Engineer of the Croton Aqueduct. The State Senate early in January adopted a resolution requesting the mayor to appoint a committee of citizens to act with himself in examining this plan, and to report upon its feasibility, the probable cost of the aqueduct, and the time necessary to carry the plan into execution. The mayor appointed as such committee the Hon. O. B. Potter, John T. Agnew, William Dowd, Amos F. Eno, and Hugh N. Camp. Public hearings were given, and the subject of the necessity of increasing the water-supply, the sufficiency of the Croton valley sources, and the merits of the new aqueduct scheme was fully investigated. A report was submitted to the Senate on the 7th of March, the conclusions of which were:

1. That the Croton water-shed is the amplest and most available source of supply for the city's wants.

2. That a new aqueduct capable of conveying 150,000,000 gallons of water daily should be built immediately.

3. That a storage reservoir or reservoirs should be constructed of suitable capacity to provide against all emergencies, and to provide a supply of water for the next twenty-five years.

4. That the work of constructing this aqueduct and storage reservoir or reservoirs should be surrounded with such safeguards as would insure immediate construction, and at reasonable cost to the city.

A carefully prepared bill was also submitted, which, with some modifications, was that passed by the Legislature. (See NEW YORK STATE, *Legislative Action.*) Strong efforts were made to prevent the change in the bill which took from the mayor the appointment of Aqueduct Commissioners, but without avail. The commission, provided for in the act of the Legislature, was organized in August, and began the consideration of the problem of a new aqueduct and an enlarged storage reservoir in the Croton valley. At the first regular meeting the Commissioner of Public Works submitted plans for the construction of a dam at Quaker Bridge, and for an aqueduct from the site of the dam to the Harlem river, near High Bridge, upon the line known as the "Hudson river route." That route met with serious opposition from property-owners throughout almost its entire length, and the commissioners finally came to a unanimous decision upon a modification of the "Hudson river route." The commissioners likewise unanimously determined to build the aqueduct of a size equal to a fourteen-foot cylinder.

The estimate of the Commissioner of Public Works of the cost of the project, on the plan submitted by him, was as follows:

Dam and reservoirs	$4,000,000
140,311 feet of aqueduct from dam to Harlem river, at an average of $60 per foot	8,418,660
2,320 feet tunnel across Harlem river, at $100 per foot	232,000
11,986 feet of aqueduct from Harlem river to Manhattan valley, at $50	599,300
4,000 feet of iron siphons across Manhattan valley, at $93.50	374,000
Gate-houses connected with siphons	100,000
9,788 feet of aqueduct from Manhattan valley to Central Park, at $60	586,980
Gate-house and connections to Central Park reservoir	100,000
Four waste-gates between dam and Harlem river	50,000
Total	$14,460,940

The modification of the route by the commissioners, and the increase of rock-tunneling, would somewhat enhance the cost of excavation, but would reduce that of land-damage. Expert opinions as to the cost of the proposed Quaker Bridge dam, and the time necessary for its construction, varied widely.

Opening of the East River Bridge.—On the 24th of May the great suspension-bridge connecting the cities of New York and Brooklyn, across the East river, was formally opened, with appropriate ceremonies, and was delivered into the charge of the two cities by the Board of Trustees, who had had the supervision of its construction. By the subsequent action of the authorities it was continued under the control of the same board. At first only the drives and footway were opened to passengers, and, the legal counsel of the Board of Trustees being of the opinion that they had no authority to make any part of it free, tolls were charged; the rate for foot-passengers being one cent, and for teams from five to twenty cents, according to size. Later in the year the railroad was opened, trains of two cars each being run by the cable system of traction, and a fare of five cents for each passenger being charged. At first the footway was used by great numbers of people, and on the 30th of May a panic was caused by the fall of a woman at the stairway leading from the New York approach to the central span, during which twelve persons were crushed to death, and thirty-five others were injured. After the novelty wore away, no trouble was occasioned by crowds.

(For an account of this undertaking, see ENGINEERING, in the present volume.)

Evacuation-Day.—The one-hundredth anniversary of the final evacuation of the city by the British troops, which occurred on Sunday, the 25th of November, was celebrated on the following day. There was a military and civic parade, in which the President of the United States and other prominent Federal officers, the Governor of the State and his staff, the Governors of several other of the original thirteen States, and the mayor and other officers of the city participated. There was also a parade of steamers and tug-boats in the harbor. A bronze statue of Washington was unveiled on the steps of the sub-Treasury building, where an address was delivered by George William Curtis, and the celebration closed with banquets and illuminations in the evening.

Rapid Transit.—Near the end of the year a new Commission was appointed by the mayor under the rapid transit act of 1875, to consider plans for additional lines of railroad in the city. The cable system of propulsion and the use of improved motors were prominent subjects of consideration, as well as new routes proposed for surface and elevated roads.

The affairs of the existing elevated roads were subject to considerable litigation. The taxes assessed by the city for five years successively, amounting to $2,286,836.82, remained unpaid, and the questions involved were still in court. The agreement made in November, 1881, by the directors of the three companies, whereby they were to be merged into one, the stock of the New York Elevated Railroad to be replaced by first-preferred stock of the Manhattan Company and that of the Metropolitan by second-preferred stock of the same corporation, was still in litigation, certain stockholders of the Metropolitan Company having brought suit to have it set aside, and obtained an injunction pending the trial of the action. In a suit against the Manhattan and New York companies for damage to private property in front of which the structure of the latter line was set up, it was decided that the plaintiff could recover. A scheme for an underground railroad beneath Broadway to Union Square, and thence northward by two lines, to be known as the Arcade Railway, has been formed and urgently advocated.

New Parks.—In accordance with an act of the Legislature of this year, a commission was appointed by the mayor to select and locate lands for public parks in the twenty-third and twenty-fourth wards of the city, north of the Harlem river. The commission made a report to the Legislature of 1884, accompanied by a bill providing for the acquisition of the necessary territory by the city. The tracts selected were an area of 1,070 acres bordering on the line of Yonkers, to be known as Van Cortlandt Park; an area of 653 acres on the Bronx river, to be called Bronx Park; and 1,700 acres at Pelham Bay, on Long Island Sound, some distance beyond the present limits of the city. These were to be connected by broad parkways, that from Van Cortlandt to Bronx Park being 600 feet wide and one mile in length, and that from Bronx to Pelham Bay Park 400 feet wide and 2¼ miles long. A smaller space of 135 acres, to be known as Crotona Park, was selected below this series, to be connected with Bronx Park by a parkway. Two smaller spaces, of 38 and 25 acres respectively, and to be known as Claremont and St. Mary's Parks, were located still nearer the Harlem river. It was estimated that the entire area selected, 3,800 acres, could be acquired at an average cost of $2,000 per acre, and it was said that their natural attractions were such that there would be little occasion for immediate embellishment. The park on Pelham Bay, with its islands, coast indentations, and picturesque views, it was claimed, would excel any pleasure-ground in the world for beauty and healthfulness. Regard was had in the selection for the purposes of public reservoirs, parade-grounds, botanical and zoölogical gardens, and a site for great fairs or exhibitions. The bill submitted to the Legislature authorizes the Mayor, Aldermen, and Commonalty of New York to take possession of the pieces of land located for parks, and to make application for the appointment of commissioners of estimate. On the confirmation of the report

of the commissioners, the mayor, etc., are authorized to take possession of the property, and keep the same open as public parks. The mayor, etc., within four months after the confirmation of the report of the commissioners, are required to pay for the property taken for the parks, and to issue city four per cent. bonds to produce the money required.

City Politics.—Franklin Edson was elected Mayor of New York in 1882 through a union of the three Democratic factions known as Tammany, Irving Hall, and the County Democracy, against a citizens' movement whose candidate was William Dowd. The mayor's appointments, at the beginning of his term, were avowedly determined by the necessity of securing for them the approval of the Board of Aldermen, whose members were in a peculiar sense the representatives of the various local political factions. He made an effort to secure action from the Legislature which would give the mayor the power of appointment and removal of heads of departments untrammeled, but, not succeeding in this, he professed to act on the principle of making the best of the existing situation, and avoiding contentions with the aldermen. His appointments throughout the year provoked criticism, on the ground that they aimed at satisfying the demands of all factions, so far as they could be reconciled, rather than promoting the highest efficiency of the public service.

During the political canvass of the autumn an effort to unite the Democratic factions failed, so far as delegates to the State Convention were concerned, but they all supported the general ticket. The city and county nominations they divided so as to agree on a common ticket, but in regard to legislative and aldermanic nominations they were divided. (See NEW YORK STATE, *Political Canvass.*) A plan for reorganizing the Republicans of the city was formed and carried out during the year. It was devised by a Committee of Eighteen, formed partly from the existing City Central Committee and partly of persons outside the old organization. The plan included a full enrollment of the Republican voters of the city in the several Assembly districts and the choice of delegates to a County Committee, members of district committees, enrolling officers and inspectors for the next year, and delegates to all conventions by the persons thus enrolled. Under the old organization, in order to vote at primary meetings, the voter was obliged to join an association, sign its constitution, and pledge himself to support all candidates of the party regularly nominated. Under the new plan it was only necessary to be enrolled under a declaration of intention to act with the Republican party. The enrollment took place after the election in November, and resulted in placing 23,454 names on the rolls, something more than twice the membership of the old associations, but much less than half the ordinary Republican vote of the city.

Much dissatisfaction with the municipal administration was developed during the year in consequence of the frauds that were exposed in some of the departments, and charges of corruption and extravagance. On the meeting of the Legislature of 1884, the question of charter reform was again agitated, and two committees, one of the Senate and one of the Assembly, set about investigating the condition of the city government.

NEW ZEALAND. See AUSTRALIA and POLYNESIA, p. 37.

NICARAGUA, a republic of Central America. The President is Dr. Adan Cárdenas. His Cabinet, in 1883, was composed of the following ministers: Finance, War, and Navy, Col. J. Elizondo; Justice and Public Worship, Dr. F. Delgadillo; Foreign Affairs, Señor F. Castillon; Interior, Señor J. Chamorro.

Finance.—The income in 1882 was $1,639,000, while the outlay was $1,510,000. The national indebtedness is altogether internal, and does not exceed $700,000, in the shape of fundable bonds, for which the import duties are mortgaged, while $222,000 are payable in cash. In 1883 the debt amounted to $920,258. The amount of duties collected by the custom-house in the fiscal year 1881–'82 was $1,275,507, against $906,156 in 1880–'81.

Railroads.—There were in operation in 1882 about 55 kilometres of railroad, and 18 were then being built.

Telegraphs.—The number of offices in 1882 was 26; the length of lines, 777 miles, with 800 miles of wire. There were dispatched that year 64,544 private telegrams, and 16,601 were sent by the Government. There was collected the sum of $18,733; and spent, $20,789.

Postal Service.—The number of post-offices in 1882 was 13; expresses, 79; and postal agencies, 8. There passed through the post-office 177,109 private letters, 37,273 Government dispatches, 21,666 postal-cards, 39,001 registered letters, 424,955 newspapers, and 515 sample packages; together, 645,919 items of mail matter, producing an income of $9,232, and involving an outlay of $15,344.

Commerce.—There entered Nicaraguan ports in 1882 altogether 213 vessels, measuring 256,000 tons, and comprising 156 steamers, 8 of which navigated under the German flag, 2 being men-of-war, and 57 sailing-vessels, of which 11 were German.

	Import.	Export.
1875–'76	$1,982,000	$3,239,000
1877–'78	2,181,000	2,595,000
1879–'80	2,986,000	3,708,000
1881–'82	3,362,000	4,022,000

The products chiefly exported were: India-rubber, 14,000 quintals of 101½ pounds American, worth $800,000; 7,300,000 pounds of coffee, worth $530,000; gold and silver bullion, fustic, indigo, skins, hides, and cedar-wood.

Interoceanic Canal.—The following is a translation of the law adopted in October, 1883, by

the Nicaraguan Congress, for the purpose of obtaining a joint guarantee from the Central American states which may assist in promoting the construction of the Nicaraguan Canal:

ARTICLE I. The Government is authorized to unite with the other republics of Central America in guaranteeing that the net profits of the Nicaraguan Canal shall never amount to less than 3 per cent. on the capital employed in its construction, which shall not exceed $75,000,000. This guarantee shall last twenty years from the date on which the canal shall be completed and opened to traffic.

ART. II. The Government is consequently authorized to guarantee a profit of 3 per cent. net upon $20,000,000 of the capital fixed by the previous article, either in association with other governments, in the event of their guaranteeing the same rate of interest on the remainder of the capital, or singly, should the others not agree to act; but it must be stipulated that the expenses of construction and maintenance shall not exceed $1,000,000 annually, and that any deficit in the amount of profits which shall have been recognized and paid by Nicaragua will be returned by the company from any excess of profits which may be subsequently obtained over and above the 3 per cent. which is guaranteed.

ART. III. The Government will subject this concession of its guarantee to the conditions it may consider necessary to establish in favor of the republic, and in order to determine the actual cost of the canal and the amount of profits.

ART. IV. The Government is also authorized to make treaties with the other Central American republics, establishing the aforesaid guarantee, and granting to their citizens the same privileges which are reserved to Nicaraguans by the concession of April 24, 1880; and to arrange with the company holding the concession, an additional contract stipulating the conditions containing the collective guarantee of the Central American states, or that of Nicaragua alone, as the case may be.

On December 20th Secretary Frelinghuysen made public a letter sent by him to Minister Lowell, concluding the discussion with the Government of Great Britain of the Clayton-Bulwer Treaty. The letter is dated Nov. 22, 1883. On the question of the failure of the plan for an interoceanic canal, on which the treaty was based, Mr. Frelinghuysen says:

Lord Granville raises the point that no time was fixed by the convention within which such interoceanic communications were to be made. While this statement is correct, it is also true that it was contemplated that the canal was about to be constructed at the time the treaty was negotiated, and that the survey therefor was then made, and that thirty-three years have elapsed without Great Britain rendering the consideration on which the treaty was based, and this failure, we think, affects the treaty in the same manner that a failure by Great Britain to give the consideration within a definite time, had one been fixed by the convention, would have affected it.

In regard to the provision that neither the United States nor Great Britain shall colonize or exercise any dominion over any part of Central America, Mr. Frelinghuysen says:

This is a most important provision. It is one of a cluster restraining one nation from having any advantage over the other in regard to the police of the canal, such as the provision against alliance, against occupation and fortification, and against taking advantage of any intimacy or influence; and yet it is claimed that the treaty does not prohibit the existence of a large regularly organized British colony in Central America, while it does prohibit the United States from having any possession or colony there. The color for this claim is that, while the stipulation that neither of the two governments should colonize any part of Central America is most conspicuous, the declaration of Sir Henry Bulwer prior to the exchange of the ratifications of the treaty states that "her Majesty does not understand the engagements of that convention to apply to her Majesty's settlement at Honduras or its dependencies." This declaration can not be held to authorize the subsequent colonization by her Majesty's Government of a territory as large as three of our smaller States. The declaration was made not to change or vary the treaty, but of abundant caution that it might not be misunderstood. The meaning of the declaration, we think, is that a mere settlement of British subjects for the purpose of cutting mahogany and logwood at Honduras under Spanish-American sovereignty was not to be considered a British colony, and thus be a violation of the treaty, and I fail to see how, since the exchange of the ratifications of the treaty, the organization of a colony, with a full colonial government under the British sovereignty, can be looked upon as authorized or allowed either by the treaty or by Sir Henry Bulwer's declaration.

The Volcano of Ometepe.—A letter from Nicaragua dated June 12, 1883, said: "The volcano of Ometepe, in Lake Nicaragua, is at present in eruption. On May 1st, at 10 A. M., a frightful and terrifying subterranean rumbling was heard, which lasted between two and three minutes, but no outbreak was visible. On the following day a number of people climbed to the summit of the volcano, to find that the crater had increased in size, and was about thirty-five yards in length and three in width, but its depth could not be calculated. Around it were strewed large quantities of stones and rocks, covered with slate-colored mud; masses of these same materials had poured down in a southwesterly direction, forming a bed three hundred or four hundred yards in length, and ashes were scattered in all directions. Two days afterward, May 4th, a series of terrifying eruptions, accompanied by prolonged rumblings, occurred. At about 2.30 P. M., the earth and rock in the vicinity of the crater were seen to break, lava poured forth, and from it burst upward a thick column of lead-colored smoke, which sent the terrified villagers flying to the churches, in the belief that the whole island was about to be destroyed. Fortunately, however, no damage was done, as the lava followed a direction where there are no inhabitants, and the ground is not cultivated."

On June 19th another, more violent, eruption ended in the formation of a new crater, accompanied by a prolonged earthquake and an overflow of lava in the direction of Las Pilas. Two days later the mountain was rent in various other places, and from these rents red-hot lava flowed in all directions. Many boats were sent to the island from villages on the mainland, to save the unfortunate people. As some of the fugitives had sought shelter on a hill suddenly surrounded by a stream of glowing lava, no help could be extended to them, and they perished in great agony. The island was converted by these eruptions into one mass of liquid ignited lava, and thereby rendered entirely uninhabitable.

NORTH CAROLINA. State Government.—The following were the State officers during the year: Governor, Thomas J. Jarvis, Democrat; Secretary of State, William L. Saunders; Treasurer, John M. Worth; Auditor, William P. Roberts; Attorney-General, Thomas S. Kenan; Superintendent of Public Instruction, John C. Scarborough; Adjutant-General, Johnstone Jones; State Librarian, Sherwood Haywood; Governor's Council, the Secretary of State, Treasurer, Auditor, and Superintendent of Public Instruction; State Board of Education, the Governor, Lieutenant-Governor, Secretary of State, Treasurer, Auditor, Superintendent of Public Instruction, and Attorney-General. Department of Agriculture: Commissioner, Montford McGehee; Secretary, P. M. Wilson; Geologist, Prof. W. C. Phillips; Chemist, Prof. C. W. Dabney; Superintendent of Fish and Fisheries, S. G. Worth. Supreme Court: Chief-Justice, William N. H. Smith, of Wake; Associate Justices, Thomas S. Ashe, of Anson, and Thomas Ruffin, of Orange. Judge Ruffin resigned in September, and A. S. Merrimon was appointed.

Legislative Session.—The Legislature—consisting of 34 Democrats, 15 Republicans, and one Liberal in the Senate, and 70 Democrats and 50 Republicans in the House—convened on January 3d, and adjourned on March 9th. Among the acts passed are the following:

To incorporate the Wilmington, Point Caswell, and Clinton Railroad and Steamboat Transportation Company.

To authorize a sale of the State's stock in the Cape Fear and Yadkin Valley Railway Company, and provide for the speedy completion of the same.

To amend an act to provide for the sale of the State's interest in the Western North Carolina Railroad Company, and for other purposes.

Amending the charter of the Granville Railroad Company.—Changes its name to Atlantic and Western Railroad Company.

To empower counties, townships, cities, and towns to subscribe to the capital stock of the Albemarle and Raleigh Railroad.

To provide a residence for the Governor.

To incorporate the Insane Asylums of the State, and for other purposes.

To change the name of the Edenton and Norfolk Railroad Company to Carolina and Chesapeake Railroad Company.

To amend the charter of the Watauga and Caldwell Narrow-Gauge Railroad Company.—Changes its name to North Carolina and Tennessee Railroad Company.

To facilitate the construction of the Newbern and Beaufort Canal.

To change the fiscal year of the State government, and for other purposes.—Changes time of closing the fiscal year to the 30th day of November.

To provide for the support of the Institution of the Deaf, Dumb, and Blind.

To make appropriations for the several insane asylums of the State.

To incorporate the Black Mountain Railway Co.

To amend the landlord and tenant act.

To change the name of the Elizabeth City and Norfolk Railroad Company to Norfolk and Southern Railroad Company.

To incorporate the Wilmington, Chadbourn, and Conwayborough Railroad Company.

To increase the number of justices of the peace.

To authorize the Seaboard and Raleigh Railroad Company to change its corporate name.

To authorize the registration of the State bonds.

To authorize the Virginia and Carolina Railroad and the Palmetto Railroad Companies to construct and operate their roads within the State.

To repeal the prohibition law of 1881.

To incorporate the Asheville and Burnsville Railroad Company.

The State was divided into nine congressional districts.

Changes were made in the school law, the Board of Agriculture was reorganized, and the Code was adopted. The new Board of Agriculture consists of thirteen members, four *ex officio* and one from each congressional district, chosen by the Legislature. It was constituted as follows: Gov. Jarvis; the President of the State Agricultural Society, T. M. Holt; the President of the University, K. P. Battle; the President of the North Carolina State Grange, W. R. Williams; and by districts: 1. R. W. Wharton, of Beaufort; 2. Dr. Brooks, of Wilson; 3. James A. Oates, of Sampson; 4. W. F. Green, of Franklin; 5. L. W. Anderson, of Stokes; 6. John Robinson, of Anson; 7. A. Leazar, of Iredell; 8. Burwell Blanton, of Cleveland; 9. C. D. Smith, of Macon.

On January 16th Matt W. Ransom, Democrat, was re-elected United States Senator by a vote of 108 against 47 for William Johnson, Liberal.

Resources and General Condition.—There are about 6,500,000 acres of improved land in North Carolina and 16,000,000 of unimproved land. The State produces 450,000 bales of cotton, 30,000,000 bushels of corn, 30,000,000 pounds of tobacco, and exports wheat, rice, oats, ground-peas, etc.

It is estimated that in fifteen counties alone there are now standing 5,000,000,000 feet of long-leaf pine.

When the debt is all arranged it will amount to less than $3,600,000, bearing 4 per cent. interest. There is, besides, a debt of about $2,750,000, bearing 6 per cent. interest—the interest of which will be met by dividends from the North Carolina Railroad.

The assessment of property in the State in 1882 was $168,000,000. The valuation in 1883 shows an increase of nearly 20 per cent. It will reach nearly $200,000,000. The State and county taxes combined amount to 66¾ cents on the hundred dollars.

The crop of corn in 1879 was 28,019,839 bushels; in 1882 it was 34,260,700; the crop of wheat in 1879 was 3,397,395 bushels; in 1882 it had risen to 5,494,800.

The cotton counties raise more corn per inhabitant than the average for the entire State, and pay more per acre for fertilizers.

The State has two coal districts—the Dan river, mainly in Stokes and Rockingham counties, near the middle of its northern boundary; and Deep river, mainly in Chatham county, near the center of the State.

The western half of the State is well dotted

over with valuable iron deposits, most of them wholly untouched. Iron exists in workable beds in thirty counties; but, for convenience, we may group the greater number of the most valuable known mines into four geographical divisions: First, the iron-regions of Granville, Chatham, Guilford and Stokes counties, lying to the north of the center of the State, within reasonable distance of the North Carolina coal-fields. Next the deposits of Gaston, Lincoln, and Catawba counties, lying to the west of the center of the southern border. In the north-west corner of the State, in Ashe, Caldwell, and Mitchell counties, is another series of beds. Finally, in Cherokee county, in the extreme southwest corner of the State, are deposits as yet but little known.

Copper is found in Person, Granville, Davidson, Chatham, and Ashe counties. A large portion of the North Carolina gold-mines, or mines which at the surface carry only gold, grow rich in copper as they approach the water-line, until, in many cases, copper becomes the metal of greatest value. This is especially true of the gold deposits of Guilford, Cabarrus, and Mecklenburg counties.

Gold-mining is now most actively prosecuted in Davidson county, but is carried on also in Rowan county.

Finances.—The chief items in the receipts are:

Public taxes	$528,751 34
Tax on bank-stock	8,135 01
Sale of Confederate States bonds	9,527 50
From Western North Carolina Railroad	29,460 00
Drummers' license-tax	55,200 00
Fees from Secretary of State	6,143 60
Fertilizers, license-tax	42,000 00
Tax on insurance companies	18,193 93
Interest on bonds of Western North Carolina Railroad	59,500 00
Sewing-machine license-tax	2,400 00
Stationery, from counties	2,725 52
Other items swell the total receipts to	755,881 44

DISBURSEMENTS.

Agricultural Department	$43,500 00
To disabled Confederate soldiers	1,680 00
Contingent expenses	17,324 00
Convict account, expense of conveying to Penitentiary	8,051 21
Department of Public Instruction	2,184 80
Auditor's Department	2,975 96
Executive Department	4,800 00
Fugitives from justice	1,955 30
Insane Asylum, Raleigh	65,500 00
Insane Asylum, Morganton	65,000 00
Insane Asylum, Goldsboro	28,000 00
Institutions for Deaf, Dumb, and Blind	34,000 00
Interest on consolidated debt of the State	88,870 00
Interest on bonds of Western North Carolina Railroad	58,555 00
Judiciary	38,069 09
Normal schools	6,500 00
Oxford Orphan Asylum	5,000 00
Penitentiary	110,000 00
Public printing	11,999 74
Quarantine regulations	1,451 55
Roster of State troops in Confederate service	2,018 00
Department of State	4,848 05
Treasury Department	6,445 99
University of North Carolina	12,000 00
Other items swell the total disbursements to	629,112 37

The item of $58,555 paid out on account of interest on the mortgage bonds of the Western North Carolina Railroad is offset by the item of $59,500 received from that company for that purpose. The item of $29,460 received from the Western North Carolina Railroad is the money paid for the convicts. The actual disbursements were, then, $570,000.

Education.—The receipts from taxation for schools in 1882 were $421,499.89, of which the polls paid $174,732.97, and property $162,095.-88. There was derived from licenses $51,662.-87, from fines and penalties $13,205.98. There was on hand from 1881, $292,628.23.

There are 463,160 (176,886 colored) children of school age in the State, of whom 233,071 (88,236 colored) were enrolled as pupils. This shows an enrollment of only 50 per cent. of the children. The average attendance was only 132,546, or about 28 per cent. The number of schools taught were 3,578 white schools and 1,750 black. The average length of the school terms was three months. The pay of the white teachers averaged $24 a month, and that of the colored teachers $20 a month. The number of teachers was 5,173.

Congressional Election.—On Nov. 20, an election was held in the first district to fill the vacancy occasioned by the death of Walter F. Pool. The Democratic candidate was Thomas G. Skinner; the Republican candidate, Charles C. Pool. Mr. Skinner was elected by a majority of 777. Mr. Skinner's seat was contested, on the ground chiefly that he was elected from the new district, and not from the district in which the vacancy existed. The old district included Bertie, a Republican county, for which Carteret, a Democratic county, had been substituted in the new.

NOVA SCOTIA, an eastern province of the Dominion of Canada. Area, including Cape Breton, 21,731 square miles. Capital, Halifax. The peninsula is the "Acadia" of early French settlement. Cape Breton island forms part of the province, being separated from it only by the narrow strait of Canso.

Soil and Climate.—Unlike its sister province on the west, Nova Scotia has an excellent soil; but, also unlike it, possesses a very foggy climate, which renders the ripening of wheat difficult. Neither of these provinces depends on farming for a revenue, or even for anything more than a means of livelihood. Nova Scotia has an equable temperature throughout the year. The chief drawback is the fogs along the Atlantic coast. These are caused by the shore or cold currents from the north encountering the Gulf Stream. The colder waters sink under those of the Gulf Stream, and thus do not affect the climate directly. The ports are open throughout the winter, and ferries run continually to and from Prince Edward island.

Ports.—In order of importance, the ports of Nova Scotia rank as follow: Halifax, Yarmouth, Pictou, Truro, Sydney, Windsor, Antigonish, Amherst, Annapolis, Cornwallis, Lunenburg, Digby, Weymouth, Pansboro, Lockeport, Arichat, Baddeck, Barrington, Bridgetown, Guysboro, Liverpool, Londonderry, Margaretsville, Hawkesbury, Hood, Medway, Shel-

burne, and Canso. These places carry on a considerable trade, both coasting and foreign.

Fisheries.—The total export of the produce of Nova Scotia in 1882 was $8,860,769, of which $4,437,364 belongs to fisheries; $2,661,118 of this is on account of dry salted codfish; $32,854 of wet salted codfish; $340,761 of pickled mackerel; $296,761 of pickled herring; $816,612 of preserved lobsters. The United States received $1,353,773 of the whole value; Great Britain, $635,437; British Guiana, $150,415; West Indies, $2,141,743.

Lumbering. — The exports of the forest amounted to $1,587,947. Of this, $120,664 consists of fire-wood, shipped to the United States; $22,744, hop and telegraph poles; $745,517 of lumber, deals, etc.; $495,262 of planks, boards, etc.; $20,584 of masts and spars; $21,427 of shingles; $28,827 of railway-ties; $42,316 of birch square timber, etc.

Farming.—The export product of grazing reached the sum of $836,052; of agriculture, $830,804 — a total of $1,666,856. Of this, $127,382 is fruits exported to England; $590,447 is potatoes, nearly all to the United States; $15,612 is oats, etc.

Mining.—The mining products of Nova Scotia consist chiefly of coal, gypsum, manganese, and marble. The coal exports were $328,498 for 196,905 tons; manganese-ore, $17,796; crude gypsum, $106,856; marble, $16,253.

Manufactures.—These amount to only $487,503, and are chiefly: leather, $153,542; ships, $63,171; grindstones, $14,793; junk and oakum, $14,285; boots and shoes, $24,476.

Education.—The essential features of the system of public education in Nova Scotia were incorporated in the provincial statutes in 1865. Under the provisions of the "Act relating to Public Instruction," the supreme control of the schools is vested in the Executive Council, which, when dealing with educational matters, is known in law as the Council of Public Instruction. The Superintendent of Education, who is appointed by the Lieutenant-Governor, is chief administrative officer.

The local management of the schools is intrusted to a board of three trustees in each section. The trustees are elected in annual meeting by the rate-payers of the section. They have power to employ and dismiss teachers, and are a body corporate for the prosecution and defense of all actions relating to the school or its affairs.

The law provides for the establishment in each county town of a superior institution, under the designation of County Academy. Practically this name denotes the most advanced, or high school, department of the town schools. The regulations require that this department shall be open, free of charge, to all youth of the county who are able to pass a specified entrance examination. A county academy receives from the Legislature a maximum grant of $600 annually.

The Provincial Normal School occupies magnificent premises at Truro, almost the exact geographical center of the province. Connected with the normal school are excellent model schools. The average attendance of pupil-teachers is about 120.

Regulations of the Council of Public Instruction provide for the organization of a Provincial Educational Association and of Teachers' Associations in the various inspectoral districts. The Department of Education issues semi-annually a "Journal of Education," which is the medium of all official notices emanating from the Council of Public Instruction.

The report of the Superintendent of Education for 1882 shows the attendance during that year to have been as follows: Winter term, 76,888; summer term, 81,119. The total number of pupils registered during the year was 95,912. The number of teachers employed during the winter term was 1,890. The total expenditure on public schools for the year was $571,389.64.

In 1883 the Legislature passed "an act to secure better attendance at the public schools," which embodies the principle of compulsory education. It has a local-option clause. The province possesses excellent institutions for the training of deaf-mutes and the blind.

The collegiate or university system of Nova Scotia is chiefly denominational. There are five institutions that confer degrees. The oldest of these, under the control of the Church of England, is the University of King's College at Windsor, founded in 1788, and granted a royal charter by George III in 1802. Dalhousie College, Halifax, is a quasi-provincial institution. Its resources have received large additions during the past few years. It was originally founded in 1828 by the Earl of Dalhousie, but its true history as a university dates from 1862, when it received from the Legislature its present constitution. Acadia College, Wolfville, is under the management of the Baptist denomination. It was founded in 1844. St. Francis Xavier College, Antigonish, and St. Mary's College, Halifax, are Roman Catholic. For many years the question of grants to denominational colleges provoked much controversy, excited much bitter feeling, and had an important bearing in some cases on the fate of governments and parties. In 1881 it was decisively settled by the withdrawal of grants from all the colleges.

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OBITUARIES, AMERICAN. Atwater, Lyman H., an American clergyman, born in New Haven, Conn., Feb. 20, 1813; died in Princeton, N. J., Feb. 17, 1883. He was graduated at Yale College in 1831, entered Yale Theological Seminary, and was licensed to preach in 1834. He became pastor of the Congregational society in Fairfield, Conn., where he served for nearly twenty years, and was known as a contributor to religious periodicals. In 1854 he was appointed Professor of Philosophy in Princeton College, with which institution he continued his connection until his death. He edited the "Princeton Review" for several years.

Baker, William M., an American novelist, born in Washington, D. C., in 1825; died in South Boston, Mass., Aug. 20, 1883. He was graduated at Princeton College, at the age of twenty-one, studied theology there, and then, joining his father in Texas, was a pastor in Galveston, and subsequently in Austin, from 1850 to 1865. After fifteen years of service in Texas, Mr. Baker accepted a charge at Zanesville, O., whence he was transferred to Newburyport, Mass. In 1874 he became pastor of a Presbyterian church in South Boston. Although earnestly devoted to his duties as a minister, Mr. Baker found time for contributing frequently to periodicals. His most important work was "Inside: A Chronicle of Secession," written secretly during the war, while he lived in Austin, and giving a peculiarly vivid picture of Southern life and sentiment at that time. It was published anonymously. His other works include "The Virginians in Texas," "The New Timothy," and "His Majesty Myself." His latest work was entitled "The Ten Theophanies, or, the Manifestations of Christ before his Birth in Bethlehem." It was completed shortly before his death, and is regarded by those who knew him as in some sort a record of the writer's own religious experiences and struggles.

Barnes, Joseph K., Surgeon-General of the United States Army, born in Philadelphia July 21, 1817; died in Washington, D. C., April 5, 1883. He studied in the medical department of the University of Pennsylvania, and was graduated in 1838. For two years he was engaged in practice in his native city, and in 1840 was appointed an assistant surgeon in the army, and assigned to duty at West Point. At the close of 1840 he was transferred to Florida, where for two years he was connected with Gen. Harney's expedition against the Seminoles. Thence, in 1842, he went to Fort Jessup, Louisiana, where he served four years. When the Mexican War began, Dr. Barnes was appointed chief medical officer of the cavalry brigade, and he was in active service all through the war. He was assigned to duty again at West Point in 1854, and remained there for several years. At the outbreak of the civil war, Surgeon Barnes, then in Oregon, was among the first summoned to Washington. In 1861 he was assigned to duty in the office of the surgeon-general at Washington, where his experience in field and hospital service was of great value. Two years later he was appointed to a medical inspectorship, with the rank of colonel, and in September, 1863, he was promoted to fill the vacancy in the surgeon-general's department, with the rank of brigadier-general. He served with honor during the war, and in 1865 was brevetted major-general. He was placed on the retired list the year before his death.

Beard, George Miller, an American physician, born in Montville, Conn., May 8, 1839; died in New York, Jan. 23, 1883. He was graduated at Yale College in 1862. His medical training was obtained partly at Yale, but chiefly at the College of Physicians and Surgeons, New York, where he obtained his degree in 1866. From this time he gave special attention to diseases of the nervous system. He also introduced several new methods of electrization, and was the first to point out and exemplify the tonic effects of electricity. In 1867 he published, with Dr. Rockwell, a work on "General Electrization," and in the same year a valuable paper on "The Longevity of Brain-Workers." Dr. Beard, during a comparatively short life, made many contributions to the literature of his profession, in part by translation and in conjunction with others. He was a diligent student, and clear and forcible writer. In 1871 he published, with Dr. Rockwell, "Medical and Surgical Uses of Electricity," and the same year issued two popular treatises on "Stimulants and Narcotics," and on "Eating and Drinking." In 1874 he entered upon a careful examination of animal magnetism, spiritualism, clairvoyance, and mind-reading, in their relation to the nervous system. He explained the performances of the somewhat famous Eddy brothers, and also of Brown the "mind-reader," maintaining that what was called mind-reading was the unconscious action of mind on body. Dr. Beard also studied carefully the functional nervous disease known as inebriety; and in 1879, when he was a delegate to the British Medical Association at Cork, he presented a paper on "Inebriety and Allied Nervous Diseases of America." Besides frequently contributing to periodical literature on topics relating to psychology and the nervous system, he delivered popular lectures on psychological and neurological subjects.

Berrien, John M., an American naval officer, born in 1802; died in Philadelphia, Nov. 20, 1883. On receiving his appointment as midshipman, he joined the frigate Constellation; subsequently he was transferred to the sloop

of war John Adams, then to the frigate Guerrière, and afterward to the frigate Brandywine. Having served in other vessels also, he received his commission as lieutenant, Feb. 9, 1837, and in August of the following year he joined the West India squadron in the sloop of war Natchez. In September, 1844, he was ordered to the frigate Potomac, and in 1847 was in command of the schooner Bonito, at the capture of the city of Tabasco, Mexico. Lieut. Berrien received his commission as commander, March 13, 1856, and during 1858–'59 was attached to the navy-yard, Portsmouth, N. H. In February, 1860, he was ordered to Hong-Kong, China, where he took command of the sloop of war John Adams; and two years later he was sent to Pittsburg, Pa., as assistant inspector of ordnance at the Fort Pitt Works. He was raised to the rank of captain in August, 1862, and in September, 1864, was ordered to the ironclad Monadnock at Boston. Toward the close of the year he was sent to the Norfolk navy-yard. He was commissioned commodore, Sept. 20, 1866, and in December was placed on the retired list.

Blair, Montgomery, an American statesman, born in Franklin co., Ky., May 10, 1813; died at Silver Spring, Md., July 27, 1883. He was graduated at West Point Academy in 1835, and served under Gen. Scott in the Seminole War. He then studied law, and was admitted to the bar in 1839. He was appointed District Attorney for Missouri, in 1842 was elected Mayor of St. Louis, and was raised to the bench the next year. This position he resigned in 1849. Three years after, he removed to Maryland, and entered upon the practice of law. He was engaged in important cases in the United States Supreme Court, and was one of the counsel in the famous Dred Scott case. He was appointed by President Pierce to the court of claims. Judge Blair left the Democratic party on the repeal of the Missouri Compromise, and for this was removed from his seat by President Buchanan. In 1860 he presided in the Republican Convention of Maryland, and in 1861 was appointed by President Lincoln Postmaster-General. He served in this office with signal ability and success. He prohibited sending disloyal papers through the United States mails, in which he was sustained by Congress, and introduced various reforms and improvements in his department, such as money-orders, free delivery in cities, postal railroad-cars, etc. Three years afterward (1864) he resigned from the Cabinet, and rejoined the Democratic party, to which he adhered for the rest of his life. He supported Mr. Tilden for the presidency, and subsequently attacked with much vigor President Hayes's title to office. Although he favored Mr. Tilden's candidacy again in 1880, he supported Gen. Hancock, the regular candidate of the party. Judge Blair was a man of simple, quiet habits and tastes. He was specially fond of country life, and, having abundant means, he supported a fine farm and place at Silver Spring, Md. His wife, together with three sons and one daughter, survives him.

Brooks, Charles Timothy, an American scholar, born in Salem, Mass., June 20, 1813; died in Newport, R. I., June 14, 1883. He was graduated at Harvard College in 1832, and in 1837 was settled as a Unitarian minister in Newport, where he spent the rest of his life. Mr. Brooks published several original works, and was distinguished as a translator from the German. In 1851 he issued a pamphlet on "The Controversy touching the Old Stone Mill" at Newport. He translated Schiller's "William Tell," "German Lyrics," etc.; Goethe's "Faust"; and Richter's "Titan," "Hesperus," and other works.

Casserly, Eugene, a United States Senator, born in Ireland, in 1822; died in San Francisco, Cal., June 14, 1883. His parents emigrated to New York when he was only two years old, and as his father was devoted to the business of teaching, young Casserly received in boyhood an excellent education. He was graduated at Georgetown College, D. C., entered a lawyer's office in New York, and was admitted to the bar in 1844. He was corporation attorney in 1846–'47. Three years later Mr. Casserly removed to San Francisco, where he built up a good practice, and took an active part in local and national politics. He was an ardent Democrat, was a capital stump-speaker, and for a time edited a paper in San Francisco. He was elected State printer; but, in consequence of a heavy fire by which his machinery and stock were destroyed, he was compelled to retire from the business. Thenceforward he devoted himself to his proper profession, and took high rank among the lawyers in California. During the civil war he sided with that portion of the party which upheld the Union. In 1869 he was elected United States Senator from California. He served on the committees of Printing, Public Lands, and Foreign Relations. His health having become infirm, Senator Casserly resigned in November, 1878, and returned to San Francisco and resumed practice. Of late years his declining strength was evident, and he died of nervous prostration and softening of the brain.

Clarke, William T., an American journalist, born in Walpole, Mass., Oct. 1, 1829; died in New York, Dec. 11, 1883. He worked on his father's farm, and subsequently studied for the ministry at Meadville and Cambridge. He was ordained at Hingham, Mass., in 1855, and preached for some years at Haverhill and Chelsea. In 1866 he came to New York, and entered upon journalism as his special work. He edited "The Liberal Christian" for four years, and became associated with Theodore Tilton in "The Golden Age." He also was connected with "The Graphic," and "The Evening Express." In 1882 he entered into service with "The New York Star," and was its chief writer. Mr. Clarke wrote readily and

forcibly, and he was correspondent of several journals in the country.

Coan, Titus, an American missionary, born in Killingworth, Conn., Feb. 1, 1801; died at Hilo, Hawaii, Dec. 1, 1882. He was a cousin and townsman of Asahel Nettleton; but, though influenced by the great revivals that followed the preaching of Mr. Finney, he did not unite with the church until 1828. He entered the second class of Auburn Theological Seminary in 1831, and in 1833 was graduated and licensed to preach. On the 16th of August he sailed for Patagonia with one companion, the Rev. Mr. Arms, to explore the country, with a view to the possible establishment of a mission. In the straits of Magellan they sighted the Beagle, in which Charles Darwin was making his famous voyage of scientific exploration. The savages sought to detain the venturesome missionaries among them, and they barely escaped with their lives, after three months of exploration among the Patagonian tribes in the region of Gregory's Bay. A passing ship took them off and landed them at New London in May, 1834. On the 3d of November following, Mr. Coan married Miss Fidelia Church, of Churchville, N. Y., and on Dec. 24, 1834, the young missionaries sailed, with six others, in the ship Hellespont from Boston for the Hawaiian islands, *via* Cape Horn. They arrived at Honolulu June 6, 1835, and at Hilo, which was to be their mission-station and their home for life, July 21st. For two years Mr. Coan gave himself chiefly to the study of the Hawaiian language, and he attained great power as a speaker. His district comprised the entire provinces of Hilo and Puna, extending 100 miles along the eastern coast of Hawaii. Throughout this wild and beautiful country he made frequent tours on foot; an era of revivals soon began, and, from 1838 to 1840, 7,000 of the natives were converted. He organized churches and schools throughout his district, and Mrs. Coan carried on for some years a school for native girls at Hilo. During his forty-six years of missionary work, he received 14,000 Hawaiians into the Hilo and Puna church. He was for many years President of the Hawaiian Evangelical Association. His great success was largely owing to the aid and wisdom of Mrs. Coan, who died exhausted by overwork in 1872. (For a sketch of Mrs. Coan's life, see the "Annual Cyclopædia" for 1872, p. 629.) In 1860, and again in 1867, Mr. Coan made a tour of the missions in the Marquesas islands. In 1870 Mr. and Mrs. Coan visited the United States. Mr. Coan was for forty years the chief source of information respecting the great volcanic eruptions of Kilauea and Mauna Loa, of which he was an ardent and constant student. His descriptions of volcanic phenomena were published in many different journals from 1841 to the year of his death. From 1851 to 1880 he was a frequent contributor to the "American Journal of Science." His published books are autobiographical; they are, "Adventures in Patagonia" (New York, 1880), and "Life in Hawaii" (New York, 1882). Four children survive him.

Davidson, Thomas C., an American lawyer, born in Jefferson co., Miss., in 1805; died on his farm in Livingston parish, La., Sept. 11, 1883. He was admitted to the bar in Louisiana, in 1827, and was elected to the Legislature in 1832. He was re-elected successively until 1853, when he was sent to Congress. He served in Congress till 1861, when with other secessionists he withdrew. After the civil war, he served again in the Legislature of Louisiana; but during the latter years of his life he was permanently disabled.

Ewer, Ferdinand C., an American clergyman, born in Nantucket, Mass., May 22, 1826; died in Montreal, Canada, Oct. 10, 1883. He was graduated at Harvard College in 1848. His parents were Unitarians, but he was baptized by the rector of the Episcopal Church in Nantucket. This gentleman was one of the earliest of the so-called "ritualists," and young Ewer entered zealously into the novelties in worship of that day in the Episcopal Church. It was Mr. Ewer's purpose to enter the ministry, but for a time he was involved in "deep waters," and doubted whether there was any truth at all in Christianity. Instead of the ministry, he chose as his profession civil engineering, and in 1849 sailed for California by way of Cape Horn. There being no demand for engineering services, he engaged in journalism, and for eight years was busily occupied in this kind of work. He was ordained deacon in 1857, and priest in 1858. He soon after became rector of Grace Church, San Francisco, where he labored diligently for two years. His health having become impaired, he returned to the East in 1860, was for a while assistant minister in St. Ann's Church, New York, and in 1862 was chosen rector of Christ Church. Here he began the introduction of practices not usual in Episcopal churches, which after a time created disturbance among the people, and the rector felt it best to resign his charge. This was in 1871, when some friends organized a new parish for him by the name of St. Ignatius. Here he was at liberty to carry out fully his views as to doctrine and ritual, and he became the foremost champion of what he called "catholic" principles. Dr. Ewer was a man of genial spirit and temper, and was an able writer on theological and controverted points. While preaching in St. John's Church, Montreal, Sunday, October 7th, he was stricken down with paralysis, and he died the third day after.

Ewing, Charles, an American general, died in Washington, D. C., June 20, 1883. He was brother-in-law to Gen. W. T. Sherman, on whose staff he served. At the outbreak of the civil war, he took a position in the regular army as captain of the Thirteenth Infantry. He was brevetted major in 1863 for services at the siege of Vicksburg; brevetted lieutenant-

colonel in 1864, for services in the Atlanta campaign; and again, in 1865, was brevetted colonel for gallant and high soldierly conduct during the war. He resigned in 1867, and took up his residence in the city of Washington, where he practiced law. He was a brother of General Thomas Ewing.

Foster, Charles J., an American editor, born in Bicester, England, Nov. 24, 1820; died in Astoria, N. Y., Sept. 12, 1883. He came to the United States in 1847, and, after residing in Boston for some time, he went to Cincinnati and Columbus, O. Mr. Foster was intimately acquainted with the turf in all its belongings, and he was said to be the best-informed man in the country on the subject of racing. He wrote for "The Spirit of the Times," and in 1876 established "The New York Sportsman," which he edited till his death.

Gardiner, Addison, an American jurist, born in Rindge, N. H., March 19, 1797; died in Rochester, N. Y., June 5, 1883. In 1809 his father removed to Manlius, N. Y., where the youth acquired his education and studied law. While yet a young man, in 1822, Addison Gardiner removed to Rochester, N. Y., which thenceforward became his home for life. He was the first justice of the peace in Rochester, and in 1825 was appointed district attorney for Monroe county. Four years later he was commissioned by Gov. Throop as Circuit Judge for the Eighth Circuit, comprising eight counties in western New York. His ability as a judge was conspicuous, and he rose high in the esteem of the profession. He resigned this post in 1838, and resumed the practice of law in Rochester, in partnership with the late M. F. Delano. He was nominated and elected Lieutenant-Governor of New York in 1844 on the Democratic ticket, and was re-elected in 1846. His position as presiding officer in the State Senate was important and well sustained, especially in view of the various law questions which came up for settlement by the Court of Errors, of which he was *ex officio* a member. In 1846 Judge Gardiner was elected Judge of the Court of Appeals, which was made the highest appellate court in the State, and thereupon resigned his lieutenant-governorship. He served in this high position for the long term, reaching to the end of 1855, when he declined being renominated. His superior qualities as a well-trained, clear-headed lawyer led to his being largely occupied in referee cases during the latter years of his life, and so admirable were his decisions that they were rarely reversed on appeal. Judge Gardiner was married in 1831; his wife died some years ago, and he leaves a son and a daughter.

Garthwaite, Jeremiah C., an American merchant, born in Elizabeth, N. J., in 1807; died in Newark, N. J., Feb. 16, 1883. Mr. Garthwaite was engaged in mercantile pursuits in Newark, N. J., and in New Orleans, by which he amassed large means, which he liberally distributed. He was elected to the Common Council of New York in 1850. He suggested various reforms, and worked hard to carry them out; but, finding it to be useless, he retired from public life. He was specially prominent in Episcopal Church affairs in New Jersey, was a delegate to the General Convention of the Church for more than twenty-five years, and exercised large influence. His wife, a daughter of Gen. Darcy, survives, but he left no children.

Gorgas, Josiah, an American soldier, born in Pennsylvania in 1818; died in Tuscaloosa, Ala., May 15, 1883. He was graduated at West Point Academy in 1841, and served through the Mexican War with much credit, rising to the rank of captain. At the outbreak of the civil war, he resigned his commission, and tendered his services to the Confederate Government. He was placed at the head of the ordnance department, with the rank of brigadier-general. After the fall of the Confederacy he devoted himself for a time to business. In 1872 he was elected Vice-President of the University of Tennessee at Sewanee, and in 1878 was invited to the presidency of the University of Alabama. This post he held until failing health, some years ago, compelled him to relinquish it. Subsequently he resided in Tuscaloosa, discharging the lighter duties of librarian of the university.

Greene, George Washington, an American author, born in East Greenwich, R. I., April 8, 1811; died Feb. 2, 1883. He was a grandson of Gen. Nathanael Greene. His educational training was received at Brown University, and a few years after his graduation he was appointed United States consul at Rome, which office he held from 1837 till 1845. On returning home in 1847, he was made Professor of Modern Languages in Brown University. In 1872 he was appointed Professor (non-resident) of American History in Cornell University. Mr. Greene was the author of valuable historical works, as "The Life of General Nathanael Greene" (2 vols., 1867–'68); "Historical View of the American Revolution" (1865), etc. He also contributed largely to periodical literature, and was occupied in preparing a biography of Longfellow. This last was mainly a labor of love, he being on intimate terms with the distinguished poet.

Hastings, Hugh J., an American journalist, born in the north of Ireland, Aug. 20, 1820; died at Monmouth Beach, N. J., Sept. 12, 1883. He came to the United States when a boy eight years old, and settled with his family in Albany, N. Y. Being an active youth, with a decided taste for journalism, he began his career as reporter for the Albany "Atlas." Not long after, he began the publication of a newspaper of his own, entitled the "Knickerbocker," which proved a success, and grew in time to be a valuable property. Mr. Hastings took an active and energetic part in State and national politics, devoting himself to the interests of the Whig party and its successor, the Republican

party. He was appointed, by President Taylor, Collector of the Port of Albany, but resigned the office under Fillmore. In 1868 he assumed the editorship of the New York "Commercial Advertiser," and ere long gave it a tone and character which were as striking as they were effective. The paper increased largely in circulation, and did good service to the cause in which Mr. Hastings's deepest convictions ware enlisted. He was a warm supporter of Gen. Grant; criticised Mr. Hayes's administration; and, on President Arthur's taking the lamented Garfield's place, he rendered him all the help in his power. His death was mainly the result of his being thrown from his phaeton, while driving along Broadway, Long Branch. His wife and two daughters survive him.

Hatfield, Edwin F., an American clergyman, born in Elizabethtown, N. J., Jan. 9, 1807; died in Summit, N. J., Sept. 22, 1883. He was graduated at Middlebury College, Vermont, in 1839, and then spent two years at Andover Seminary. He was ordained in May, 1832, by the United Presbytery of New York, and directly after became pastor of the Second Presbyterian Church in St. Louis, Mo. Three years later he removed to New York city, and took the pastorate of the Seventh Presbyterian Church, which post he held for twenty-one years (1835–'56). Dr. Hatfield was a delegate of the New School Presbyterians in 1846; was elected stated clerk; was re-elected every year until the union of the two schools again in 1870, when he was elected to the same office; and continued in this responsible trust until the last year, when he was elected moderator. Owing to ill health he stopped preaching in 1863, and was financial agent of the Union Theological Seminary for several years. He was very successful in raising funds for the institution. Dr. Hatfield published "Universalism as it is" (1841), "St. Helena and the Cape of Good Hope" (1852), "History of Elizabeth, N. J." (1868), "The Church Hymn Book," and "The Chapel Hymn Book" (1872–'73).

Head, Natt, Governor of New Hampshire, born in Hooksett, N. H., May 20, 1828; died there, November 12, 1883. He received his early educational training at Pembroke Academy, and when he became of age he entered actively and zealously upon agricultural and other pursuits. He took deep interest also in the military affairs of the State, in connection with the service of the troops during the civil war. In 1876 he was elected State Senator by a large majority, and in 1878 was chosen Governor of New Hampshire. He served out his term of two years with great acceptance, and was not a candidate for re-election. Gov. Head was prominent in the Masonic and Odd-Fellowship ranks, was Vice-President of the Historical Society, and a director in various savings-banks, insurance companies, railroads, etc. He was highly esteemed for his integrity, his genial spirit, his love for his native State, and his unfailing efforts to promote peace, good-will, and prosperity among his fellow-citizens.

Jeffers, William N., an American naval officer, born in Gloucester co., N. J., in 1823; died in Washington, D. C., July 23, 1883. Mr. Jeffers was destined by his parents for the law, but exhibiting early a taste for the sea, he was appointed midshipman Sept. 25, 1840. His first cruise was in the Pacific, under Commodore A. C. Jones, and he took part in the capture of Upper California by the forces commanded by that officer in 1842. When the Mexican War broke out he was ordered to the steamer Vixen, and was a participator in all the naval operations in the Gulf. In 1852 he was selected by Commodore Perry to accompany the Japan Expedition; but, as the vessel to which he was assigned (the Princeton) proved to be unfit for service, he was given leave of absence, and joined E. G. Squier in his exploring expedition into Honduras. In the autumn of 1853 he was ordered to the Brazil squadron, and took part in the exploration of the La Plata river. While he was thus occupied his vessel was fired upon by a Paraguayan battery, which he gallantly attacked and silenced. During his command of the Water Witch he rescued from wreck the Spanish steamer Cartagena, which service was acknowledged by the Queen of Spain, in the presentation of a handsome sword. He was next assigned to the ordnance-ship Plymouth, stationed in the Gulf to protect the American flag. Obtaining leave of absence, he was again with Mr. Squier in Honduras, as hydrographic engineer. On his return he served in the war-steamer Brooklyn on the coast of Mexico for two years, and subsequently as one of the commissioners on the "Chiriqui grants" in New Granada. During the civil war his most noted service was as commander of the Monitor, when Lieut. Worden had been disabled. After that time he was occupied chiefly on shore-duty.

Kirkbride, Thomas S., an American physician, born near Morrisville, Pa., July 31, 1809; died in Philadelphia, Dec. 16, 1863. He received his educational training at Trenton, N. J., after which he entered the medical department of the University of Pennsylvania, and obtained the degree of M. D. in March, 1833. He was immediately appointed resident physician at the Quaker Insane Asylum, Frankford, where he remained for a year, and then took the same post in the Pennsylvania Hospital for two years. For several years after this he was engaged in private practice in Philadelphia. In the autumn of 1840 he was elected superintendent of the new Institution for the Insane (now connected with the Pennsylvania Hospital), and remained at its head until his death. Dr. Kirkbride stood high in the profession in his specialty; he was a member of numerous medical societies, author of several valuable books, and contri-

butions to medical journals; and a most estimable man.

Knox, Samuel R., an American naval officer, born in Charlestown, Mass., Aug. 28, 1811; died in Boston, Nov. 22, 1883. He entered the navy as midshipman in 1828; served in the Mediterranean and Pacific, under different commanders; and was in the United States Exploring Expedition, under Commodore Wilkes, from 1838 to 1842. While in command of the schooner Flying-Fish, he approached nearer to the south pole than any other vessel in the squadron. "Knox's High Land," in that locality, was named in honor of the young officer. In the Mexican War he assisted in the capture of the castle of San Juan de Ulloa; and in the civil war he was attached to the blockading squadron in the Gulf of Mexico. He had been for several years on the retired list.

Le Conte, John Lawrence, an American scientist, born in New York, May 13, 1825; died in Philadelphia, Nov. 15, 1883. He was graduated in 1846 at the New York College of Physicians and Surgeons. While a student he made scientific excursions into the Western States, and afterward extended his travels into Central America. Of these excursions and travels he furnished interesting accounts for various scientific societies and journals. Dr. Le Conte's special study was the North American *Coleoptera*, in which department he was regarded as a high authority. The Smithsonian Institution at Washington published his classification of the Coleoptera of our country, in 1861–'62, and in 1863–'66 his "List of Coleoptera of North America." Dr. Le Conte entered the army as surgeon of volunteers in 1862, and subsequently became medical inspector in the regular army. He was a member of numerous learned societies, and in 1873 was elected President of the American Association for the Advancement of Science. He contributed largely to scientific periodicals, and was chief clerk in the United States Mint, Philadelphia, at the time of his death.

Macfarlane, Robert, an American editor, born in Rutherglen, near Glasgow, Scotland, April 23, 1815; died in Brooklyn, N. Y., Dec. 21, 1883. His early education was limited, but having a taste for reading he made respectable acquirements in subsequent years. Having learned his father's trade, that of a dyer, at Paisley, he emigrated, in 1836, to the United States. He took up his residence in Albany, N. Y., in 1840, and made his mark there as editor of a paper published in the interests of the working classes. This led to his appointment, in 1848, as editor of the "Scientific American," which post he held for seventeen years with decided ability. Being threatened with failure of eyesight, he gave up literary work in 1865, and returning to Albany engaged in the business of dyeing. In 1874 he retired from the business, in favor of his two sons, and thenceforward resided mostly in Brooklyn. He revisited his native land twice, and wrote pleasant sketches of his travels and experiences. He was author of a "History of the Screw-Propeller," and edited a "Treatise on the Art of Dyeing." He was also devoted to Scottish antiquities, and to the history of Scottish emigration to America.

McKeon, John, an American lawyer, born in Albany, N. Y., in 1808; died in the city of New York, Nov. 22, 1883. His father was a naval officer of distinction in the War of 1812. He was graduated at Columbia College, and studied law in the office of John L. Mason. He was elected to the Assembly, on the Democratic ticket, and served in that position during 1832–'34. He was next elected to Congress, where he served from 1835 to 1837, and again from 1841 to 1843. He was appointed District Attorney of the County of New York early in 1846, and the following year (the office having become elective) he was elected for the full term of three years. He was resolute in the discharge of his duties, as was proved by his prosecution of a notorious malpractitioner, Madame Restell, and securing a conviction, and by his determined hostility to criminals of all sorts. He was appointed by President Pierce as successor for the unexpired term of Charles O'Conor as United States District Attorney for the Southern District of New York. After this he resumed the practice of law, and associated with himself Frederick Smyth as partner in 1858. While United States District Attorney he was engaged in prosecuting a number of well-known and important cases, such as the attempt to enlist men to serve in the British army in the Crimean War, the seizure of the "filibustering" ship Northern Light, the trial of officer Westervelt, taken on board the ship Nightingale by Government cruisers, the ship having in her hold 960 slaves. Mr. McKeon was a Democrat always and everywhere, sometimes in the majority with the Tammany-Hall wing, quite as often in the minority with its opponents. Although well advanced in years, he was nominated for District Attorney in the autumn of 1881, and was elected to the same office he had held more than thirty years before. Mr. McKeon married a daughter of Capt. Sloat, of the United States Navy. His wife and one daughter survive him.

McMullen, John, an American clergyman, died in Davenport, Iowa, July 3, 1883. He was graduated in Chicago in 1854, and the same year went to Rome, where he studied for the priesthood, and was ordained in 1858. He returned to Chicago in the same year, and was appointed pastor of a St. Louis church. In 1861 he became President and Rector of the Roman Catholic University of St. Mary's of the Lake, and in 1863 began the erection of the new university building, which was afterward destroyed in the great fire. Dr. McMullen was for a time at Wilmington, Ill., but was summoned back to Chicago in 1870, to take charge of the Cathedral of the Holy Name. In 1877 he was appointed vicar-general of the diocese,

and in 1880, when a new diocese was formed by the title of Davenport, Iowa, Dr. McMullen was appointed its bishop. The remainder of his life was spent in the work thus assigned to him. He wrote largely on church history, polity, etc. He was incessant in labor, and confirmed in one year 6,000 candidates.

Martin, Benjamin N., an American scholar, born in Mount Holly, N. J.; died in New York, Dec. 26, 1883. His early education was obtained at the academy, Trenton, N. J., and he was graduated at Yale College in 1837, in the same class with Chief-Justice Waite, the Hon. W. M. Evarts, and Profs. Lyman and Silliman, of New Haven. Mr. Martin next entered the Yale Theological Seminary, and, on graduating in 1840, he supplied for 1841–'42 the pulpit of the Carmine Street Presbyterian Church, New York (now in Forty-second street). The following year he became pastor of the Congregational Church in Hadley, Mass., where he remained till 1847. During 1848–'49 he was pastor of a Presbyterian Church in Albany, N. Y. For three years he was occupied chiefly in study, particularly in the departments of science and philosophy. In 1852 he was called to the professorship of Psychology and cognate studies in the University of the City of New York. He taught, also, rhetoric and *belles-lettres*, and lectured quite largely on modern history, political economy, apologetics, natural theology, etc. In this congenial work Prof. Martin spent the remaining thirty-one years of his life. He received the degree of S. T. D. from Columbia College, New York, in 1862, and of L. H. D. from the Regents of the University of the State of New York in 1869. Dr. Martin was unsurpassed as a teacher, and exercised over the students under his care a very marked and beneficial influence for everything good and pure and true. He was ardent, clear-sighted, and comprehensive in all he undertook to do, and, while always careful to point out the errors and fallacies in much of our modern thinking in science and philosophy, he was entirely free from the littleness and narrow-mindedness of many who deem it necessary to depreciate and vilify science and its progress among men, as if there were danger of harm to true religion from the established conclusions of science. Dr. Martin contributed largely to the chief theological reviews, and wrote frequently for "The Independent" and "The Evangelist," particularly on national and anti-slavery topics during the civil war. He was a member of a number of societies for religious and social improvement, and one of his last lectures was delivered at the opening of the Institute of Christian Philosophy, in November, 1883. He leaves one son, occupied like his father in the important work of Christian training and culture of the young.

Mills, Clark, an American sculptor, born in Onondaga co., N. Y., Dec. 1, 1815; died in Washington, D. C., Jan. 12, 1883. He lost his father when a child, and then lived with an uncle; but, becoming dissatisfied, he ran away from home in 1828. In his wanderings he reached New Orleans, and thence went to Charleston, S. C., where he learned the stucco or plasterer's trade, and worked at it for nine years. He began to model busts in 1845, and invented a new way of taking casts from the living face. He produced a marble bust of John C. Calhoun, which was purchased for the City Hall of Charleston, in 1846. Two years later he was in Washington city, where he furnished a design for an equestrian statue of Andrew Jackson, to be placed in Lafayette Square. There being no foundry or workman capable of producing this in metal, Mr. Mills was compelled to learn the business of casting, and after numerous trials succeeded in getting a perfect cast, in October, 1852. The statue was set up, Jan. 8, 1853, on the anniversary of the battle of New Orleans. It was completed at a loss of $7,000; but Congress voted him an appropriation of $20,000. At the same session $50,000 was appropriated for a colossal equestrian statue of Washington, which was unveiled in the city of Washington, Feb. 22, 1860. Mr. Mills was next engaged in casting the colossal statue of Liberty, from a design by Crawford, which now crowns the dome of the Capitol. It was finished in 1863. At a later date his design for the monument to President Lincoln was adopted.

Milmore, Martin, an American sculptor, born in Sligo, Ireland, in 1846; died in Boston, Mass., July 21, 1883. He came to the United States in his sixth year, and received his education in Boston. Here he studied art, under Thomas Ball, and developed talent in this line. In 1863 he sent to the Sanitary Fair a statuette, entitled "Devotion," which was much admired. He opened a studio in Boston, and soon obtained success. He received the contract for the Soldiers' and Sailors' Monument on Boston Common, and went to Rome to carry forward and complete his studies in art. Mr. Milmore modeled busts of Pope Pius IX, Charles Sumner, Wendell Phillips, and many others. Among his public works are: the statue of America, at Fitchburg, monuments in various towns of Massachusetts, and statues of Gen. Thayer, at West Point, and of a "Weeping Lion," at Colby University. His last bust was of Daniel Webster, for the State-House at Concord, N. H. This is still in clay, but is to be put in marble by his brother.

Norton, William A., an American scholar, born in New York, in 1810; died in New Haven, Conn., Sept. 21, 1883. He was graduated at West Point, in 1831, and became lieutenant in the Fourth Artillery. He taught for some time at the academy as Professor of Natural and Experimental Philosophy. He joined the "Black Hawk Expedition," in 1832, but did not take active part in it. He resigned from the army, Sept. 30, 1833, and was afterward engaged in professorial work in the University of

the City of New York, Delaware College, Brown University, and the Sheffield Scientific School, Yale College. He remained in this last to the end of his life. He wrote several books on scientific subjects, was a contributor to periodicals, and was a member of the Academy of Science, etc.

Oakey, Emily S., an American author, born in Albany, N. Y., Oct. 8, 1829; died there, May 12, 1883. She received her education at the Albany Female Academy, and was graduated in 1850, with high honors. In 1854 she was offered a position as teacher in the academy, which she accepted and retained for twenty-five years. Miss Oakey was an admirable instructor in English composition, rhetoric, *belles-lettres*, and Latin. In later years she also taught logic, German, and French. Her health had never been vigorous, and the last year of her life she was in the hospital, a sufferer from malignant and painful disease. Miss Oakey displayed poetic ability of no mean order, and she contributed quite frequently to magazines and religious newspapers. Her poems have received high praise, and are noted for purity of sentiment and sweetness of versification. A volume of them was published just after her death.

Patterson, William C., an American financier, born in 1812; died in West Philadelphia, June 20, 1883. He was President of the Trust Company, and was well known in the financial world. He served in the Mexican War, and was for a time on the staff of his brother, Gen. Robert Patterson, during the first year of the civil war. He engaged in business in Philadelphia after the close of the great struggle, and was one of the original directors, as well as president, of the Pennsylvania Railroad.

Peck, Jesse T., an American clergyman, born in Middlefield, N. Y., April 4, 1811; died in Syracuse, May 17, 1883. While a student in Cazenovia College he was licensed as an exhorter, and in 1830 was licensed as a local Methodist preacher. In July, 1832, he joined the Oneida Conference at Manlius, and served as pastor for five years. He then gave himself to educational work, and became Principal of the Troy Conference Academy at Putney, Vt., in 1841. Here he remained seven years, when he was elected President of Dickinson College. During his four years of service the college prospered greatly. In 1852 he took to preaching again, his sphere of labor being the Methodist Church in Washington city. Two years later he became secretary and editor of the Tract Society in New York. Thence, in 1858, he went to California, where he remained eight years, actively and usefully occupied. Owing to the sickness of his wife he returned to the East, and was in charge of congregations in Peekskill, Albany, and Syracuse. He also entered zealously into the establishment of the University of Syracuse, N. Y. In 1872 he was elected one of the bishops in the Methodist Church. He was a preacher of considerable eloquence and fervor, and wrote a number of books, the best known of which are, "The True Woman," "The Central Idea of Christianity," and "What must I do to be saved?"

Pinkney, William, an American clergyman, born in Annapolis, Md., April 17, 1810; died in Cockeysville, Md., July 4, 1883. He was graduated at St. John's College, Annapolis, in 1827, and was ordained deacon in the Episcopal Church in April, 1835, and a year later was ordained priest. His first charge was that of Somerset and Coventry parishes; he was next rector of St. Matthew's Church, Bladensburg; and then became rector of the Church of the Ascension, Washington city. In 1870 he was elected Assistant Bishop of Maryland, and was consecrated on the 6th of October. On the death of Bishop Whittingham, in 1879, Dr. Pinkney became bishop of the diocese. Owing to his advanced years, Bishop Pinkney was not so active and energetic as might have been desired; but he performed a large amount of work, and was universally respected and esteemed for his sincere devotion to duty and his many lovable qualities.

Randolph, Thomas F., formerly Governor of New Jersey, born in New Brunswick, N. J., June 24, 1836; died in Morristown, Nov. 7, 1883. His early education was obtained at the Rutgers Grammar-School, and for a time he was in the office of "The Fredonian," a paper owned and edited by his father on retiring from Congress. He next became a merchant, and went into business in Vicksburg, Miss While there he married a granddaughter of Chief-Justice Marshall. In 1850 he returned to New Jersey, and took up his residence in Morristown. He was elected to the Assembly in 1859, and to the Senate in 1862, being also elected for the full term in 1863. Four years later he was made President of the Morris and Essex Railroad. In 1868 he was elected Governor of New Jersey. In 1874 he was chosen United States Senator, succeeding the Hon. J. P. Stockton. During the civil war he was warmly in sympathy with the Union cause. He was chairman of the special legislative committee on the "Peace Convention" in 1861. He lived mostly in retirement in Morristown after leaving Congress.

Rodney, George B., an American lawyer, born in 1802; died in Newcastle, Del., June 18, 1883. He was graduated at Princeton College in 1820, was admitted to the bar, and practiced in the courts for many years with success. He did not take much part in politics, and was in public life only a member of the House of Representatives. He was twice elected, and served from 1841 to 1845. He was a delegate to the "Peace Convention" of 1861. Mr. Rodney enjoyed the distinction, at the time of his death, of being the oldest lawyer of the Delaware bar.

Sands, Benjamin F., an American naval officer, born in Maryland, Feb. 11, 1812; died in Washington city, June 30, 1883. He entered the

navy as midshipman at the age of sixteen, and served in the Brazil squadron, the West India squadron, and the Coast Survey. He was commissioned as lieutenant in 1840, and was appointed to the frigate Columbus of the Mediterranean squadron. He did excellent service on the Coast Survey from 1850 to 1855, and was commissioned as commander in September, 1855. He was three years longer in this work, and was made captain in 1862. He took command of the steamer Dakota, of the North Atlantic blockading squadron, and participated in the engagement with Fort Caswell, Feb. 23, 1863. He was also present, in command of another steamer, at both attacks on Fort Fisher, 1864 and 1865. He was commissioned as commodore in July, 1866, and the year following was appointed Superintendent of the Naval Observatory. He was raised to the rank of rear-admiral in April, 1871, and put on the retired list in 1873.

Sands, Joshua R., an American naval officer, born in Brooklyn, N. Y., in 1795: died in Baltimore, Md., Oct. 2, 1883. His father was a personal friend of Washington's, and was Collector of the Port of New York. He entered the navy at the opening of the War of 1812, as midshipman, served under Commodore Chauncey on Lake Ontario, and was actively occupied all through the war. He was commissioned lieutenant in 1818, and served on various stations at home and abroad. He was made captain in 1840, and was on duty in the Vixen in the Mexican War. He was in command of the Government vessel which carried the articles for exhibition to the World's Fair, 1851, and received several tokens of honor. In 1856 he commanded the Susquehanna, and assisted in laying the first Atlantic cable. Three years later he was in charge of the squadron on the coast of Brazil. In 1862 he was made commodore, and took in hand the lake defenses. In 1866 he was raised to the rank of rear-admiral, and then placed on the retired list. He was port-admiral at Norfolk, Va., from 1869 till 1872. During the last ten years of his life he lived chiefly in Baltimore.

Sharswood, George, formerly Chief-Justice of Pennsylvania, born in Philadelphia, July 7, 1810; died there, May 28, 1883. He graduated from the University of Pennsylvania in 1828, and having studied law, he was admitted to the bar in 1831. He served in the Legislature of the State for three years, and in 1843 became editor of the "American Law Magazine." Mr. Sharswood gave character and standing to this quarterly; but, after three years' publication, the publishers discontinued it. He edited Stephens's "Nisi Prius" in 1844, and in the same year appeared his first edition of "Russell on Crimes," which passed through nine editions. In 1845 he was made Judge of the District Court. He was president judge from 1851 to 1867, when he was elected Associate Judge of the Supreme Court of Pennsylvania. He became Chief-Justice in January, 1879, and occupied the position until January, 1883, when his term expired. He was appointed Professor of Law in the University of Pennsylvania in 1850, and did excellent work in this position. He published "Professional Ethics" in 1856. The same year he brought out "Popular Lectures on Commercial Law," and in 1859 an annotated edition of "Blackstone's Commentaries." Several other valuable law books were edited by him.

Shelton, William, an American clergyman, born in Bridgeport, Conn., Sept. 11, 1798; died in the same house in which he was born, Oct. 11, 1883. His early training was in the home of his father, who was a clergyman of the Episcopal Church in its very earliest days in the United States, and his education was obtained at Cheshire Academy. Thence he went to the General Theological Seminary, where he was graduated in 1823, among the very earliest of its alumni. He was ordained deacon the same year, served the church at Plattsburg and Red Hook, N. Y., and joined his father as assistant in Fairfield (now Bridgeport), Conn. Here he was ordained priest in May, 1826. In September, 1829, he became rector of St. Paul's Church, Buffalo, N. Y., a post which he held to the day of his death. Buffalo, at the time Dr. Shelton went there, was a frontier town, so to speak, with less than 10,000 inhabitants; but he became identified with its growth and prosperity, took an active part in the duties of good citizens, and was honored and respected by all. He began the building of St. Paul's Cathedral Church in 1848 (which was not fully completed till 1868); was a delegate to the General Convention of the Church for nearly forty years; and gave much of his time to educational and missionary work.

Smith, Erasmus Darwin, an American jurist, born in De Ruyter, N. Y., Oct. 10, 1806; died in Rochester, N. Y., Nov. 11, 1883. While yet a youth, he went to Rochester, entered the law-office of Hon. E. Griffin, and was admitted to the bar in 1827. He was married in 1831 to a daughter of Mr. Griffin. After practicing law for several years, he entered into partnership with Mr. H. E. Rochester, which lasted for more than twenty years. For a number of years he was Clerk of the State Court of Chancery, and was a Democrat in politics. He joined the Whig party in 1855, and was elected a justice of the Supreme Court of the State in November of that year. In 1859 he was reelected for a second term of four years. His position as Supreme Court judge made him also a member of the Court of Appeals for a part of both his terms. When the time for election came round again, Judge Smith was so acceptable to both parties that, in 1863, he was chosen for a third term. Meanwhile, the term of office had been lengthened to fourteen years, so that he continued on the bench till 1876, when, having become disqualified by age, he retired to private life. His eminently high character as a judge led to his being frequently

called on to act as referee during the latter years of his life. He was prominent in religious affairs, being an active and devoted member of the Episcopal Church, whose interests he loved to serve. He was also an ardent Mason.

Sojourner Truth, an American negro lecturer, born in the State of New York, about 1775; died in Battle Creek, Mich., Nov. 26, 1883. She was born a slave, and spent her life as a slave until 1827, when slavery was abolished in New York. Her parents came from the coast of Guinea, and were brought to the United States, and sold into slavery. The name she received from her master was Isabella Hardenburg, but, disliking it, she went out into the woods and prayed to the Lord for another name. According to her account, she heard the name "Sojourner" whispered to her in answer to her prayer, and the appellation "Truth" was afterward added, seeing that, in her going up and down throughout the country, as she held to be her mission, she should preach nothing but truth to all men. For about three quarters of a century she delivered lectures, in the East and West, on temperance, politics, and the woman's rights question. She could neither read nor write, but being very tall—nearly six feet—and having a deep, powerful voice, she proved to be a very imposing, effective lecturer. Among other things, she was anxious to obtain a grant of public lands in the West for the establishment of a negro colony, and for educating negro youth. There is no doubt that Sojourner Truth did much good work during her long life, for she helped to reclaim hundreds from bad ways, and set an example of great power to people of her own color.

Sophocles, Evangelinus A., an American scholar, born near Mount Pelion, Thessaly, Greece, March 8, 1807; died in Cambridge, Mass., Dec. 17, 1883. He was educated in the Convent of Mount Sinai. He came to the United States in 1829, studied for a while at an academy in Monson, Mass., and then entered Amherst College, but did not complete the course there. He taught for a time at Amherst, Hartford, and New Haven. He made two voyages to Greece, and returned each time with valuable works in his special line. From 1842 to 1859 he was connected with Harvard as tutor and assistant professor. In 1860 he was made Professor of Greek (Ancient, Modern, and Byzantine). In 1837 Yale College gave him the degree of A. M., and in 1868 Harvard conferred upon him the degree of LL. D. Prof. Sophocles published a number of Greek books of excellent quality. His "Greek Grammar" (first issued in 1838) had a very large sale, and is still in use. His latest and most elaborate work was "Greek Lexicon of Roman and Byzantine Periods," published in 1870.

Swann, Thomas, an American Senator, born in Alexandria, in 1806; died in Leesburg, Va., July 24, 1883. He was educated at Columbia College and the University of Virginia. His law studies were pursued in his father's office, after completing which he removed to Baltimore. In 1845 he was elected a director of the Baltimore and Ohio Railroad. Two years later he became its president, and resigned in 1853. He next accepted the presidency of the Northwestern Virginia Railroad Company, and while in this office was, in 1856, elected Mayor of the city of Baltimore, and re-elected in 1858. While the secession struggle was in progress he was elected by the Union party Governor of the State of Maryland, and took his seat Jan. 1, 1865. The next year he was elected United States Senator, but was persuaded to remain at his post as Governor until the expiration of his term, Jan. 1, 1869. In November, 1868, Gov. Swann was elected by the Democrats as representative in Congress. He was re-elected four times, viz., in 1870, 1872, 1874, and 1876.

Talbot, Joseph, an American clergyman, born in Alexandria, Va., Sept. 5, 1816; died in Indianapolis, Ind., Jan. 16, 1883. He was of Quaker parentage, and received his educational training at the Alexandria Academy. About 1835 he removed to the West, where he engaged in mercantile pursuits and banking business. His religious convictions took such shape that he abandoned Quakerism, and united with the Episcopal Church. He was baptized in 1837, and after due preparation was admitted to the priesthood in 1848. He thereupon became rector of St. John's Church, Louisville, Ky., where he served some seven years. Thence he went to Indianapolis, and became rector of Christ Church in that city. In 1860 he was consecrated missionary Bishop of the Northwest, and five years later was chosen Assistant Bishop of Indiana. On the death of Bishop Upfold, in 1872, he became bishop of the diocese. He received his doctor's degree from the Western University of Pennsylvania, and subsequently, while in England at the Lambeth Conference, he was honored with the degree of LL. D. by the University of Cambridge. Bishop Talbot was possessed of vigorous manhood, was a man of fine appearance, and was an excellent preacher.

Taylor, Arthur F., an American chemist, born in Andover, Mass., in 1853; died suddenly while on a visit to New York, June 19, 1883. He was a graduate of Harvard College, and also of the School of Chemistry of the University of Göttingen, Germany. He was Professor of Chemistry for a time in the University of Pennsylvania, but in 1881 accepted the professorship of Chemistry in the Case School of Applied Science, Cleveland, Ohio. This post he held at the time of his death.

Thayer, Nathaniel, an American capitalist, born in 1808; died in Boston, Mass., March 7, 1883. He was a son of Rev. Dr. Thayer, of Lancaster, and for many years was a member of the firm of J. E. Thayer & Brother. He was largely connected with railroads and railroad development in the West, and was a director of the New

York Central, the Michigan Central, the Chicago, Burlington, and Quincy, and the Philadelphia, Wilmington, and Baltimore railroads. He was also a munificent benefactor of Harvard College, in buildings and endowments. He founded Thayer Hall (1870), the Thayer Commons Hall, etc., and bore the expenses of Agassiz's expedition to South America. Mr. Thayer was noted for generously contributing to the needs of poor students at Harvard.

Thorne, Charles R., an American actor, born in New York, June 11, 1840; died there, Feb. 10, 1883. His father was manager of traveling theatrical companies, and young Thorne spent his early years in this roving sort of life. His first appearance on the stage was in San Francisco, in 1852, when a mere boy. His father put him to learn a trade, but, as he did not like it, he went back to the theatre. After a while he met with some success, in 1862. He next went to China, and built a theatre in Shanghai, where he had fair success. Afterward he went to Egypt, and thence round the world by way of Paris and London. He came back to New York in 1873, and joined the Union Square Company.

Tom Thumb (Charles Heywood Stratton), an American dwarf, born in Bridgeport, Conn., Jan. 4, 1838; died in Middleborough, Mass., July 15, 1883. On entering the service of P. T. Barnum, in 1852, he received the *sobriquet* of Tom Thumb, by which he is best known. At that time he was not two feet high, and weighed less than 16 pounds. He was engaged at a salary of $3 a week and traveling expenses; but, as he proved a great success at Barnum's Museum, his salary was increased to $25 a week. In 1854, Barnum took him to England, where he was very successful, and was presented to the Queen and royal family. Thence he went to Paris, and saw more of royalty, reaping for his employer quite a golden harvest. The General's next experience was in getting a wife, viz., a dwarf girl named Lavinia Warren, to whom he was married in February, 1863. During the years subsequent to this, he and his little wife continued in the show business, traveled over the world, and held exhibitions wherever they went. His death was sudden, being the result of a stroke of apoplexy.

Trenchard, Stephen Decatur, an American naval officer, born in Brooklyn, N. Y., July 10, 1818; died in New York city, Nov. 15, 1883. His father was a naval officer under Com. Chauncey in the War of 1812. He was appointed cadet at the age of sixteen, and from 1835 to 1837 was stationed on the receiving-ship New York. He spent the year 1839 and part of 1840 in the Naval School in Philadelphia. He was promoted to passed-midshipman in July, 1840, and detailed for duty on the sloop Preble attached to the West India squadron. He was for two years in another vessel on the home squadron, and two more with the Coast Survey, after which he was promoted in February, 1847, to a lieutenancy. He was assigned to the Albany, then to duty in the home squadron, the receiving-ship Philadelphia, the steam-frigate Powhatan, of the West India squadron, and the steamer Rhode Island. This last was a supply-vessel to the blockading squadron, from 1861 to 1865, under Lieut. Trenchard's command. He was commissioned commander in July, 1862, and distinguished himself in the attacks on Fort Fisher. After the civil war was over, he was stationed at the Brooklyn navy-yard, and thence was put in command of the Lancaster, flag-ship of the South Atlantic squadron. He was commissioned commodore in May, 1871; served on the Board of Examiners; and subsequently as light-house inspector. He was raised to the rank of rear-admiral in August, 1875. He was in command of the North Atlantic station from 1876 to 1878, and was placed on the retired list in July, 1880.

Uncle Tom (Josiah Henson), the hero of "Uncle Tom's Cabin," born in Charles co., Md., in 1789; died in Dresden, Ont., May 5, 1883. He was born a slave, and continued such until he succeeded in escaping into Canada with his wife and four children. Henson had been early taught religious truth and obligation, and so excellent was his character for sincerity and honesty that he was made a Methodist preacher before he knew how to read. In 1828 his Methodist friends contributed a large sum with which he expected to purchase his freedom; but he was tricked out of his money by his unscrupulous master. As soon as possible after that he ran away and got to Canada and freedom. He was active and industrious, and assisted largely in the "underground railway" mode of helping negroes out of slavery. He risked his life more than once by venturing into Kentucky. In 1851, after his eldest son had taught him to read, he visited England, and was treated with much kindness. On his return he wrote and published his autobiography, in order to raise means wherewith to buy the freedom of his elder brother. Mrs. Stowe's famous "Uncle Tom," in her novel, is based largely on the life and character of Henson. He visited England again, a few years ago, and had an interview with the Queen. It is said that 40,000 copies of his autobiography had been purchased by the people of the United Kingdom.

Van Buren, William H., an American surgeon, born in Philadelphia, April 5, 1819; died in New York city, March 25, 1883. His education was obtained in the city of his birth, with the exception of between two and three years passed at Yale College. He entered the medical class of the University of Pennsylvania, and finished his studies there before reaching the age required for graduation. Having this spare time, he went to Paris with Dr. Harlan, of Philadelphia, and was engaged in medical studies for eighteen months. On returning to the United States he was graduated in medicine from the University of Pennsylvania

in 1840. His graduation essay was of such superior merit that the Faculty took charge of its publication. Dr. Van Buren next entered the army, and served under Generals Wool and Harney in Florida, and for a short time on the Canadian frontier. In Florida his health broke down under malarial poisoning, the ill effects of which he felt all through life. In 1844 he was stationed in the Meteorological Bureau in Washington. The next year he went to New York, and became assistant to Dr. Valentine Mott in the department of surgery. He soon took high rank as hospital surgeon, as teacher of anatomy and surgery, and as a family practitioner. He was appointed one of the surgeons to the Bellevue Hospital at its organization in 1847, and in 1852 was made surgeon, and afterward consulting-surgeon, to the New York Hospital. Later he became surgeon and consulting-surgeon to St. Vincent's Hospital, and consulting-surgeon to the Woman's, the Charity, and the Presbyterian Hospitals. He was elected Professor of the Art of Surgery in Bellevue Hospital Medical College in 1868, where he lectured up to within a few months of his death. He was also Vice-President of the New York Academy of Medicine, President of the Pathological Society, and corresponding member of the Paris Société de Chirurgie. Dr. Van Buren translated and annotated several valuable works in his chosen department of medical science, and published in later life lectures on "Diseases of the Rectum," and a text-book on "Genito-Urinary Surgery." His reputation as a teacher was very great, and his skill and judgment in surgical cases ranked high. Dr. Van Buren married a daughter of Dr. Valentine Mott in 1842. His wife and two married daughters survive him.

Washburn, Israel, an American legislator, born in Livermore, Maine, June 6, 1813; died in Philadelphia, May 12, 1883. His early education was obtained at the public school, but after his fourteenth year he was in charge of private tutors at home. He studied law, was admitted to the bar in 1834, and practiced with fair success in Orono, Maine. During the years 1842–'50 he served in the State Legislature, and in 1850 was elected to Congress as a Whig. He was re-elected in 1852, 1854, 1856, and 1858. He served in Congress continuously from Dec. 1, 1851, to Jan. 1, 1861, when he resigned, having been elected the year previous Governor of Maine. He was re-elected in 1861, but declined a third term. Subsequently he was appointed Collector of Customs at Portland, Maine. He published in 1874 "Notes Historical, etc., of Livermore, Maine."

OBITUARIES, FOREIGN. Barca, Francisco, Spanish minister to the United States; died by his own hand in New York, July 29, 1883, while under depression of spirits produced by ininsomnia. He was born at Puerto Real, near Cadiz, in 1831. After studying law at Madrid, he was at the age of twenty-three given a place in the Department of the Interior. He lost the office upon the defeat of the O'Donnell Cabinet, but resumed it after the accession of the Union Liberals in 1858. He was elected a deputy for the district of Puerto de Santa Maria in 1858, and held that seat for seven or eight terms, taking a high rank as a parliamentary orator. In 1868 he was associated with Herrera as Director-General of the Administration. During the Revolution of 1868 he advocated the candidature of the Duc de Montpensier for the throne. After the choice of Amadeus he worked for the restoration of the royal family in the person of Don Alfonso. When the latter was proclaimed King, Señor Barca took the office of Sub-Secretary of the Interior, which he resigned after a year and a half, on account of his sympathies with the Liberal Opposition. He declined several high offices before accepting, in 1881, the post at Washington. Señor Barca was an advanced Liberal. He published a "Dictionary of Politics and Administration," and other works.

Barret, Ferdinand, a French politician, died Nov. 13, 1883. He was born in 1806, defended Louis Napoleon's accomplices in the attempts at Strasburg and Boulogne, was Minister of the Interior in 1849, and a Senator under the empire. He was elected Life Senator as a Bonapartist in 1877.

Boeresco, Basile, a Roumanian statesman, died in Paris, Dec. 7, 1883. He was born in 1830, the son of a poor peasant. He studied in Paris, and returned to Bucharest with the degree of doctor of laws in 1851. He soon acquired a reputation as a practicing lawyer, but occupied himself also with politics, and, as a member of the commission appointed in 1858 to consider the question of uniting Moldavia with Wallachia, advocated the union with success. He was then appointed Minister of Justice by Prince Cuza, and two years later Minister of the Exterior. He opposed the Cogelniceano ministry, and after the fall of Cuza was called into Prince Charles's Liberal Cabinet as Minister of the Exterior in 1868. He worked energetically to obtain the sanction of Europe to Roumanian independence. When the Danube question came up, he was driven from office under suspicion of having entered into secret engagements with Austria.

Bonnechose, Cardinal de, Archbishop of Rouen, died Oct. 28, 1883. He was born May 30, 1800, of Protestant parents, and was a magistrate before he joined the priesthood in 1830. He became a cardinal in 1863, and defended in the Senate the temporal power of the Pope. He was distinguished as an orator. In his charges of recent years he condemned the ecclesiastical policy of the republic, but in moderate language.

Burke, Thomas N., an Irish clergyman, born in Galway, Ireland, Sept. 8, 1830; died in Dublin, July 2, 1883. He went to Perugia, Italy, in 1847, and became a Dominican. Thence he went to Rome, and studied there for five years. He returned to Ireland as a priest, and estab-

lished a novitiate for the order of St. Dominic. Here he became famous for eloquence and skill as a public speaker. Father Burke went to Rome again, and was made Superior of St. Clement's. He remained in Rome till 1854, when he made his way back again to Dublin. In 1871 he visited the United States in the capacity of Visitor-General of the Dominican Order. He delivered lectures almost daily, with great power and effect. In November, 1872, he lectured in New York, on J. A. Froude's views of the relations between England and Ireland, which resulted in an animated controversy. Father Burke also published "Lectures and Sermons" in 1873.

Curtius, Conrad, a German philologist, died in Munich in September, 1883, at the age of 52. He was born in Saxony, and studied at Leipsic under Haupt and O. Jahns. After graduation he made a classical tour in Southern Europe, became extraordinary professor at Leipsic, was ordinary professor at Tübingen at the age of thirty-one, was professor at Jena and Zurich, and from 1874 at Munich. Besides an exhaustive geography of Greece and numerous editions of classical works, he published an annual review of the progress of the science of classical antiquity, and recently completed a "History of Philology."

Carl, Prince, of Prussia, the last surviving brother of the German Emperor, died in Berlin, Jan. 21, 1883. He was born in 1801, and married a sister of the present Empress, a Princess of Saxe-Weimar. He passed through the grades of military promotion to the rank of field-marshal, and as chief of artillery introduced improved ordnance; yet unlike his son, Prince Friedrich Carl, he never conducted any military operations.

Castellani, Alessandro, an Italian antiquary, died June 8, 1883. His father was a picture-dealer and jeweler, the reviver of the granulated goldsmith's work of the Etruscans and the classical styles of jewelry, which have been further developed by his other son Agosto, and by Giuliano, in London. Alessandro was an ardent republican. In consequence of the Revolution of 1848, he was confined in the castle of St. Angelo, from which he escaped by feigning insanity. He settled at Naples as a collector and dealer in antiquities. His knowledge, taste, and business tact enabled him to lay hands on all the finest discoveries of Etruria and Southern Italy, and to dispose of them at profitable prices to the European museums. Two large collections were bought by the British Museum. A third, composed of gems, gold ornaments, and bronzes, was offered at the Centennial Exhibition to any American museum; but, as the price was not obtained, it was disposed of in Europe.

Charles II, Duke of Parma, died in Nice. He was born in 1799, and succeeded his mother in the duchy of Lucca in 1824. This land was ceded to Tuscany in 1847. In that year he succeeded Marie Louise, widow of Napoleon, in the duchy of Parma. By the Revolution of 1848 he was driven out, and in Saxony signed an abdication in favor of his son, who died in 1854. The son of the latter was dispossessed in 1859. Duke Charles married in 1820 the daughter of Victor Emanuel I of Sardinia. In later life he resided at Nice, under the title of Count of Villafranca.

Clésinger, Jean Baptiste Auguste, a French sculptor, died in Paris, Jan. 6, 1883. He was born at Besançon in 1814, and studied sculpture under his father and then in Italy. He gained his first reputation with a bust of Scribe, and executed several others. In 1846 he exhibited a faun and a statue of "Melancholy," and in 1847 four pieces, one of which, a statue of a girl bitten by a serpent, was greatly admired. In 1848 he presented the Provisional Government with a colossal bust of "Liberty," and executed a statue of "Fraternity," statues of Rachel as "Phædra" and "Lesbia," statues of "Tragedy," "Sappho," "Cornelia and her Children" (1861), "Cleopatra" (1869), equestrian statues of Francis I (1856) and the present Austrian Emperor (1873); and portraits of George Sand, whose daughter he married, Gen. Cissey, and others were among his numerous works. He followed Canova in using color and picturesque effects, but carried this classical revival to the extreme of effeminacy.

Collier, John Payne, an English Shakspearean critic, died Sept. 18, 1883. He was born in 1789. His father, John Collier, was a writer and publisher. The son, after studying law, became a parliamentary reporter and a writer of essays and reviews. As editor of the "Evening Chronicle," he began to write about Elizabethan literature, and he soon after devoted himself more completely to literature, and was the most efficient seconder of the efforts of Lamb and Hazlitt to revive an interest in the minor poets of Shakespeare's time. He published "The Poetical Decameron," brought out a new edition of Dodsley's "Old Plays," prepared a "Bibliographical and Critical Catalogue," and, with the facilities of the libraries of Lord Egerton and the Duke of Devonshire at his command, published "New Facts regarding the Life of Shakespeare." He published Shakespeare's plays, and wrote a "Life of Shakespeare," and many other works. A discovery of a folio of Shakespeare with marginal notes gave rise to a controversy in 1859–'60, and imputations against his literary honesty.

Conscience, Hendrik, a Flemish novelist, died Sept. 10, 1883. He was born Dec. 3, 1812, at Antwerp, where his father, a Frenchman from Besançon, was settled as a merchant. He enlisted in the Belgian army in 1830, at the time of the Revolution, and, during his four years' service, wrote numerous martial and patriotic songs in the manner of Béranger, most of them in Flemish. When he was discharged, in 1836, his father gave him the choice of pursuing a mercantile career and giving up writing, or of shifting for himself. He

found employment as a gardener, then as a village schoolmaster, then as a clerk, writing at the same time romantic tales taken from Flemish history. In 1838 the Anti-French League was started, which aimed to make the Flemish the national language. Conscience's national stories were circulated broadcast. He then changed his subject and manner, and depicted the ordinary life of the people in a style of child-like simplicity. "Evening Hours," "The Executioner's Child," "Rikketikketak," and "The Conscript," are among the best realistic novels that are written in any language. Appointed by the King teacher of Flemish to his children, and receiving a sinecure in the public service, he continued writing, but the freshness and vigor of his first stories were wanting until the loss of his appointment through a change of ministry stimulated his faculties, when he produced "The Martyrdom of a Mother," "The Child-Stealer," and "The Blue House." He was one of the most prolific of modern authors; the number of his novels was over eighty. Though they are inspired by a political idea, the artistic merit, particularly of his novels of popular life, is of the highest order. Conscience was passionately devoted to the national movement, of which he was the apostle, and was the idol of the people.

Deschamps, Cardinal, Archbishop of Mechlin, died Sept 30, 1883. He was born in 1810, was a journalist in early life, and took an active part in the movement for Belgian independence. He began the study of theology in 1831, and, after graduating at Louvain, joined the Redemptorists. He became distinguished as a preacher, was head of a monastery, in 1865 was consecrated Bishop of Namur, and in 1867 Archbishop of Mechlin. He took a leading part in the Œcumenical Council, and in the election of Pope Leo X.

Dindorf, Wilhelm, a German philologist, died in Leipsic, August 7, 1883, at the age of 81. He resigned a professorship in Leipsic University and devoted himself, when about thirty years of age, to critical study of the Greek classics. He published critical editions of Aristophanes, Demosthenes, and other Greek writers, "Scholia" on Homer, and many other works relating to the literature of ancient Greece. Unsuccessful financial speculations forced him to sell his library in 1879, and preyed on his mind to such an extent as to incapacitate him for his literary studies.

Doyle, Richard, an English caricaturist, died in London in December, 1883. He was the son of John Doyle, a caricaturist, and was born in London in 1826. His sketches of character in "Punch" contributed greatly to the success of that journal, which he left in 1850 on account of its attacks on Cardinal Wiseman and the Catholics. The title-page of "Punch" which he designed is still in use. He illustrated many books of humor and fancy, notably "The Continental Tour of Brown, Jones, and Robinson" (1854), "The Newcomes," "The Fairy Ring," Leigh Hunt's "Jar of Honey," and "In Fairyland." He exhibited many water-color drawings.

Erk, Ludwig, a German composer, died Nov. 30, 1883. He was born Jan. 6, 1807, at Wetzlar, where his father was organist. He lived in Berlin. As a composer of glees and part-songs, and of music for schools, he was unexcelled.

Flotow, Friedrich von, a German musical composer, died in Darmstadt, Jan. 24, 1883. He was born in 1812, on the estate of his family in Mecklenburg-Schwerin. He devoted himself early to music, studying in Paris under Reicha, a famous theorician. The first of his works that was produced on the stage was the "Shipwreck of the Medusa," which obtained a season's success in Paris in 1839–'40. In 1844 he produced the opera "Alessandro Stradella," which became a popular favorite, at first in Germany and then in other countries. In 1847 appeared at Vienna the still more popular "Martha." None of Flotow's compositions except these two operas contained the elements of permanent success, though refinement and exhilarating gayety characterize all his music.

Gravez, Théodore, Bishop of Namur, died July 16, 1883. He was born at Sivry, in Hainault, in 1810. He succeeded Monsignor Deschamps as Bishop of Namur, Dec. 20, 1867. He was the most ardent of the Syllabists, and kept up the conflict against the new ecclesiastical laws after Pope Leo had instructed the clergy to respect the Belgian Constitution, particularly by an anti-constitutional catechism recently published.

Gungl, Josef, a Hungarian musician, died Nov. 25, 1883, at Zsambeck, where he was born, Dec. 1, 1810. First distinguishing himself as a player on the oboe, he became a band-master, and attained a world-wide celebrity as a composer of dance-music, rivaling the compositions of Strauss. He led an orchestra in Berlin, with which he made a tour in the United States, removed to Brünn in 1858, thence to Munich in 1864, and finally to Frankfort in 1876.

Halévy, Léon, a French author, died in September, 1883. He was born in Paris, Jan. 14, 1802. Unable to follow the profession of his choice, that of a teacher, on account of being a Hebrew, he applied himself to literature, and obtained in 1837 a post under the Government as archivist. In his youth he published elegiac poems, in 1827 a "Résumé of the History of the Jews," in the same year imitations of the principal foreign poets, in 1834 the poetical drama of "Luther," in 1838 a "History of French Literature," in 1843 and in 1858 collections of fables, which were crowned by the Academy, followed by "Greek Tragedy," a collection of translations from the Greek dramatists, which was also crowned. Among his numerous dramatic compositions are "The Duel," "The Czar Demetrius," "L'Espion,"

"Le Dilettante d'Avignon," "Beaumarchais à Madrid," "Indiana," and "Le Chevreuil." He wrote also a life of his brother, the composer.

Iwakura, Tomomi, a Japanese statesman, died in Yeddo, July 20, 1883. Till within a short time of his death, he held the post of Third President of the Council, which he resigned on account of ill health. He was a member of the Kuge, or noble class, which had suffered in political power and territorial position in common with the Mikado. He was educated at Kioto, and attached himself at an early age to the person and fortunes of the Mikado, who at that time was kept in confinement and made to endure all kinds of privations. Iwakura, with the Prime Minister, Sanjo Sanerjoshi, finally organized the party of the Mikado. In 1871 he went to the capital of Satsuma as special envoy to obtain the assistance of that prince. In August of the same year he was constituted Vice Prime Minister, the office which he held till his retirement. He opposed the schemes of aggrandizement in Corea and Formosa, which attracted the younger school of politicians, and was accounted the chief of the peace party. He was placed at the head of the mission sent to Europe for the purpose of revising the treaties with foreign powers, but returned without accomplishing his object.

Jessel, Sir **George**, an English judge, Master of the Rolls, died in London, March 22, 1883. He was the son of a Jewish merchant, and was born in London in 1824, was graduated at University College in that city in 1844, and was called to the bar in 1847. He was elected to Parliament for Dover in 1868, and appointed Solicitor-General in 1871, and Master of the Rolls in 1873. He was the first Jew that ever sat on the English bench, and received high credit for his labors in working out the harmonious combination of equity jurisdiction with that of common law.

Jung, Sir **Salar**, a Hindoo statesman, died of cholera, at Hyderabad, Feb. 8, 1883, at the age of 54. He was the descendant of a family which had furnished the Nizam of the Deccan, or Hyderabad, with his Dewan, or Prime Minister, since the founding of the dynasty in the beginning of the eighteenth century. He filled official employments from his youth, and in 1853 succeeded his uncle, Suraj-ul-Mulk, as Prime Minister. He addressed himself to the reform of the abuses which led to the intervention of the English and the annexation of the Berar province. The country was a prey to a turbulent nobility who plundered the rural districts, and a lawless Arab soldiery who terrorized the capital. Lord Dalhousie meditated the extension of British rule over the Deccan, and such would have been the ultimate fate of the Nizam's kingdom if the Mutiny had not taxed the energies of the British to preserve the possessions already acquired. When the rebellion was suppressed, Salar Jung had succeeded in reforming the state. He gradually reduced the Arab mercenaries to discipline, and employed them to establish civil order and subjugate the quarrelsome and freebooting military chiefs. Trade and agriculture revived, while the Dewan purged the court of vices and corruption, and established an orderly civil administration on the British model. His work was indifferently appreciated by the Nizam Afzul-ud-Dowlah, who subjected him to petty restrictions and suspicious surveillance. On the death of that sovereign, he was, in 1869, through pressure exerted by the Indian Government, appointed Regent, jointly with the late Amir-i-Kabir, during the minority of the infant prince. His administrative reforms were not suffered to relapse, but were kept energetically in operation to the day of his death, so that Hyderabad was as well governed as any of the British provinces. Salar Jung cherished the hope that the English would restore Berar to the Nizam, in which vain expectation he visited England in 1876.

Laboulaye, Edouard René Lefebvre, a French jurist, died in Paris, May 25, 1883. He was born in Paris, Jan. 18, 1811. In his 28th year he won a wide reputation as a scholar by publishing a work on the "History of Landed Property in Europe." He announced his trade, that of a type-founder, on the title-page. Three years later he obtained admission to the bar. A second work, on the "Life and Doctrines of Savigny," which first familiarized the French with the teachings of the historical school, was published about this time. This was followed by elaborate treatises on "The Civil and Political Condition of Women from the Time of the Romans" (1843), and "Roman Criminal Legislation respecting the Responsibilities of Magistrates" (1844). In 1849 he was chosen Professor of Comparative Legislation in the College of France. He was an ardent republican, and in consequence of his opinions the Imperial Government found means to prevent his election to the Corps Législatif. He was a careful observer of the politics of the United States, and an admirer of the American Constitution. In 1855 he published the first part of a "Political History of the United States," which was completed in 1866. He translated into French the works of William Ellery Channing. He wrote also "Studies on Germany and the Slavonian Countries," and "Religious Liberty," besides minor works. During the American civil war he was a zealous advocate of the cause of the Union, writing with this object, "The United States and France." His most popular work is "Paris in America" (1863), a political allegory. A "Programme of the Liberal Party" was published in 1865, and the "Memoirs of Franklin" in 1866–'67. In the beginning of 1870 he was appointed a member of a commission to inquire into the administration of the Seine department. He ceased his opposition to the empire in the face of foreign trouble, declaring his belief in the necessity of a "peaceful revolution," and advocated an affirmative vote in the *plébiscite* of May, express-

ing his belief in the reforms promised by Napoleon and Émile Ollivier. For this he was hissed by the students in the university and compelled to suspend his lectures. In July, 1871, he was elected to the National Assembly for the department of the Seine. As secretary of the committee of thirty on the Constitution, he combated the monarchists effectually. He took a prominent part in the debates, voting with the Left Center, in support of Thiers, and in favor of the existing press and education laws. In 1875 he was elected a life Senator. In 1876 he was appointed Administrator of the College of France. In 1877 he resumed his lectures on comparative legislation. He was an earnest advocate of absolute freedom of education, and, in social questions, believed in the principle of co-operation and approved of the establishment of libraries and similar institutions for the working class. Laboulaye was a republican of the old school, whose ideal was presented in De Tocqueville's description of American institutions. He was a stranger to the republican ideas of the modern generation of Frenchmen. His later life was embittered by the antagonism with the Liberals in which he was placed by the educational and anticlerical legislation which he opposed in the Senate.

Lasteyrie, Jules, Marquis de, a French politician, died in Paris, Nov. 15, 1883. He was born Oct. 31, 1810, and was a grandson of Lafayette. He was an officer in the army of Dom Pedro. In 1842 he entered the French Chamber. He was expelled in 1852 for protesting against the *coup d'état*, but was amnestied. He was elected as an opposition candidate in 1869, and sat in the National Assembly of 1871, voting with the Right Center, but afterward joining the Left Center and voting for all the new constitutional laws. He was elected Senator for life, Dec. 10, 1875. He wrote a "History of Political Liberty in France."

Lenormant, François, a French archæologist, died in Paris, Dec. 9, 1883, from a malarial affection contracted during explorations in Calabria. He was born Jan. 17, 1837. He was gifted with an extraordinary memory, and under the tuition of his father, the distinguished archæologist, Charles Lenormant, he early developed skill in research. He published a learned essay when only fourteen years old, and at the age of twenty won the numismatic prize of the Academy of Inscriptions. During his archæological tours he was a witness of the massacres of the Druses in Syria, in 1860, of which he wrote a graphic account. He made important excavations at Eleusis in the same year. In 1874 he was appointed Professor of Archæology in the National Library. He served as a volunteer in the siege of Paris, and was wounded at Buzenval. He was a profound and original writer on the archæology of the Bible, was a high authority in numismatics, and wrote with great historical grasp and economical insight of the monetary systems of the ancients. He was especially great as an Assyriologist and investigator in the history of all the ancient Oriental empires, and wrote numerous monographs on cuneiform syllabaries, etc., and general treatises on the ancient history of the East.

Lopez, Antonio, Marquis of Comillas, a Spanish financier, died in Barcelona, Jan. 17, 1883. He was born in 1820, in the village of Comillas, from which he took his title when raised to the hereditary nobility by the King, who visited his castle in 1881. Lopez was born poor, but succeeded early in business, laying the foundation of his fortune, which was estimated at the time of his death at $25,000,000, in Cuba. He was the founder of the great Spanish line of transatlantic steamers, and was engaged in the Philippine Tobacco Company and other large commercial undertakings.

Mahmoud Nedim Pasha, Grand Vizier of Turkey in the reign of Abdul-Aziz, died in Constantinople, May 17, 1883. Under his vizierate the Sultan was encouraged to ignore the Porte. After the decree of insolvency he was virtually exiled. He was recalled in 1879, and made Minister of the Interior.

Majlath von Szekhely, Georg von, President of the Hungarian Upper House and Chief-Justice of Hungary, was murdered by his servant and an accomplice, March 29, 1883. He was born in 1818, and was appointed to the Diet in 1839 and in 1843. He subsequently filled the office of Hungarian Chancellor at Vienna until 1869, in which year he was made President of the Upper House in Pesth.

Manet, Edouard, a French painter, died April 30, 1883, aged 50. He studied under Thomas Couture. In 1863 he offered to the Salon a painting in a new manner, which made a sensation in the exhibition of rejected pieces. He spent his life and his fortune in seeking recognition for his "impressionist" idea of reproducing tones of light, or solving the problem of the transparency of shades.

Marno, Ernst, an Austrian traveler, died at Fazogl, Africa, Aug. 17, 1883. He was born in Vienna in 1844, and devoted himself to the study of zoölogy. He visited Abyssinia when 21 years of age, and after remaining in Vienna for two years, returned to Africa, where he spent most of his remaining years. He traveled by way of Sennaar and Fazogl to Fadasi, which had never before been visited by a European, was the first to explore Giraffe river, went to Gondokoro in 1872, accompanied Col. Long on an excursion to Mundo and Makraka in 1874, took service under the Belgian International Association in 1876, and led a party to Kvakiora from Zanzibar, but returned, and, going back to the Soudan, was made Vice-Governor of Galabat by Gen. Gordon. Reouf Pasha sent him to Fashoda to check the slave-trade in 1880.

Martin, Henri, a French historian, died Dec. 14, 1883. He was born in St. Quentin, Picardy, Feb. 20, 1810. He early conceived the idea of writing the history of France in a

patriotic manner, and his patriotism soon took on an ethnological character. The French he conceived to have inherited from the Druidical Celts qualities making them superior to other races, and his "History of France" was composed in this spirit. The conscientious earnestness of his political convictions, and his blameless and dignified character, won a degree of respect from the people of Paris that was paid to few of his contemporaries. He attempted to rescue the republican constitution at the time of Napoleon's *coup d'état*, but under the empire he was not molested. He was chosen Senator on the establishment of the third republic. His historical writings are numerous.

Marx, Karl, a German socialist, died in London, March 15, 1883. He was born at Trier, May 2, 1818. His father was a lawyer. He studied law and philosophy at Bonn and Berlin, and was about to become a tutor at Bonn, when a chance acquaintance led him to enter the office of the radical "Rhenish Gazette," the direction of which he assumed in 1842. A year later the paper was suppressed. Marx went first to Paris to study the French political economists, and directed his attention at the same time to Hegel's philosophy of jurisprudence, on which he published a critique in 1844 in the "Franco-German Year-Book," edited by him and Arnold Ruge. Expelled from France, he settled at Brussels, where he published, in 1847, the first of his writings on economical questions, a polemic entitled "Misère de la philosophie," in answer to Proudhon's "Philosophie de la misère." In the same year, in conjunction with his Rhenish countryman, Friedrich Engels, who had studied for years the economical conditions of England, he set on foot the first and most famous of socialist congresses in London, at which the "Manifesto of the Communistic Party" was published. For this he was expelled from Belgium, and at the outbreak of the revolution returned to Cologne, where he edited—in association with Engels, Freiligrath, Hermann Becker, Albert Wollf, later of the "Figaro," who furnished *feuilletons*, Ferdinand Lassalle, and others—the "New Rhenish Gazette." His acquaintance with Lassalle bore important fruits in the Social-Democratic movement in Germany, and the present social projects of the German Government. The journal called upon the people to refuse to pay taxes after the counter-revolution, and for this it was suppressed. Marx then fled to England, and devoted himself to the study of the conditions of labor in the line of research initiated by Engels. The effect of Marx's contributions to the science of political economy was marred by his revolutionary schemes to carry his theories into practice. In 1864 a socialist meeting was held in St. James's Hall, in London, at which socialism was declared to be communistic and international. A committee was appointed to draw up a plan of organization. In the committee Marx was the principal person. He drew up the statutes which were adopted at the Socialist Congress at Geneva in 1866 as those of the International Society, of which Marx remained, under the title of secretary, the head and acknowledged leader until 1872. A defection of the English members resulted in the victory of the Federalists, who advocated the organization of the labor movement on national lines. Marx consequently ceased his agitation. His principal work was "Capital" (1867), preceded by a "Critique on Political Economy" (1859). A second part of his great work, dealing with the distribution of wealth, while the first treated of production, was left in manuscript. Marx assailed the English school of political economy with great dialectical power, but in a polemical tone, which concealed the extent to which he assimilated the ideas of Adam Smith and the older writers. His wife was a sister of Minister von Westphalen, of the Prussian reactionary Cabinet headed by Manteuffel.

Moffat, Robert, a Scottish missionary, died August 10, 1883. He was born at Inverkeithing in 1795, and was a gardener, but was sent to South Africa in 1816 by the London Missionary Society. Soon after obtaining the reluctant permission of the Governor to undertake his Christianizing labors, he made a convert of Africaner, chief of the Namaquas, the scourge of the border. Proceeding farther, he took up his abode among the Bechuanas. This nation he slowly educated in religion and civilized arts. Visiting England in 1842, he persuaded Livingstone, who afterward married his daughter, Mary Moffat, to return with him and share his work. Moffat continued his labors at Kuruman, and extended his teachings among the distant Matabele and Makololo until his final return in 1870. He was occupied a large part of his life with the difficult task of translating the New Testament into the Bechuana language.

Mtesa, Emperor of Uganda, died in the summer of 1883. He was a despot, who consolidated a powerful kingdom around Lakes Victoria and Albert. He received the emissaries of the Khedive and the Christian missionaries, Catholic and Protestant, with deceptive complacency, and held out hopes of his conversion to Islam or to Christianity. Although a monster of cruelty, he impressed European visitors, especially Henry M. Stanley, with his intelligence and courtesy. He was particularly covetous of arms and gunpowder, and obtained many presents from travelers. His principal subjects sought to have their daughters taken into the royal harem, which numbered 7,000 women. Mtesa was possessed with the delusion that he was the greatest monarch in the world, and was ambitious to extend his power. Over his subjects he exercised a boundless tyranny. He was sprung from the Wahuna chiefs who obtained possession of the country at an early date. He was not, however, of pure race, but had a considerable admixture of negro

blood. He traced his lineage through thirty or forty rulers to Kiutu, the founder of the dynasty. He was tall, slim, and graceful, with an intelligent face. He died of a consumptive malady. His age was under fifty.

Nilson, Sven, a Swedish naturalist, died Dec. 8, 1883. He was born at Landscrona, March 8, 1787. He was graduated at the University of Lund in 1811, took charge of the natural history museum, and in 1821 was appointed professor. His great work on the "Scandinavian Fauna" was begun in 1820 and completed in 1853.

Obeidullah, Sheik, died in Mecca in the autumn of 1883. He was descended from the daughter of the Prophet, and was esteemed one of the three holiest personages in Islam. He was chief of the warlike Kurds who dwell on the confines of Persia and Turkey, over whom the Porte and the Shah both claimed the sovereignty. Obeidullah aimed to achieve the independence of his tribe, and to wrest a sufficient territory from Turkey or Persia. The authorities at Stamboul are said to have incited him to the invasion of Persia, even furnishing Martini-Henry rifles to the Kurds. In April, 1881, a small army of Kurdish horsemen raided the region around Lake Urumiyah, destroying the Persian towns, under the lead of a son of the sheik and a chief named Hamya Aga. The Persian general, Mirya Khan, finally defeated them in a pitched battle. When Obeidullah was advancing with his main army to support his son, he learned that a large Turkish force was marching upon him in the rear, and fled to the mountains. An emissary of the Porte, by promises of honors and distinction, lured him to Stamboul, where he was placed in confinement. During the fast of the Ramazan he made his escape, and, rallying his followers, attempted another raid, encouraged, it was rumored, by the Russians. He was captured by the Turks in October, 1882, but was rescued by Kurds from the convoy which was taking him to Mosul. He was besieged in the mountain stronghold of Kouruma and defeated. Disappointed in his ambition and broken in health, he spent his last days in religious exercises. He was visiting the Kaaba at Mecca when, like many other pilgrims, he fell a victim to the cholera. He was a man of striking appearance, a Bedouin of the purest blood, between fifty and sixty years of age, below the medium stature, with deep-sunk, gleaming eyes, under arched eyebrows, and a long, slightly aquiline nose.

Overstone, Baron, Samuel Jones Loyd, an English financier, died in London, Nov. 17, 1883. He was born Sept. 25, 1796. His father, Rev. Lewis Loyd, had abandoned the Church to engage in business with his father-in-law, and had built up the banking-house of Jones, Loyd & Co., which was merged subsequently in the London and Westminster Bank. He was educated at Eton and Cambridge, sat in Parliament from 1819 to 1826, succeeded his father in the banking-house in 1844, and was raised to the peerage in 1850. He was the chief authority in England on banking, and had great influence in shaping financial legislation, and especially in establishing the English monetary system on a sound basis and giving the Bank of England a safe and conservative constitution. He was chairman of the Irish Famine Committee in 1847, and an influential promoter of the Great Exhibition of 1851.

Pierre, Pierre Joseph Gustave, commander of the French squadron which bombarded the ports of Madagascar, died early in September, 1883, on board the Caledonia, before landing on his return voyage, while in quarantine at Marseilles. He was one of the ablest officers in the French navy; but his acts in Madagascar gave offense to the English, which led to his recall. He was born Feb. 28, 1827, at Dijon, entered the naval school in 1841, distinguished himself at Mogadore and Tangiers, and was promoted to be ensign in 1846, and lieutenant in 1853, serving from 1856 to 1858 in hydrographical labors. He was made a Chevalier of the Legion of Honor in 1857. From 1861 to 1865 he was aide-de-camp to Admiral La Roncière. He was promoted captain in 1865, and commanded the Néréide in Oceania in 1869–'70. On his return he took part in the national defense, and was present at the battle of Orleans. He was director of evolutions at Cherbourg in 1872, member of the hydrographical committee, and commander of the Infernet in New Caledonia, and was promoted to rear-admiral in 1880. He aided in the revision of the cadre, and was a member of the Almiralty Council until he took command of the Division of the Indian Ocean, Feb. 1, 1883.

Reid, Mayne, an English writer of fiction, died Oct. 22, 1883, at his residence near London, aged sixty-five. He was a native of the north of Ireland, and was educated for the Church, but following an adventurous bent he started for Mexico in 1838, lived for five years by trading and hunting in the far West, traveled through the United States, took a commission in the American army on the outbreak of the Mexican War, and distinguished himself at Vera Cruz and Cherubusco. He raised a company in New York to aid the Hungarian revolutionists in 1849; but, learning of the failure of the insurrection when he reached Paris, he settled in London and devoted himself to writing romances in which the fruits of his observations of nature and strange customs in many lands were set off with thrilling plots and incidents. His books have an irresistible fascination for boys. The most popular are the "Rifle Rangers" and the "Scalp-Hunters."

Rhallis, George, a Greek statesman, died in September, 1883, at the age of eighty. In the early period of the Hellenic kingdom he filled the post of Minister of Justice, and then became President of the Supreme Court and Court of Cassation, and Professor of Commercial Law in the University.

Rivière, Henri, a French naval officer, chief of the expedition to Tonquin, killed in the fight at Hanoi, May 19, 1883. He was born in Paris, in 1827. He entered the naval academy in 1843, became midshipman in 1845, ensign in 1849, lieutenant Nov. 29, 1849, and captain of a frigate June 1, 1870. He was instrumental in suppressing the insurrection of the Kanakas in New Caledonia, and, as commander of the French squadron in Tonquin, given the command of the expedition against the Anamites. (See TONQUIN.) Commandant Rivière was a graceful and original author of novels, as well as a brave and able officer. Of a long list of tales published under various pseudonyms the most successful were "Pierrot" (1861) and "Cain" (1870). He also wrote two successful plays and two professional treatises, one on the French navy under Louis XV, and one on New Caledonia.

Sabine, General Sir **Edward,** an English soldier and scientific discoverer, died at Richmond, England, June 26, 1883. He was born in Dublin, Oct. 14, 1788, and entered the army in 1803. The only active service he saw was during the American War of 1812, when he commanded the batteries at the siege of Fort Erie. His mind was turned at an early age to physical science, particularly the subject of terrestrial magnetism. He was appointed astronomer of the first expedition sent in search of a northwest passage, commanded by Sir John Ross, and accompanied the Parry expedition of 1819–'20 in the same capacity. He conducted pendulum experiments near the equator in 1821–'22, to determine the figure of the earth, and in 1825 was one of a commission appointed to determine the difference in longitude between Greenwich and Paris. For many years he carried on privately a series of experiments on terrestrial magnetism and the acceleration of the pendulum in different latitudes. Colonial observatories to determine the dip, intensity, and inclination of magnetism were founded and placed under his direction. He was President of the Royal Society from 1861 to 1871, and actively pursued scientific studies till near the close of his life.

Safvet Pasha, ex-Grand Vizier of Turkey, died in Constantinople, Nov. 17, 1883. He was born in that city in 1815, and entered the Government service in early life. He was secretary to the Sultan, and then to the embassy in Paris, became President of the Council of State in 1859, Minister of Commerce and Public Works in 1861, embassador at Paris in 1865, and Minister of Commerce again in 1866. In 1868 he was appointed Minister of Education, and during his term of office founded the college at Galata, and introduced other educational reforms. He was Minister of Justice in 1872, Minister of Education again in 1874, and Minister of Foreign Affairs in 1875, resigning in 1877 on account of a disagreement with the Grand Vizier over the question of a war with Russia. In 1878 he was again appointed Minister of Foreign Affairs and signed the Treaty of San Stefano. He was made Grand Vizier in June, 1878, and, when succeeded by Khaireddin Pasha in December of that year, accepted the embassadorship to Paris, resigning in a few months on account of failing health.

Salamanca, José, Marquis of Salamanca, a Spanish financier, died at his villa near Madrid Jan. 21, 1883. He was born in May, 1811. He studied law in the University of Granada, practiced as an advocate, and was appointed judge in Monovar, and afterward Mayor of Vera. He was elected a member of the Andalusian Central Union and sent to the National Cortes in 1837. In Madrid he attracted universal attention by his daring speculations. In 1843 he farmed from the Government the salt monopoly, undertaking to maintain the whole establishment of officials and to pay at least seventy million reales a year. He was Finance Minister for two months under Pachec, but resigned on account of his business, which suffered from his absence. He built an entire new quarter in Madrid, which is called after him. After constructing some important railroads in Spain, he became interested in railroad enterprises in various countries, and projected also the Valladolid Canal. He possessed extensive model and breeding farms. Just before his death he undertook to enlarge the fine old city of San Sebastian, which had many attractions as a bathing-place, but possessed no modern quarter until he recovered the necessary ground from the sea. He was created Marquis of Salamanca and Grandee of Spain in 1866. Since 1837 he had been almost constantly a member either of the Cortes or the Senate.

Sandeau, Jules, a French novelist, died May 3, 1883. He was born at Aubusson in 1811, studied in Paris, and, becoming acquainted with Mme. Dudevant, composed in partnership with her a novel which was published in 1831 and signed Jules Sand. They started to compose "Indiana" together, but the lady wrote it herself, and the name George Sand, by which she was thereafter known, was placed on the title-page by the publisher. Jules Sandeau struck out a line of his own, and wrote many novels and plays, one of which latter, "Le Gendre de M. Poirier," written in collaboration with Augier, became exceedingly popular. In 1853 Sandeau became one of the curators of the Mazarin Library, and in 1858 he was elected to the Academy.

Schulze-Delitzsch, Hermann, a German socialist, died in Potsdam, April 29, 1883. He was born in Delitzsch, Aug. 29, 1808. His father was burgomaster of the town. He studied law at Leipsic and Halle, and, after serving as assistant judge in Berlin, returned as surrogate to Delitzsch in 1841. His attention was attracted to the difficulties of the class of handicraftsmen about 1843. In 1848 he was chosen to represent his native district in the National Assembly at Berlin, and was made chairman of a committee for the investigation of the dis-

tress of the laboring classes. He became impressed with the idea of co-operation as a means of rescuing the small tradesmen from the difficulty of their situation, owing to the development of manufacturing on a large scale. He organized the shoemakers of his own town into a co-operative association for the purchase of their raw material. Before he could develop his schemes further, he had to sustain a prosecution for sedition, as one of the authors of a resolution to refuse to pay taxes, as a protest against the arbitrary acts of the Government. He was acquitted in 1850, and resigned from the magistracy soon afterward, in order to devote himself to the establishment of associations to secure to mechanics the advantages of the wholesale market in the purchase of raw and partly manufactured materials, the necessaries of life, and all articles of regular consumption, and also better credit facilities. Capital was advanced to them on moderate terms, by means of co-operative credit associations, which served also as savings-banks. These banks, established on the principle of joint liability for debts, attracted a great deal of outside capital. Between 1860 and 1876 Schulze wrote numerous popular tracts in defense of the co-operative idea. Lassalle entered the field at the same time as the champion of "state-help," in opposition to "self-help," as exemplified in Schulze's system of co-operation. Germany resounded with their controversy. Although Schulze was no match in wit, eloquence, or dialectic power for his brilliant adversary, he represented the popular thought of the day, formed under the influence of Bastiat's captivating arguments of the harmony of interests between capital and labor. His co-operative stores and banks were organized on sound business principles. They supplied a practical want, and developed into an institution of such colossal proportions and beneficent workings as to justify the impression that they presented the ultimate solution of the social problem. Schulze was the permanent attorney and chief organizer and guide of the co-operative unions. He was elected in 1861 to the Prussian House of Deputies from Berlin, and from 1874 till his death represented Wiesbaden in the Reichstag, attaching himself to the Progressive party, and taking a prominent part in politics.

Spottiswoode, William, an English scientist, died in London, June 27, 1883. He was born there, Jan. 11, 1825. His father was the head of the printing establishment over which he himself presided after he was graduated at Oxford in 1847. He was an accomplished mathematician and Oriental scholar. In 1856 he made a journey in Eastern Russia, of which he published an account. He published, also, a great number of papers on mathematical subjects, and originated new methods of value. He contributed to physical science researches in the polarization of light, and certain forms of electric discharge. He was President of the Royal Society.

Suleiman Bey Sami, an Egyptian soldier, executed at Alexandria, June 9, 1883, on the sentence of a court-martial, which convicted him of having taken a prominent part in the burning of the city after it was evacuated by Arabi. He was the son of Daoud Pasha, a Circassian of high birth, by an Egyptian mother. He was born about 1848, passed through the Polytechnic School at Cairo, and entered the army at an early age, rising by rapid promotion to the grade of major. He served under Prince Hassan in the Russian War of 1878. He sympathized with the national movement, and was appointed by Arabi to the command of a regiment early in 1882. His regiment was quartered at Alexandria, and suppressed the riot on June 11, 1882. He served with his regiment in the defense of the town during the bombardment, and after the evacuation he joined Toulba Pasha at Kafrdawar. After the surrender of Cairo he fled to Crete, and was arrested and delivered up by the Turkish authorities on the representations of the Egyptian Government.

Suleiman Pasha, a Turkish general, died in April, 1883. Having rendered services in the Herzegovinian insurrection and Servian war, he was placed in command of the Army of the Balkans. In defending the Shipka Pass and in the battle of Plevna he showed the highest qualities of generalship, but he was obliged to fall back on the Dardanelles when unable to block the advance of Gen. Gurko from Sophia. After the war he was sacrificed to the wounded patriotism of his countrymen, being tried for treason, and banished to Bagdad.

Tu Duc, Emperor of Anam, died Aug. 8, 1883, at the age of fifty-four years. He was a younger son of Treni-Tri, of the Nguyen dynasty, who nominated him his successor instead of his eldest son, Hoang-Bao. The latter revolted when Tu Duc ascended the throne at the age of nineteen, but was conquered and thrown into a dungeon, where he hanged himself. Tu Duc was the enemy of Europeans. He refused to allow the French envoy to land in 1856, and the following year he put to death the Spanish missionary, Bishop Diaz. The two countries sent an expedition under Admiral Rigault de Genouilly which captured the forts of Turan in August, 1858, and four months afterward attacked Saigon. Admiral Charner in 1862 forced him to sign the treaty of Saigon. Tu Duc sent an embassy to Paris offering an indemnity of $40,000,000, on condition of the evacuation of the country. The amount was reduced to $20,000,000, but France retained a protectorate over the conquered provinces, kept Saigon, and compelled the Emperor to throw open three ports on the Cochin-China coast. Tu Duc encouraged the Black Flags in their reprisals on the French, which led to the expedition of 1873, in which Francis Garnier met his death, and to the war in Tonquin.

Viardot, Louis, a French author, died in Paris, May 5, 1883. He was born in Dijon, July 31,

1800; was educated for the magistracy, and, after a journey in Spain, became a writer, publishing an essay on the Moors in Spain, "Studies on the Institutions and Literature of Spain," and a translation of "Don Quixote." He also translated the works of Pushkin, Gogol, and Turgenieff. He was director of the Italian Theatre in 1838 and 1839. A popular exposition of his liberal philosophical convictions was published under the title of "Libre Examen." He was a distinguished art critic.

Webb, Matthew, an English swimmer, was drowned in an attempt to swim through the whirlpool of Niagara river, July 22, 1883. From bruises on his head it was surmised that he struck upon a rock and became unconscious. He was born at Irongate, in Shropshire, Jan. 18, 1848. He was formerly captain of a merchant-vessel, and received one of the first medals given out by the Royal Life-Saving Society, for rescuing a sailor from drowning. His swimming powers were first brought into public notice by the feat of swimming in the Thames from Blackwall to Gravesend in 1875, and, a fortnight later, that of swimming from Dover to Ramsgate in eight and three quarter hours. These were preparatory to an attempt to swim across the English channel. At his first attempt he was compelled to return by adverse currents, but, ten days later, on Aug. 24, 1875, he accomplished it in twenty-one hours. In June, 1883, he landed in the United States, with the intention of attempting the feat which cost him his life.

OHIO. The State officers for the year were as follow: Governor, Charles Foster; Lieutenant-Governor, Reese G. Richards; Secretary of State, James W. Newman; Auditor, John F. Oglevee; Treasurer, Joseph Turney; Attorney-General, George K. Nash; Commissioner of Common Schools, Daniel F. De Wolf; Board of Public Works, Henry Weible, George Paul, and S. R. Hosmer.

Finances.—On Nov. 15, 1882, the public funded debt of the State was $4,901,665. During the year there was paid $379,150; leaving the public funded debt of the State Nov. 15, 1883, $4,522,515. Since November 15th, bonds of the loan payable after Dec. 31, 1886, to the amount of $31,800 have been paid, leaving the total of the funded debt, $2,314,050, due after Dec. 31, 1886. The local debts at the same time were as follow: Debts of counties, $4,381,680.21; debts of cities, first and second class, $35,231,302.88; debts of incorporated villages, $1,478,526.56; debts of townships, $645,751.21; debts of separate (special) school districts, $1,659,834.64; total local debts, $43,388,095.50. Net decrease in above local debts, $2,378,255.72.

Military.—The present force of the Ohio National Guard consists of eighty-two companies of infantry and seven batteries of light artillery, and a total of 5,457 men, including officers, a reduction during the year of 418.

Insane.—About 3,800 insane people are cared for with the present accommodations furnished by the State, about 1,000 are cared for in the county infirmaries, and there are probably 500 to 1,000 persons in private institutions and with their families and friends.

Railroads.—The report of the Commissioner of Railways shows a steady growth in the mileage and in the business of the railways of Ohio. There were, June 30, 1883, 6,900 miles of railway in the State, an increase over the number of miles of the preceding year of 13·06 per cent. The capital stock of these railways represents a value of $250,743,376.17, an increase of 4·9 per cent. The capital stock and debt make the sum of $478,069,435.16, showing a decline in the indebtedness of 9·55 per cent. The business of this year was an advance of the preceding in the number of passengers, 7·42 per cent.; in the passenger mileage, 2·99 per cent.; in the tonnage, 4·01 per cent.; in ton mileage, 4·04 per cent. The average rate per mile was 2·499 cents, an advance over the former year's rate of 5·6 per cent. The average rate per ton per mile upon freight, 8·75 cents, an advance in the rate of 8·24 per cent. The gross earnings of the year were $49,900,506.26, an increase of 9·02 per cent. The net earnings were $16,326,213.37, an increase of 18·58 per cent., making 3·42 upon the total amount of stock and debt. The operating expenses of the year were $33,574,292.89, an advance of 4·64 per cent. These operating expenses were 67·28 per cent. of the gross earnings. Sixty-eight per cent. of the railways of Ohio are now laid with steel rails. There are 38,723 men employed, an average of 5½ men to the mile.

Coal.—The Inspector of Mines estimates a falling off of the output of the mines of 1,250,000 tons as compared with last year. This is attributed to the present depressed condition of the iron industry, into which the consumption of coal so largely enters.

Crops.—The Secretary of the State Board of Agriculture says the wheat and corn were much damaged by frost, the latter suffering most. The total wheat-crop was placed, in October, on the basis of the returns then received, at 25,500,000 bushels, but later reports showed so much of it shrunken that it was not believed it would make the flour of more than 21,000,000 bushels, or just half an average crop. The total number of acres in corn was 2,499,000; bushels per acre, 2·83; total estimated bushels, 70,741,000, against 90,869,000 in 1882, and a ten years' average of 100,000,000 bushels. The yield per acre, 28·3 bushels, is the lowest for thirty-three years, except 1854, 1856, 1863, and 1864, when it was 26, 27·7, 27·7, 27, and 27 bushels respectively. The total number of acres in potatoes was 106,400; bushels per acre, 113; total bushels estimated, 12,132,600, against a ten years' average of 75·9 bushels per acre, and 8,754,578 bushels total a year.

Live-Stock.—The report of the State Board of Agriculture shows the following percentages of the different breeds of live-stock: Cattle—Per cent. of Shorthorns, 65; Herefords, 2;

Devons, 8; Poled Angus, 1; Jerseys, 19; Ayrshires, 2; Holsteins, 3. Horses—Thoroughbreds, 6; roadsters, 19; general purpose, 52; draught, 23. Sheep—Merinos, 58; Downs, 16; Longwoods, 26. Swine—Poland-Chinas, 46; Berkshires, 27; Chester Whites, 21; Jersey Reds, 6. Poultry—Egg-producers, 51; meat-producers, 49. Condition of farm animals, compared with last autumn, 93.

Temperance Legislation.—The Legislature began its adjourned session January 2d, and closed April 19th. Aside from the time occupied in the perfection of the appropriation bills, the greater part of the session was taken up with the liquor question. In his address to the General Assembly at the beginning of the session, Gov. Foster said:

The liquor-traffic will bring to your attention a question that engages the thoughts of the people more deeply and seriously than any other subject that will come before you. The enormity of the evil is admitted by all, as well as its disastrous effects upon society, and the magnitude of the burdens of taxation imposed by it upon the people, through private and public charities, was never as great as at present. When the present Constitution was adopted, a clause was voted into it by the people, under the belief that through it would be secured a greater restraint to the traffic than had previously existed. Experience has shown that, instead of greater restraint, we have practically free trade in liquor, not only six days in the week, but on Sunday also. In fact, in many localities, Sunday, instead of being, as the law and well-being of society demand, a day of rest and recreation, has become a day of rowdyism and carnivals; instead of being the most orderly, it has become the most disorderly day of the week. It is a humiliating fact that we have in Ohio, to-day, more than 16,000 places where this unrestrained traffic is carried on, taking the hard-earned wages from many thousands of our citizens, whose families need the money thus worse than thrown away. This entire traffic, the amount of which in round numbers will probably exceed $70,000,000 annually, much the larger portion of which is profit, contributes but a tithe of the burden it imposes upon the public through the crime and pauperism created by it.

The laws upon our statute-books, enacted by both of the great political parties, for the avowed purpose of limiting and restraining the evil effects of this traffic, are, to all intents and purposes, except in a few localities, inoperative. I am fully of the opinion that the principle of taxation, judiciously applied to this traffic, will furnish the most satisfactory solution of the problem "How to deal with the liquor-traffic" that is attainable. There seems to be a popular demand for the submission of a constitutional amendment, such as was proposed by the Cleveland Convention, to be voted upon in October, 1883. The following is a copy of the resolution referred to:

"*Resolved*, That the public interests require that the General Assembly should submit to a vote of the people such amendments to the Constitution of the State relative to the manufacture, sale, and use of intoxicating liquors as shall leave the whole matter to legislation."

Such an amendment ought to be submitted to a vote of the people.

The attempts of the majority to carry these suggestions into effect were rendered fruitless, until near the end of the session, mainly through inability to agree upon the exact form rather than from disagreement on the principles involved. Finally, two propositions for constitutional amendments were agreed upon for submission to the people at the October election. They read as follows:

FIRST PROPOSITION.

The additional section in and with section 18 of the schedule shall be repealed, and there shall be substituted for it the following:

The General Assembly shall regulate the traffic in intoxicating liquors so as to provide against evils resulting therefrom; and its power to levy taxes or assessments thereon is not limited by any provision of this Constitution.

SECOND PROPOSITION.

The additional section in and with section 18 of the schedule shall be repealed, and there shall be substituted for it the following:

The manufacture of and the traffic in intoxicating liquors to be used as a beverage are forever prohibited; and the General Assembly shall provide by law for the enforcement of this provision.

This was speedily followed by the passage of a law for the taxation of the liquor-traffic, and the change of existing laws relating to that traffic. From the name of the member introducing it in its original form, it became known as the "Scott law." The title was "An act further providing against the evils resulting from the traffic in intoxicating liquors." The law imposes a tax of $200 yearly on every place where liquors are sold at retail; prohibits, under penalty of $100 fine and imprisonment, the opening of such places on Sunday; and forbids the sale of liquor to a minor, except on the written order of his parent, guardian, or physician.

The Liquor Law constitutional.—The liquor-tax bill had no sooner passed, than an organized effort to oppose it was begun. To facilitate a decision, a case was made in Athens county: the Auditor refusing to publish the notice required by the law, and application being thereupon made by the Attorney-General, in behalf of the State, for a writ of mandamus to compel him to comply with the law. Arguments were heard June 7th and 8th, and the case was reserved for consideration, together with a case coming at the same time from Cuyahoga county, in which the constitutionality of the provision affecting existing leases was brought into question. The decision of the Supreme Court was given June 26th, and sustained the constitutionality of the law.

Other Legislation.—Among the other measures of the session were a law providing for the security of wages of men engaged in the construction of railroads; a law providing for the appointment of a commission with a view to establishing a mode by which differences between miners and employers may be settled; an amendment to the lien law in the interests of laborers; laws facilitating the dispatch of legal business; and the submission to popular vote of a proposed amendment to the Judicial article of the Constitution.

Political Conventions.—The Republican State Convention was held at Columbus, June 5th and 6th. The ticket nominated was as follows:

Those marked with a * were renominations: For Governor, Judge J. B. Foraker, Hamilton county; Lieutenant-Governor, William G. Rose, Cuyahoga county; Supreme Judge (term ending Feb. 9, 1887), *William H. Upson, Summit county; Supreme Judge (term ending Feb. 9, 1889), *John H. Doyle, Lucas county; Clerk of Supreme Court, *Dwight Crowell, Ashtabula county; Attorney-General, M. B. Earnhart, Miami county; Auditor of State, *John F. Oglevee, Clarke county; Treasurer of State, John C. Brown, Jefferson county; State Commissioner of Common Schools, *Daniel F. De Wolf, Lucas county; and Member Board of Public Works, Leo Weltz, Clinton county. The platform declared for a protective tariff; for a restoration of the wool-tariff of 1867; for a National Bureau of Labor Statistics; in favor of the liquor-tax law; for abolition of contract system in prisons; in favor of civil-service reform; and approving President Arthur's administration.

The Greenback-Labor party held its State Convention in Columbus, June 13th. The following ticket was nominated: For Governor, Charles Jenkins, of Mahoning county; for Lieutenant-Governor, William Baker, of Licking county; for Supreme Judges, H. A. Chamberlain, of Lucas county, for short term, and James R. Grogan, of Hocking county, for long term; for Clerk of the Supreme Court, William Bentz, of Franklin county; for Attorney-General, L. G. Tuttle, of Lake county; for Auditor of State, J. H. Rhodes, of Sandusky county; for Treasurer, John Seitz, of Seneca county; for Commissioner of Common Schools, J. Murray Case, of Franklin county; for Member of Board of Public Works, Dr. J. J. Scribner, of Knox county.

The State Convention of the Prohibitionists was held at Columbus, June 14th. There were divided councils in the party, a strong movement being made to omit the nomination of candidates and concentrate all temperance work upon the adoption of the prohibition amendment to the Constitution. At a preliminary conference, held June 13th, the question was thoroughly discussed, and the majority present determined on putting a ticket in the field. At the convention, therefore, a full ticket was nominated, as follows: For Governor, Ferdinand Schumacher, of Summit county; for Lieutenant-Governor, H. D. Ogden, of Hamilton county; for Supreme Judge, Z. C. Payne, of Franklin county, for short term, and long term, D. C. Montgomery, of Knox county; for Clerk of Supreme Court, J. H. Blackford, of Preble county; for Attorney-General, J. W. Roseborough, of Fulton county; for Auditor of State, Gersham Lease, of Hardin county; for Treasurer of State, J. M. Whiting, of Huron county; for Commissioner of Common Schools, H. A. Thompson, of Franklin county; for Board of Public Works, G. Z. Cruzen, of Hardin county.

The Democratic State Convention was held at Columbus, June 21st. The interest turned wholly on the nomination for Governor, there having been a very keen preliminary canvass in the interest of Judge Hoadly, Gen. Durbin Ward, and Judge Geddes. The interest was intensified by the appearance of ex-Senator Thurman as a delegate, and by his earnest appeal in behalf of Gen. Ward. It was, however, unavailing, Judge Hoadly being nominated on the second ballot. The following was the full ticket nominated: For Governor, George Hoadly, of Hamilton county; for Lieutenant-Governor, John G. Warwick, of Stark county; Supreme Court, short term, M. D. Follett, of Washington county; Supreme Court, long term, Selwyn N. Owen, of Williams county; Clerk of Supreme Court, J. W. Cruikshank, of Miami county; Attorney-General, James Lawrence, of Cuyahoga county; Auditor of State, Emil Kiesewetter, of Franklin county; Treasurer of State, Peter Brady, of Sandusky county; for School Commissioner, L. D. Brown, of Butler county; for Board of Public Works, Martin Schilder, of Ross county. The platform favored "a tariff for revenue, so adjusted as to encourage productive industries at home, but not to create or foster monopolies"; providing against the evils of the liquor-traffic "by a judicious and properly graded license system"; abolition of the contract system in the prisons; and civil-service reform.

A State Convention of temperance workers in the interest of the prohibition amendment was held at Columbus, July 24th. This was designed as a protest against the action of the Prohibition Convention which placed a Prohibitionist State ticket in the field. It passed a series of resolutions, the significant one being the following:

That inasmuch as the practical effect of voting for the first amendment will be to favor license; and of voting for neither of the amendments will be to vote against prohibition; and the practical effect of voting for both will be to practically diminish the probability of securing the necessary majority for the second, we most earnestly entreat that each vote be cast for the second amendment and that only.

Election.—The political canvass that followed was one of great earnestness, and engaged more general attention than any election for State officers in many years. An unprecedented feature was the part taken in it by the women. Under the lead of the Women's Christian Temperance Union, whose headquarters were in Cleveland, the whole State was organized in behalf of the second or prohibition amendment, without regard to party lines. A campaign paper was published, and campaign literature thoroughly distributed by the women and their sympathizers. House-to-house canvassing by women was general, and on election-day the women were at the polls in many parts of the State, both in the villages and in the large cities, distributing tickets of all the parties with an affirmative vote for the second amendment. The election was held on Tuesday, October 9th, and resulted in a complete

victory for the Democratic party. The following are the official figures of the vote:

GOVERNOR.

George Hoadly, Democrat	359,798
Joseph P. Foraker, Republican	347,164
Ferdinand Schumacher, Prohibition	8,362
Charles Jenkins, Greenback-Labor	2,937
Scattering	12

LIEUTENANT-GOVERNOR.

John G. Warwick, Democrat	356,413
William G. Rose, Republican	350,009
Henry T. Ogden, Prohibition	8,381
William Baker, Greenback-Labor	2,934
Scattering	2

JUDGE OF SUPREME COURT—SHORT TERM.

Martin D. Follett, Democrat	360,404
William H. Upson, Republican	346,431
Zeno C. Payne, Prohibition	8,206
Henry A. Chamberlain, Greenback-Labor	2,940
J. H. Upson	615
Scattering	5

JUDGE OF SUPREME COURT—LONG AND UNEXPIRED TERM.

Selwyn N. Owen, Democrat	359,672
John H. Doyle, Republican	346,802
David C. Montgomery, Prohibition	8,216
James Grogan, Greenback-Labor	2,892
Scattering	6

Elections for members of the sixty-sixth General Assembly were also held, resulting as follows:

	Senate.	House.	Joint ballot.
Democrats	22	60	82
Republicans	11	45	56
Total	33	105	138

The following was the vote on the constitutional amendments:

Total number of votes cast	721,810
Judicial amendment—Yes	400,922
Judicial amendment—No	141,636
Regulation and taxation of liquor-traffic—Yes	99,849
Regulation and taxation of liquor-traffic—No	192,117
Prohibition of intoxicating liquors—Yes	328,189
Prohibition of intoxicating liquors—No	240,975

To carry either of those amendments required a majority of all the votes cast. The judicial amendment was the only one receiving the required majority, and was therefore the only one adopted.

The Liquor-Question revived.—The defeat of the prohibition amendment was claimed by its supporters to be due to foul play on the part of the election officers. Unofficial recounts were made in some counties, and it was claimed these indicated a falsification of the returns to an extent that affected the result. No legal steps were taken, however, to dispute the count. But the liquor-question was not finally disposed of by the vote on the constitutional amendments. On the 27th and 28th of December the liquor-dealers held a State Convention in Columbus, at which a preamble and resolution were adopted, declaring the Scott law unconstitutional and unjust, and asking the Legislature to enact a judicious and constitutional law in place of it.

This brought into immediate action the Women's Christian Temperance Union, which prepared for a new struggle by sending out circulars for signatures to a petition to the General Assembly, declaring that the second amendment received a majority of the ballots cast, but they were not honestly counted; and asking that a single proposition, to amend the Constitution so as to prohibit the manufacture and sale of intoxicating liquors within the State, be submitted to a popular vote.

Woman Suffrage.—The Woman's Suffrage Association of Ohio met in convention at Columbus, June 13th, and effected a permanent organization by the election of officers for the ensuing year, including the following: President, Prof. N. S. Townshend, of Columbus; Recording Secretary, Dr. Kate Kelsey, Elyria; Corresponding Secretary, Miss Francis G. Janney, Columbus; Treasurer, Mrs. Elizabeth Coit, Columbus. This was the first concerted movement of the advocates of woman suffrage in the State for several years, and, although the attendance at the convention was small, the reports of those present were hopeful.

ONTARIO, a province of the Dominion of Canada. Area, 220,000 square miles; population in 1881, 1,923,228. Capital, Toronto.

Climate.—The southwestern peninsula, between Lakes Huron and Erie, enjoys a much milder climate than Toronto. In the northern districts early and late frosts sometimes occur, but rarely damage the crops. At Toronto, which occupies the average position regarding temperature, the mean for the forty-one years ending 1882 was 44·16° F., the extreme ranges of mean annual temperature being 47·09° in 1878 and 40·77° in 1873. The average of the warmest months for that period ranges from 76·66° in 1881 to 64·46° in 1860; and of the coldest months from 10·16° in 1875 to 26° in 1848. The coldest day was in 1859, when the mercury fell to —26·5°, the mean temperature of the day being —14·38°.

Agriculture.—The settled portion of Ontario, the peninsula south of the forty-sixth parallel, is admirably fitted for agriculture, more especially the western and central districts. The chief products are wheat, barley, oats, corn, and potatoes. The value of good farms varies from $60 to $140 an acre. The provincial Government has always encouraged advanced farming, and supports a fine agricultural college. In the eastern portion of the peninsula a wing of the Laurentian plateau crosses, but the land is good for grazing and dairy purposes. The northern regions of this peninsula, lying between the Georgian Bay and the river Ottawa, are well timbered with pine and oak, chiefly the former. In the counties along the Lake Erie shores, the finer cabinet-woods abound. This district is also well adapted for vineyards and fruit-growing, which is extensively carried on.

Minerals and Oil.—Mining in Ontario is in its infancy. Petroleum-wells exist in the southwestern peninsula, in Campton county, at the foot of Lake Huron. There are salt-wells at Clinton, Seaforth, and Blyth, in Huron county,

near Lake Huron. Very profitable iron-mines are being worked all through the northern portion of the southern peninsula, in Victoria, Peterboro, Hastings, Frontenac, and Lanark counties. Copper and silver mines are in successful operation on the shores of Lakes Huron and Superior, and fine building and limestone quarries exist throughout the province.

Cities.—The following are the cities of Ontario, with their population in round numbers: Toronto (exclusive of Yorkville), 96,000; Hamilton, 36,000; Ottawa, 27,000; London, 20,000; Kingston, 15,000; Guelph, 10,000; St. Catharine's, 10,000; Brantford, 10,000; Belleville, 10,000; St. Thomas, 10,000.

Commerce.—The chief trade is with the United States. Large quantities of grain reach Collingwood, Midland, and Parry Sound, on Georgian Bay, from Chicago, Milwaukee, and other American ports, to be transported to the lumber-shanties, or to pass to Toronto, Port Hope, or Belleville by rail, and thence to Europe by Montreal and the river St. Lawrence.

Industries.—During the year ending June 30, 1882, the exports of agricultural products of Ontario were valued at $19,416,299. Of this amount all but $73,115 was the product of the province. Under the name "grazing," or "animals and their produce," the exports of the growth of Ontario were $7,506,888, of which $3,250,762 went to Great Britain, $4,214,329 to the United States, and the rest to Germany, the West Indies, etc. Of the agricultural products, $9,872,432 is barley, every bushel of which went to the United States; $2,320,198 is wheat; $1,519,748 is flour of wheat; $1,108,401 is malt, all to the United States; $862,296 is rye, of which $815,703 went to the United States; $724,753 is potatoes, all to the United States; $833,794 is peas, nearly all to the United States; seeds, $883,126; hay, $176,390; and beans, $158,798, were all shipped to the American market; oats, $221,924.

Lumbering, including timber in all forms, constitutes the second industry, both in respect to value of exports and also with regard to the number of persons employed. The exports are chiefly of pine. Under the heading "The Forest," the figures show an export of Ontario produce, amounting to $8,015,485, of which $8,009,934 went to the United States.

Manufacturing is in its infancy in Ontario, but the high protective tariff which came into operation in Canada in 1878–'79 has done much to turn the attention of capitalists to manufactures. The exports are small, but it must be considered that under a high protective tariff the home market is to a large extent controlled by the home manufacturer. For the year taken for illustration, the exports under this heading were $1,106,804 of actual Ontario manufacture. Of this, $238,775 were to Great Britain, and $715,051 to the United States.

Mining products were exported to the amount of $240,001—all to the United States. These exports were chiefly iron and silver ores, phosphates, and salt.

The export product of the Ontario fisheries was $158,706, of which $157,528 went to the American market.

The total value of the export trade of Ontario reaches $37,087,901. That there is a close union, commercially as well as socially, between this province and the States of the American Union along the lakes, is forcibly demonstrated by the fact that over $29,000,000 of this amount went to the United States.

Education.—The system of education in Ontario is very thorough, and its organization and administration are systematic and complete. The Education Department controls the public separate, and high schools of the province. The Education Department was presided over by a Chief Superintendent of Education until February, 1876, when a Minister of Education was appointed, who is a member of the Executive Council of the province, and is responsible to the Legislative Assembly. The several classes of schools form a complete series of progressive steps, from the primary school to the university, all under the control of the Government. The immediate management in school matters is vested in local boards.

The school funds are obtained from three sources: 1. An annual grant from the Government of $250,000. 2. County rates, $800,000. 3. Local rates and funds, about $2,500,000.

The school population (comprising only children between the ages of five and sixteen years) in 1880 was 494,424, and the school attendance in the same year was 487,012. There are in the province 5,195 public schools, in which 6,747 teachers are employed. The average salaries paid in 1880 to public-school teachers were:

	Counties.	Towns.	Cities.
Males	$382	$564	$743
Females	241	256	324

There are two normal schools in the province, conducted by the Education Department, one at Toronto and one at Ottawa.

There are one hundred and five high-schools in the province, and the annual expenditure in connection with them is about $425,000, of which sum the Government contributes by legislative grant about $85,000.

Where there are a sufficient number of Roman Catholics in a section or municipality to support a separate school, they are allowed to pay their local school rates for the support of such a school. There are over two hundred separate schools in Ontario.

The University of Toronto was established by royal charter in 1828, and endowed with a grant of public lands. The annual income from this endowment is nearly $60,000. The institution was inaugurated in 1843. The building is the finest single college-building in America.

Upper Canada College is in Toronto. It

was founded in 1828, on the model of the great public schools of England. It is controlled by a committee of the Senate of the University, in connection with the Education Department.

The School of Practical Science is devoted to the special study of the physical sciences and engineering. It may be regarded as a department of University College devoted to technical training. The School of Agriculture is at Guelph. The regular course extends over two years, and includes agriculture, horticulture, natural science, including chemistry, veterinary surgery, anatomy, and physiology. The farm in connection with the institution contains 550 acres.

The Institution for the Blind is in Brantford. It was founded in 1871, and is conducted chiefly at the expense of the country. There is an attendance of about 150. The Institution for the Deaf and Dumb is in Belleville. It was instituted in 1870. The general expenses are paid by the Government. The pupils, numbering over 200, are taught practical industries, as well as from text-books.

ORD, Edward Otho Cresap, an American general, born in Allegany co., Md., Oct. 19, 1818; died in Havana, July 22, 1883. His father was Lieut. James Ord, an officer in the War of 1812. Young Ord was graduated at West Point Academy in 1839. He entered the army as second lieutenant of artillery, and was assigned to the Third Regiment, which he joined in Florida. He served several years in that State, and was actively engaged in constant fights with the Seminoles. In 1846 he was sent to California, and during the Mexican War he was very efficient in preserving law and order on the Pacific coast. He was made captain in 1851, and was assigned to the Third Artillery. For several years he was occupied on the Atlantic coast, chiefly in garrison duty. He was then ordered again to California, where he found full scope for his energies in efforts to keep order among the wild Indian tribes in Washington Territory and Oregon, and to check their attacks and depredations. He met with unusual success, and the inhabitants of that section were loud in his praise.

On the outbreak of the civil war, Capt. Ord was raised to the rank of brigadier-general of volunteers, with his commission dating from September, 1861; and subsequently, when Congress rearranged the regular army, he was promoted to the rank of major of the Fourth Artillery, his commission dating from November, 1861. He was then assigned to the command of the Third Brigade of Pennsylvania reserves, under Gen. McCall, who had raised and organized fifteen regiments from that State. With his portion of the forces Gen. Ord, in December, 1861, crossed into Virginia from Tennallytown, and on the 20th of that month defeated the Confederates under Stuart, at Dranesville, near the Potomac. This action was not only highly creditable to the commander, but also did much toward restoring to the Army of the Potomac that *morale* which had been sadly injured by the conclusions to the battles of Bull Run and Ball's Bluff.

When the Army of the Potomac was preparing for a forward movement, Gen. Ord had charge of a brigade, but, having been made major-general of volunteers, he was withdrawn and assigned to a command under Gen. Halleck, with the army operating in the Department of the Mississippi. He commanded the wing of the army which advanced upon Iuka from the north, and, though he did not take a direct part in the battle, the commanding general in his dispatches spoke highly in his praise. In October, 1862, during the engagements before Corinth, Gen. Ord's position was at Bolivar. He pushed forward to the assistance of Corinth, and fell in with the enemy on the south side of the Hatchie. He drove them across the river, captured the heights, and took 200 prisoners and two batteries. He was wounded early in the battle, and carried off the field. His next active service was in 1863, when he succeeded Gen. McClernand in command of the Thirteenth Army Corps. He took part in the operations which ended in the surrender of Vicksburg, July 4, 1863. When a movement was made the same month upon Jackson, Miss., he commanded the right wing of Gen. Sherman's army, and thus assisted in clearing that part of the State of organized Confederate forces. He was ordered to New Orleans, but, in consequence of illness, was relieved, Oct. 28, 1863. He resumed his command, but his health proved too delicate for active service during the remainder of the year.

During Gen. Grant's movement from the Rappahannock to the James, a demonstration was made by way of the Shenandoah valley upon Washington, Maryland, and Pennsylvania. Gen. Ord was thereupon assigned, July 11, 1864, to the command of the Eighth Army Corps and the troops in the Middle Department, and at once set about reorganizing affairs in and around Baltimore. After quiet was restored he was assigned to the command of the Eighteenth Army Corps, then operating near Petersburg. He took part in the operations before that city, and, having crossed to the north side of the James, Sept. 29, 1864, he led the forces which carried the strong fortification and long line of intrenchments below Chapin's farm. He captured on this occasion fifteen pieces of artillery and nearly 800 prisoners; but, during the assault, he received a wound which temporarily disabled him. When the Tenth and Eighteenth Corps were consolidated Gen. Ord was placed in command, but, owing to ill-health, he was relieved for a time by Gen. Weitzel. After the return of the troops from Fort Fisher, he again resumed command of his corps; and, when Gen. Butler was removed, early in January, 1865, he was appointed successor in command of the Department of Virginia and the Army of the

James. He also participated in the operations which resulted in the evacuation of Richmond.

After the return of peace he commanded the Departments of California, the Platte, and Texas. In January, 1881, he was placed on the retired list according to his brevet rank. Gen. Ord, on leaving the service, accepted an appointment as engineer in the construction of a Mexican railroad. His health suffered from this severe labor, and he was on his way North, in a steamer from Vera Cruz to New York, when he was seized with yellow fever. He was taken on shore at Havana, and died suddenly. In personal character, as well as in soldierly skill, Gen. Ord ranked high, and he was always careful for the comfort of the men under his command, especially of the sick and wounded.

OREGON. State Government.—The following were the State officers during the year: Governor, Zenas F. Moody, Republican; Secretary of State, R. P. Earhart; Treasurer, Edward Hirsch; Superintendent of Public Instruction, E. B. McElroy. Judiciary, Supreme Court: Justices, Edward B. Watson, William P. Lord, and John B. Waldo.

State Institutions.—The number of convicts in the Penitentiary on December 31st was 237. The new Insane Asylum at Salem was completed during the autumn of this year. Work was begun on the foundation in May, 1881. The building is on the summit of a knoll. The grounds are at a convenient distance from the business part of the city, being about half a mile north of the Penitentiary, and directly opposite the Orphans' Home. There are about 107 acres that properly belong to the asylum. The building stands, completed, at an expense to the State of less than $144,000.

The number of children of school age in the State is 69,076. The State University received during the year from Henry Villard the gift of $50,000 of the first general mortgage bonds of the Northern Pacific Railway Company, bearing 6 per cent. interest.

The university fund, if it were all kept at interest at 8 per cent., would yield $5,648.86, but that is not probable. There is probably $20,000 of the land grant yet unsold, and as this is disposed of the fund will be increased accordingly. But it is not likely that from this source it will ever reach more than $90,000.

The attendance in the collegiate department during the year 1882–'83 was as follows: Whole number enrolled, 154—first term, 145; second term, 128; third term, 94: average of the terms, 121. Of these, 83 were free and 71 pay students—57 of the former being men and 27 of the latter women.

The number of students enrolled in the preparatory department for the year was 63—the first term, 47; second term, 53; and third term, 34: average, 44. Of these, 38 were girls and 25 boys—19 of whom passed their examination and entered the collegiate department.

Indian School.—The school for the education and industrial training of Indian children has been in operation at Forest Grove for three years. It has an attendance of 150 pupils. It was at first difficult to get the pupils to come to the school, but now many more wish to come than can be accommodated. All the clothing worn in the school, including boots and shoes, is made by the pupils.

Salmon-Fisheries.—There were packed on the Columbia river during the year, 629,438 cases of salmon. Placing the product for 1883 at 630,000 cases, the value of the pack foots up $3,024,000. This is at a valuation of $4.80 per case. The following table exhibits the growth of the industry:

YEAR.	Pack.	Number of boats.	Market price.	Cost of fish.
	Cases.		Cases.	Cents.
1866	4,000	2	$16 00	15
1867	18,000	15	13 00	15
1868	28,000	25	12 00	20
1869	100,000	35	10 00	20
1870	150,000	50	9 00	20
1871	200,000	75	9 50	20
1872	250,000	100	8 00	22½
1873	250,000	125	7 00	25
1874	350,000	250	6 50	25
1875	375,000	300	5 60	25
1876	450,000	400	4 50	25
1877	460,000	450	5 20	25
1878	460,000	550	5 00	25
1879	480,000	750	4 60	50
1880	580,000	900	4 80	50
1881	550,000	1,200	5 00	60
1882	550,000	1,500	5 00	75
1883	629,000	1,700	4 80	90

The shipments for the year were:

	Cases.
To San Francisco	270,174
To England	288,630
To New York by sea	54,970
Eastward by rail	25,563
Total	641,337

Commerce.—The total value of Columbia river exports for 1883 was as follows:

ARTICLE.	Domestic.	Foreign.	Total.
Wheat	$253,150	$3,426,741	$3,684,891
Flour	705,628	1,345,800	2,051,428
Salmon	1,729,103	1,386,055	3,115,158
Wool	1,585,745	.....	1,585,745
Oats	18,168	.....	18,168
Barley	1,256	.....	1,256
Potatoes	21,205	.....	21,205
Bran	4,241	230	4,471
Mill-stuff	5,688	.....	5,688
Onions	2,465	.....	2,465
Apples	4,277	.....	4,277
Other fruit	2,082	.....	2,082
Dried apples	26,775	.....	26,775
Dried fruit	12,399	.....	12,399
Flaxseed	36,905	.....	36,905
Hides	201,455	.....	201,455
Pelts and skins	41,710	.....	41,710
Woolens	355,000	.....	355,000
Barrel stock	19,211	.....	19,211
Leather	38,051	.....	38,051
Tallow	5,361	.....	5,361
Butter	15,556	.....	15,556
Eggs	27,298	.....	27,298
Hops	36,218	.....	36,218
Lumber	262,433	14,391	276,824
Spars	.....	650	650
Other articles	796,137	5,000	801,137
Total	$6,212,512	$6,178,867	$12,891,379

The imports, domestic and foreign, amounted to $28,078,594. These figures are not in all respects complete, but they are as nearly so as it was possible to make them. The product of the mines of eastern and southern Oregon is at least $1,000,000.

Railroads.—The most important incident of the year was the completion of the Northern Pacific Railroad. Although but four months had passed at the close of the year since the last rail was laid, the advantages of direct connection with the Eastern States were already felt in every part of Oregon and Washington. The new line is rapidly working a revolution in the business of the country. Relations long existing with San Francisco still retain a hold, but their grasp is gradually loosening, and the time is not far away when the people will only buy in California things which are produced there. The trade of the Northwest is turning eastward, where buyers have equal opportunities with the San Francisco houses which have heretofore supplied them.

The most conspicuous effect of the new direct connection is the presence of hundreds and thousands of new people. Immigrants were arriving at the close of 1883 at a rate which would add 40,000 to the population in a year. Most of the new-comers are farmers, and nearly all have a little capital.

The Northern Pacific, on the 1st of January, had the following completed mileage in the Northwest:

	Miles.
From Wallula northeast to Montana	350
From Kalama, on the Columbia river, to Tacoma, on Puget Sound	105
From Tacoma southeast to Wilkson (about)	32
Total	487

Added during the year:

	Miles.
From Portland to a point opposite Kalama	42
From point opposite Ainsworth up to Yakima river	25
Present total mileage	554

The Yakima branch will be extended twenty-five miles immediately.

At the beginning of the year the Oregon and Transcontinental Company had not a mile of road in the Northwest, but since that time it has completed two lines connecting with the Northern Pacific, as follows:

	Miles.
From Stuck River Junction to Black River Junction (the link connecting Seattle and Tacoma)	20
From Palouse Junction to "front," eight miles east of Colfax	101
Total	121

The latter road is being rapidly extended, and will terminate at Moscow, I. T., reaching that point early in 1884.

At the beginning of the year the Oregon Railway and Navigation Company had the following mileage:

	Miles.
From Portland to Bolles Junction, W. T.	270
From Bolles Junction to Dayton, W. T.	13
From Bolles Junction to Riparia, W. T.	31
From Umatilla to Pendleton	43
Total	357

Added during the year:

From Pendleton to four miles east of the summit of the Blue mountains	60
From Walla Walla to Blue Mountain station	20
From Pendleton toward Blue Mountain station	7
Total for the year	87
Present total mileage	444

The Baker City branch is being pushed with vigor, and it is proposed to extend it to a junction with the Oregon Short Line at Huntington, 117 miles east of its present front, during the coming year. The Pendleton and Walla Walla link was to be completed early in 1884.

At the beginning of the year the Oregon and California Company had the following completed mileage:

	Miles.
From Portland south to the "front," 54 miles south of Roseburg	252
From Portland to Corvallis	97
Total	349

Added during the year:

Extension south of Roseburg	70
Total present mileage	419

During the coming year this line will be extended to a junction with the California section of the road, south of the State line.

The Oregon Improvement Company is building a line twenty-five miles or longer east from Seattle to the coal-fields of Green river. It will be completed early in 1884.

The Oregon Short Line is coming rapidly westward, and will meet the Oregon Railway and Navigation road at Huntington, Idaho, in the autumn of 1884.

Temperance and Female Suffrage.—The annual meeting of the State Temperance Alliance was held at Albany on February 21st. There were present 287 delegates, representing 85 organizations, as follows: Lodges, 29; churches, 20; Sunday-schools, 18; alliances, etc., 7; Blue-Ribbon Clubs, 4; W. C. T. U., 8; Band of Hope, 2; United Order of Ancient Templars, 2.

The Woman's Christian Temperance Association of Oregon held its annual meeting in Portland, on June 15th. No action of special importance was taken by either body. The Oregon State Woman Suffrage Association held its eleventh annual convention in Portland on the 13th of February. Measures were taken toward a vigorous campaign in behalf of the constitutional amendment which is to be submitted to the people in June, 1884.

P

PALESTINE, GERMAN COLONIES IN. The first German colony in Palestine was founded in 1872, when several families from Würtemberg formed a settlement near Jaffa. They were industrious and hardy, and showed themselves well fitted to cope with the numerous difficulties that beset them from the beginning. They established, close by the city, model farms and households, manufactories for agricultural implements, and shops which turned out excellent wagons. Continued success attracted new settlers, and the colony has grown steadily and would enjoy the promise of a still more rapid increase if it could obtain new grants of land.

At about the same time this colony was founded, another company of Germans obtained a grant of a considerable tract of land at Caïpha, at the foot of Mount Carmel, between Cape Carmel and the ruins of Cæsarea. This colony, which is much more important than that of Jaffa, has had a very prosperous career. Its forty modest, whitewashed houses present an appearance of order and neatness in marked contrast with the squalid huts of Caïpha. The colony, numbering about four hundred souls, has its own administration, in a kind of city council, over which the resident consul has supervision. It presents the model of a German city to the Asiatic population, and an example of quiet and moral behavior. The people are moderate Protestants, and free from sectarian strife. Their farms are well appointed, and yield four or five times as much as similar lands in the hands of the native population. The soil is very productive under any kind of cultivation, and makes extraordinary returns under the care of a good farmer. A third colony has been established in the vicinity of Jerusalem, near the Russian hospital. It was founded mainly for purposes of trade, and has prospered. Through the agency of these settlements, German influence has already become considerable in Palestine, and bids fair to be an important factor when the Syrian question again comes up. The Arabs and Turks, who are most strongly impressed by military success, have held the Germans in great respect since they defeated the French in 1871; while the German colonies, under the care of Prince Bismarck, have enjoyed a steady growth since 1872. Prussia has obtained the convent of the Knights Templars as a present from the Sultan, and on the 7th of April, Prince Frederick Charles took formal possession of the ruins of Cæsarea, an ancient seaport halfway between the German settlements at Jaffa and Caïpha, which the Sultan had conveyed, with the neighboring lands, to the German Emperor. The growth of these two colonies toward each other, if it continues, will bring the whole Syrian coast, from Cape Carmel to Jaffa, under German predominance.

PALMER, Edward Henry, an English Oriental scholar, born in Cambridge, England, Aug. 7, 1840; murdered by Bedouin Arabs of the Desert about the middle of August, 1882. Both his father and his mother having died while he was a little child, he was educated and cared for by his aunt with the tenderness of a mother. He early evinced a fondness for languages, and actually mastered the Romany dialect, through the aid of gypsies whom he met and induced to talk with him in their peculiar tongue. For some three years he served as a junior clerk in a London house, during which time he acquired French and Italian, so as to speak them with the accuracy of a native. His conviction was, that any intelligent person can learn, by the natural method, as he called it, which children pursue, any language whatever, so as to read it in a few weeks, and speak it in a few months. This method he followed, viz., hearing and speaking different languages; he eschewed grammars, after the Greek and Latin manner; and his success was marvelous in the extreme.

Mr. Palmer entered St. John's College, Cambridge, and was graduated in 1867. Though not distinguished in other respects, while an undergraduate, he was nevertheless elected to a fellowship in his college, soon after graduation, on the score of his already remarkable attainments in Arabic, Persian, and Hindustani. These he had made through the help of two or three Orientals living at the time in Cambridge. When the Sinai Survey Expedition was sent out in 1868–'69 Mr. Palmer accompanied it, having in view the investigation of the nomenclature, traditions, and antiquities of Arabia Petræa. One of the results of this expedition was the discovery of the route taken by the escaped children of Israel in their journey from the Red Sea, and it was shown that this route led to a mountain in all respects answering to the mountain in which the law was given. Mr. Palmer also collected the curious Arabic and Mohammedan legends and traditions on the subject. The next year, 1869–'70, in company with Mr. C. F. Drake, he explored the Desert of the Wanderings (El Teh), and succeeded in fixing many of the localities where the Israelites rested, such as Kibroth-Hattaavah, besides making other valuable discoveries. He also made some stay in Jerusalem, and looked into the interesting question to all pilgrims as to the true site of the Holy Sepulchre. He gave his decision against the traditionary site. On his return home he published "The Desert of the Exodus: Journeys on Foot in the Wilderness of the Forty Years' Wanderings" (1871).

In November, 1871, Mr. Palmer was appointed the lord almoner's Professor of Arabic in the University of Cambridge, which place

he held for ten years. Finding his work there not altogether congenial, and his income only moderate, Prof. Palmer, in 1881, transferred his residence to London. He entered largely into journalistic and literary pursuits, at the same time carrying forward his Oriental studies with unremitting assiduity. He was widely consulted on questions that related to the East, and his vast learning, for a man of his years, was made to subserve the interests of justice and truth. His publications, beginning, in 1865, with a translation into Arabic verse of Moore's "Paradise and the Peri," extended on from year to year to the close of his life. He produced an Arabic grammar, a Persian dictionary, the "Life of the Caliph Haroun al-Raschid," and edited and revised Henry Martyn's Persian translation of the New Testament. He furnished a report on the "Nomenclature of Sinai"; a report on the "Bedouins of Sinai and their Traditions"; and an account of the "Negeb, or South Country of Holy Scripture." He translated "The Song of the Reed," mainly from the Persian and Arabic, and brought out an edition and translation into English verse of the Arabic lyric poet, Beha Ed-din Zohair. He also published a volume of Gypsy-English poems, in conjunction with Charles Godfrey Leland; and translated into English verse, with the collaboration of Magnusson, the lyrical poems of Runeberg, the great Swedish poet. Besides all these, he produced various essays, poems, and letters in Urdu and Persian, which appeared in the native papers in India.

In the summer of 1882 Prof. Palmer acceded to the request of the Government, and set out on a mission which ended so disastrously to himself. He was commissioned to visit the Arab sheiks of the Sinai Desert; to expend, if needful, £20,000, in order to secure their neutrality along the line of the Suez Canal; and to win them, if possible, from joining Arabi Bey in a fanatical and so-called holy war against the English. He entered upon his mission with entire courage and confidence. He penetrated the wilderness, accompanied by only two attendants, and trusted for safety to his former friendly relations with the Bedouin tribes, and his intimate knowledge of their language and peculiarities. After some weeks spent in negotiation, he gained success in the work he had undertaken; but as he was returning to Suez to redeem the promises made to the chiefs of pecuniary aid, he was treacherously betrayed into the hands of a party of Bedouin robbers; he and his two companions were taken prisoners, and after a few days' captivity the three were murdered.

In view of the services which he might yet have rendered to Oriental literature, it was a great and grievous loss. He was in the very prime of life, with a brilliant future before him; a man of varied and marvelous gifts, and one who secured the esteem and affection of all who knew him. The life of the "Sheik Abdullah" (as was his Oriental title) was written by his friend and to some extent fellow-worker, Walter Besant, M. A. It is an interesting volume (published early in 1883), and gives not only the story of his life, but also copious extracts from his publications in Arabic and Persian. It has also a portrait of the professor, in Oriental costume.

PAPER-HANGINGS AND WALL-PAPER. This industry has made greater advances within the past ten years than almost any other of our older manufactures. Thirty to fifty years ago the only wall-papers made in this country were of the cheapest and poorest quality. Printed on an unsized brown paper, from wooden blocks which did not match well, with stiff and ungainly designs, in not more than three or four colors, and with combinations as absurd and impossible as could be conceived, they were only tolerated by the poor as a substitute for whitewash. All the better class of wall-papers were imported, and these, though greatly superior to the domestic papers, were then mostly of patterns which would not now be considered desirable. There was some progress as the tastes of the population improved, and better stock and somewhat better designs were introduced; but though the register was better, the old hand-printing with blocks was still practiced, and even the best patterns had a stiff, unnatural, wooden appearance. A few of our manufacturers were beginning to desire something better, and this led to many experiments; but most of these were mere gropings in the dark, without any clear comprehension of what was actually wanted. Gilding had been introduced, though it was not skillfully applied; and, with that perversity which possesses some manufacturers, no sooner was it found that there was a demand for gilt papers, than some of the makers began to use the Dutch gilding in place of gold-leaf, and the tarnished figures soon disgusted purchasers. Even in 1860 the wall-paper industry did not flourish. There were, according to the census of that year, 26 establishments making wall-papers in the entire country; they employed 1,294 hands (the printing was generally done by hand); there was invested in the business, $1,037,600 of capital (about $40,000 to each factory); and they produced goods valued at $2,148,800, about an average of $80,000 to each establishment. There were more of the higher priced papers made than ten years before, but the cheap and ugly patterns were still in the ascendant. At that time we were importing nearly $2,000,000 worth of paper-hangings. The war brought with it some changes in this as in many other things. Foreign goods were not so readily obtained, and our manufacturers had awakened to the necessity of making better and more tasteful goods if they would gain and hold the market. Machine-printing was introduced, and better designs furnished, though as yet the foreign patterns were slavishly copied. The cen-

sus of 1870, perhaps to a greater degree than its predecessors, was defective and almost worthless in its manufacturing statistics. It represented the number of establishments in the whole country as but 19, employing only 869 hands, using $1,415,500 capital, and producing goods of the value of $2,165,510. This was not in any material respect an advance on the report of 1860; but the importation of paper-hangings had fallen off to a specie value of about $600,000, equivalent to a currency value of at least $1,000,000. Here was a gain, for there could be no doubt that our manufactures of wall-paper reached $2,500,000, or two and a half times the value of the import.

About this time there was a sudden and remarkable improvement in the English wall-papers, which was initiated by William Morris and his friend W. M. Rossetti, both poets and artists. The designs of Morris were at first (in 1863) confined to furniture and decorations of dwellings, in which he manifested great artistic ability and originality. He soon proceeded from this to designs for wall-papers, which, though they at first excited much opposition from their startling character, soon became popular, and after a time the English manufacturers surpassed the French in the beauty of their designs. These goods, a little later, were imported here in very considerable quantities; and in 1873 or 1874 leading manufacturers began to compete with them. In the Centennial Exposition, the display of both English and French paper-hangings was of very great beauty, but one or two of our American manufacturers ventured to compete with them, and acquitted themselves creditably.

From that time the progress of the American wall-paper manufacture has been exceedingly rapid. Processes of cylinder-printing have been invented and improved, by which it is possible to print papers in a greater variety of colors, and with greater accuracy and perfection, than is done by any of the European manufacturers. At first, our manufacturers copied, with some changes, the European designs, but now the largest have encouraged native talent, and find that the designs received from our own artists, many of them trained solely in American art-schools, are more tasteful and elegant than the best of the foreign designs.

The result of these improvements, which raised the production of decorative wall-papers to a high rank among the fine arts, has been such an increase of production as has hardly been witnessed in any other industry in the same period. The census statistics of 1880 were remarkably accurate for that time, as the number of manufacturers was not large, and they were associated and made their quarterly reports. They were as follow: Number of establishments, 25; capital, $3,560,500; number of hands, 2,487; wages paid, $874,921; material used, $3,629,222; amount of annual product, $6,267,303, or double the whole production and importation of 1870. Meanwhile the importation had fallen off to $100,134 in 1877, and $130,948 in 1880. Five sixths in value of these manufactured goods were made in the State of New York.

But, rapid as was the growth of this industry between 1870 and 1880, it has been greatly accelerated since 1880. The whole number of establishments is now 27—one having been added in Brooklyn, one in Elizabeth, and one in Buffalo; but one has failed. The cities of Brooklyn and New York produce five sixths in value, and more than four fifths in quantity, of the total production of the United States. The entire production in the United States is very nearly of the value of $12,000,000, although prices have been materially reduced. Of this amount a little more than $6,000,000 are produced in New York city, an increase of more than $2,500,000 since 1880; and $3,995,000 in Brooklyn, about three times the amount reported in the census of 1880. The import is still insignificant—only about $150,000 in 1883, and this including glazed and fancy papers—while our manufacturers are exporting their papers to Canada and Australia.

Under the general title of paper-hangings are included four distinct classes of goods, viz.: 1. Wall-papers proper, which are put up in pieces or rolls of eight yards each, and with which are also reckoned borders of various widths, also in pieces of eight yards. 2. Dadoes and hall fresco-papers, of varying widths and lengths. 3. Ceiling-papers, also of various sizes, and usually with borders; these are of elaborate designs, and represent with great fidelity the finest fresco-paintings. 4. Window-curtains, of various widths, and either plain or bordered. These four classes of goods are not all manufactured by any one house, but the largest make two or three of them. The largest of the Brooklyn houses manufactures wall-papers and borders, and curtains; the largest New York house, and one of the great Brooklyn houses, make wall-papers and borders, dadoes, hall-frescoes, and ceiling-papers.

The paper used is not, so far as we can learn, manufactured by the paper-hanging houses themselves. The greater part of it comes from Massachusetts and Connecticut, and Washington, Essex, and Rensselaer counties of New York. There is one paper-mill for these papers in Kings county, producing about four tons a day, which is but a small portion of the amount used in that county. The paper is made mostly from old newspaper stock, though the fresco and ceiling papers are usually of better and heavier materials. For wall-papers, they are generally furnished in rolls of about 100 pounds, the width of the paper being about twenty inches; for fresco and ceiling papers the sizes vary. The curtain-paper is from five to eight feet in width, and of heavy stock.

Most of the better class of papers are now satined, i. e., coated with a surface of very fine clay, tinted of any color required, and applied by passing the paper between rollers and pol-

ishing it by means of a swiftly-revolving brush, which gives it the satin finish desired. When thoroughly dried and hardened, it is reeled up and is ready for the printing. This is effected by a process somewhat similar to that now employed in calico-printing, except that the colors are oil-colors, and there are as many cylinders as there are colors to be used, and each cylinder has its reservoir of its own color, and its rollers for distributing the color evenly over its printing surface. If there is to be gilding, one cylinder is charged with size, and the gold-leaf is applied subsequently. As the newly-printed wall-paper passes off from the printing-machine in continuous lengths of 800 to 1,000 feet, it is, by an ingenious contrivance, made to pass over laths or wands, which it carries forward up an inclined plane till they fall into a slot at the top of a frame, and the paper is hung in folds or loops of sixteen or eighteen feet in length, and is thus thoroughly dried. These frames close up on each other with a space of perhaps four inches between them. When the paper is dried, it is passed along an inclined plane automatically, carefully inspected, and at the lower end of the inclined plane rolled up and cut off, by a guillotine-knife, in lengths of eight yards, the regulation length of a roll, and is ready to be packed for market, or sorted, each pattern by itself, for the storehouses. One manufacturer in Brooklyn, whose establishment is said to be the largest in the United States, and perhaps in the world, turns out 9,000,000 of these rolls annually. The fresco and ceiling papers are printed by a different process, somewhat analogous to the best color-printing from types and electrotypes. The designs are engraved on blocks and electrotyped, and there are as many printings as there are colors, the machinery being so constructed as to produce the most perfect register.

The design or pattern is first carefully drawn and colored by the artist, as it is to appear on the paper. The artist then makes as many copies of the drawing as there are to be colors on tracing-cloth, and by colored chalks traces that part of the pattern which is to be of a particular color upon each sheet. Cylinders of apple-wood, beech, or cherry are now provided, each of exactly the same size, and turned smooth in a lathe. The sheets of tracing-cloth, all of precisely the same size and covering the cylinder exactly, are then put on the cylinders with a peculiar cement, and are handed over to the men who are to put in the figures or designs of each color. Every man has his own color, and never takes any other. The figures of the design are now worked out by inserting in the colored lines slips of hardened brass rule, which by bending and filing are brought to the shape of the figure, and, a slight incision being made in the cylinder, they are driven in by a single tap of a light hammer. The figure must be copied with the most absolute exactness; a variation of a hair's-breadth might spoil the pattern. When it is completed, the insterstices of the figure are filled in with a dense and firm felt nearly to the surface. The rolls are next to be tested; a lathe is fitted up with a gauge, carefully adjusted, and the slightest inequality is carefully turned off. They are next interlocked to make sure of a perfect register. The colors are all mixed in the factory, and for the finer qualities aniline colors are largely used.

The window-curtains are usually of one or two colors. They are printed on an immense cylinder wheel, whose diameter is 11 or 12 feet.

The patterns of one year are not, except in very rare instances, repeated the following year, but an entirely new set is designed for each year's sales. For each year a number of rolls, slightly in excess of the supposed demand, are printed, and where there are remainders they are worked off the following year; but the manufacturers will not pledge themselves to supply a pattern more than two years old, and very often they can not furnish one which was made the year before. This industry affords employment, at good wages, to a large number of young artists and designers, and is doing as much as any industry, except perhaps calico-printing and book-engraving, to promote the more intimate connection between the fine and the useful arts.

Within the past year there has been put upon the market a new decorative material of great promise, to which the name of "Lincrusta-Walton" has been given. Its composition is secret, but it is known that solidified oil enters largely into it. The material is said to be soft at first, and to allow the imitations of the most delicate outlines, and the raising of the ornamentation considerably above the groundwork; but it soon hardens without becoming brittle, and is not affected by either water or temperature. Panels representing statues in bronze are made from it, and the fine wood-carvings of the old cathedrals are imitated to perfection. This new invention has been introduced simultaneously into France, England, and America.

PARAGUAY, a republic of South America. To the general statements of area and territorial divisions, given in former volumes, and of population given in Volume VII, it may be here added that the principal cities are Asuncion, the capital, with a population of 16,000; Villa Rica, with 12,570; Villa Concepcion, 10,697; Villa San Pedro, 9,706; Luque, 8,878; San Estanislao, 7,453; Itangua, 6,948; Ita, 6,332; Paraguari, 5,315; Villa Humaitá, 3,868; Villa Pilar, 3,722; and Jaguaron, 3,418.

Government.—The President is Gen. B. Caballero (since Nov. 25, 1882). The Cabinet is composed of the following ministers: Secretary of the Interior, Col. Mesa; Foreign Affairs, J. S. Decond; Finance, J. C. Jimenez; Justice and Public Worship, Señor Gonzalez; War, Col. Duarte.

Army and Navy.—No citizen of Paraguay is exempt from military service; but the standing army has been reduced to 500 men (350 foot and 150 horse), a portion thereof keeping gar-

rison at Asuncion, and the rest doing frontier service. In case of war, the National Guard is enrolled. The country has a chief of police in each of the seventy departments. The navy consists of a screw steam man-of-war of 440 tons, mounting 4 guns, and having a crew of 36 sailors, commanded by 4 officers, besides 3 small steamers doing service in the ports.

Finance.—The chief source of revenue is the customs, which in 1881 produced $426,940, and adding thereto other items of income the total amount collected was set at $542,000. For the year 1883 the budget estimated the aggregate outlay at $352,963.

Public Indebtedness.—By virtue of the treaties of peace which terminated the war, and finally the still pending differences between Paraguay and the individual belligerents that had formed the alliance against her, she obliged herself to refund the cost of the war, and indemnify those who suffered by the Lopez invasion of Brazilian, Argentine, and Uruguayan territory. By a separate treaty one of the parties to the former alliance, Uruguay, waived these latter claims of indemnity on April 20, 1883. The precise cost of the war has never been estimated, but those who suffered from the invasion have formulated their claims, and Paraguay has recognized their validity, constituting Brazilian and Argentine claims to the amount of several million dollars still pending.

The internal debt, by the sale of national property, that of the railroad, and through the operations of a sinking fund created by an extra duty of 10 per cent., has been reduced to $642,667. The foreign debt amounted, on Jan. 1, 1882, to $16,818,412.

General Condition of the Country.—Congress reopened its sessions April 1, 1883, on which occasion the President in his message alluded to the improved state of affairs, the cessation of the financial crisis, the progress made by public instruction, the rapid increase of flocks of sheep, and the remarkable headway which agriculture had made. Advices dated in December, 1883, show that the year had been generally prosperous; but a country the bulk of whose male population perished during the gigantic and prolonged struggle against a powerful alliance of neighbors requires time to replace itself on a flourishing moral and material basis, and a large immigration of agriculturists to fill up the gap left by the war.

The practical and liberal measures of the present administration have already done much toward obliterating the evil results of the government with which the country was afflicted during the successive sway of a Francia, Rosas, and Lopez. The financial difficulties hampering it in this endeavor are great, and foreign capital is slow in coming thither. Fortunately, the Government is the chief owner of the arable land in the republic, and has therefore the means of holding out inducements to agriculturists from abroad. Strenuous efforts have, therefore, been made to foster immigration, especially from Germany, and not without success. A dispatch from London, Jan. 11, 1884, said: "The movement in Germany for the establishment of working-men's colonies is making rapid headway. Committees of emigration from different parts of the country recently came together at Frankfort, and resolved to push the matter of sending more German workmen to Paraguay, where a colony had already been established." For several years past the Geographical Society of Leipsic has labored in the same direction, and forwarded colonists to Paraguay. Since, in 1882, some Germans and Englishmen became purchasers of tracts of arable lands in Paraguay, similar property has risen 50 per cent. in 1883. But even at this advance, *estancias*, well watered, wooded, and provided with fine pasturages, could still be bought in 1883 for $800 to $1,000 the square league. There are probably few countries possessing the resources and climate of Paraguay, of easy access to immigration, where, with such a moderate outlay, similar tracts of land can be acquired by the *bona fide* settler.

Communications.—The only railway in operation is the one from Asuncion to Paraguari, forty-five miles, which in 1881 forwarded 81,807 passengers. In the same year its gross earnings were $61,207. There is but one telegraph line in operation, running parallel with the railway aforenamed. The items of mail matter forwarded were as follow:

	1880.	1881.
Inland	20,796	34,117
Received from abroad	30,660	47,134
Sent abroad	15,679	48,862
Total	67,335	130,113

Amount of postage collected in 1881, $2,227.

Commerce.—The commercial movements in two years were as follow:

	Import.	Export.	Amount of duty collected.
1880	$1,030,000	$1,163,000	$320,000
1881	1,290,000	1,929,000	427,000

The chief articles of import in 1881 were: cotton goods, $269,264 worth; beverages, $167,114; hardware, $119,484; woolens, $77,351; and the remainder was made up of flour, boots and shoes, sugar, rice, coal, petroleum, bagging, etc. The exports consisted of *yerba maté*, or Paraguay tea, $910,126; leaf-tobacco and cigars, $682,666; hides and skins, $116,782; oranges, $47,948; the rest being cabinet and dye woods, essence of orange-blossoms, tanning-bark, Indian corn, leather, etc.

PATENTS. A United States patent for an invention is a grant, given by the Government, of the exclusive right to use, make, or sell any subject of invention that has been first invented by the applicant himself, not abandoned, nor in public use. It is granted for a period of seventeen years, and can not be extended. The word "patent" means open. A patent struct-

ure is one whose construction and uses are disclosed to the public. This contradicts to a certain extent the popular idea, which fails to realize that the subject of a patent is the property of the public, withheld from it by special grant for the period of the patent. When a person has invented a machine or other thing, he has two ways of securing to himself its exclusive use. One is to keep it a secret, the other is to patent it, which implies to publish it. To secure patent rights in it, an accurate description, accompanied, it may be, with drawings and model, has to be filed in the Patent-Office at Washington. As soon as the patent is granted, this description is patent or open to public inspection. The text and drawing, if any, are reproduced in printing and lithography, and kept on sale to all applicants.

An unpatented invention can be used by any one who finds out its secret. The law recognizes no right of property in an invention until it is patented. The material development of the country is consulted when it is enacted that all inventions shall be the property of the public, sooner or later, if divulged by patenting or otherwise. As a basis of right to any property, the thing must be defined by registry or otherwise. Finally, the law recognizes no intrinsic right of property in the intangible effort of the brain, which it holds to constitute the germ of invention. It refuses to recognize any right of property in invention as such, and holds that the inventor, when others have used his idea, is no poorer, and hence has not been robbed. Hence a special grant is necessary to protect him. A reciprocal rewarding and encouragement of inventors is presented in the consideration awarded for the disclosure of inventions. This consideration is the monopoly of his invention for a period of seventeen years. The nominal fees charged in this country for patents are only designed to cover the expenses of the Patent-Office.

Soliciting.—Patent soliciting should be performed by one familiar with the practice of the Patent-Office, an intimate acquaintance with which can only be obtained by experience. To this should be joined a knowledge of the views taken by the courts in these "metaphysics of the law," as Judge Story designated patent law. A patent may be drawn up so as to be accepted by the Patent-Office, and be utterly valueless in litigation. This court interpretation of patents is of greater extent and runs into more refinement than does the Patent-Office practice. A strong feeling now prevails that the law should exercise some choice or licensing of patent solicitors. Just as the practice of law in the courts is restricted to lawyers, approved members of the bar, so, it is argued, should the soliciting of patents, as far as attorneys are concerned, be confined to those recognized as capable after due examination by some designated examiners.

In the early days of the office but few patents were taken out. The practices of the department were simpler and more elastic than at present. After a few years the causes began to come into court, and then the judges had to settle the legal status of the different cases. During the past ten years the Circuit Courts and the Supreme Court of the United States have had to decide in a vast number of patent suits. The statute has been read and re-read, and its provisions have been interpreted with the greatest refinement. The courts are the final and supreme arbiters of patents, and on the decisions of judges rest their value. Hence, to know what the power of a patent really is, the records of the courts must be consulted. The patent practice of to-day is far different from that of a few years ago. The new decisions of the courts alluded to above are not all that have modified it. The practice of the Patent-Office has become stricter, and the conditions of acceptability are more rigorous.

Patentability.—When an inventor has invented or discovered something, the last question that will probably occur to him is, Is it patentable? He is inclined to take this for granted; yet in all patent law no question is more intricate. The words "invented or discovered" occur in the statute, and the two words are held to be synonymous. "Any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement thereof, not known or used by others in this country," is the definition of patentable things.

Human Contrivance.—The first element which will be seen to run through the four patentable things is the element of human contrivance or devising. The law only grants patents to the products of the human brain. It does not patent natural forces. Newton is spoken of as the discoverer of gravitation. If on investigation he were found to be such, the law would be morally as well as physically incapable of granting him a patent for his discovery. Volta and Galvani were the discoverers of dynamic electricity. To-day we all see the *rôle* played by this force in human affairs. Had they lived to-day and made the discovery, they could not have patented it. For, though they discovered it, they did not do so in the sense of the word as used in the statute—they did not *invent* it. The force itself was no product of their brain; it existed from the beginning of time, and all they did was to discover means of localizing, developing, and identifying it. The patentable discovery would be limited to some form of galvanic or voltaic battery. The patentability of such a thing depends on whether it is a work of man or of Nature. In the latter case, it is the property of humanity at large, and can not be secured. Morse tried to patent the use of electricity for marking or printing at a distance. This amounted to claiming a monopoly of one of the laws of Nature. He had harnessed the lightning, and made it his messenger; but he tried to patent the messenger instead of the harness. His particular machine could have been secured as the work of man.

His case came into court, and was lost on the ground of too great extent of claim. This patent had gone safely through the office, to be declared invalid by the higher powers.

Originality.—Referred to the person applying for a patent, the thing must be his invention. The inventor must have invented it personally, and must make an oath to that effect. It often happens that the inventor has been preceded by another, and that he is a second or third inventor only. The Patent-Office is obliged, if the other conditions be fulfilled, to grant the patent to the first inventor. If it by accident grants the patent to the second inventor, the first has his remedy in interference proceedings.

Novelty.—The originality of the invention being settled, it has next to be considered, unless it is totally original, whether there is a sufficient change from existing structures or processes. The majority of inventions at this time consist in such changes. The question to be determined is whether these changes were obvious, or whether they required invention for their development. When nothing more than the ordinary knowledge or skill of one conversant with the art was required, there is no invention. Some of these changes are so ingenious and beneficial in their results as to be true inventions, however clearly changes. The best authority is good common sense applied by a qualified and disinterested person. The inventor is almost certain to take too favorable a view of the change he has effected.

Double Use.—Double use of an existing structure or other invention, if accompanied by ever so slight a change, may be patentable. The office will be found rather strict in dealing with this class of subjects. The general rule in the case of a machine is that it, with all its possible functions, is the property of the inventor. A grindstone invented for the purpose of grinding needles, would be protected for grinding pins. But where the use contemplated in the original patent was widely different from the use discovered by a new inventor, but little will be required to constitute an invention.

As an illustration of Patent-Office practice, some of its decisions may be quoted. It has declared unpatentable the following devices: Applying to a paddle-wheel vessel a device borrowed from a land-vehicle; doing the same with reference to a wind-mill and paddle-wheel; preserving fruits by a process already used for eggs; using the sand-blast for cleaning iron. The subject of double use is extensive. The courts and the Patent-Office proceed very differently here. The former give the patentee the benefit of the doubt; the office does the reverse. As a practical rule, where the question of double use is in issue, if a patent passes the office, it will be safe in the courts. The courts have for their assistance the knowledge of the results achieved by the patented article. If anything in the nature of an industrial revolution has been accomplished, it tends to prove that invention has been exerted. This refers to change of existing structures, as well as double use. The consideration of results achieved affects both. The office has to take a more abstract view of the subject, knowledge of results not being ordinarily at its disposal. If a functional change in a machine has been produced, it is invention; if only a structural one, invention is probably absent. Novelty is one of the statutory characters of patentable things, and it is affected by several sharply defined considerations of prior use and publication. The pioneers in invention have always the best chance in this matter.

Prior Use.—An invention will not be new if it has been in use in this country before its invention by the patentee was completed. An inventor may have honestly worked at his conception, and completed a perfect invention, only to find that the same thing has been done before, and that his device was in use in this country long before he thought of it. For this there is no remedy; his invention is unpatentable. Prior use must have certain characteristics, to make it efficient in destroying patentability. It must be public, no matter in how limited a sense. Private use has been decided to be ineffectual. A patentee is required to have a *quid pro quo* to exchange for his patent-right. He must make a gift to the public of something they were not already possessed of.

The anticipating structure, to come under prior use, must be a complete realization of the subject of the invention, and must have been successful in its operation. An abandoned experiment will not answer. A general resemblance of an inoperative structure will not answer, reduction to practice being essential.

Prior use abroad does not affect the inventor. The theory is, that the public in this country have no knowledge of the customs of other countries, as far as mere rumor or verbal report is concerned. This theory is recognized in the wording of the statute, where prior use is limited to prior use in this country.

Publication.—Publication affects patentability differently. If a description of the invention has been published in printed form, here or abroad, before the date of invention, an anticipation is proved. No exception is made in the case of foreign publications, as printed matter is supposed to travel everywhere. It must be a genuine publication. Rejected applications for patents are held to afford no instances of prior publication, if descriptions of inventions are found in them.

Combinations.—Within the past few years, new and very important rulings have been introduced in the Patent-Office on the question of combination, and the practice has become extremely stringent in this regard. All the parts of a patent must co-operate to the end, in the strictest possible manner. An aggregation or mere collection of parts will be held to be unpatentable. Like a perfect drama, the invention must have its unities. Every part of the combination that is specified in the

claim must play a part in the operation of the machine. This refers to the claim for combination. When it comes to the claims for parts, no part can be individually claimed outside of the combination, unless it is strictly essential to the working of the device. Thus, an automatic regulator working a steam-valve may be the subject of a patent for the combination. If the regulator is a separate structure, actuating or working a newly invented valve, and adaptable to other valves, the valve could not, as a separate device, be claimed in the same patent with that for the combination. Two or more patents should be taken out, one for the combination and one for the valve, and one for each other individual and replaceable element of the combination. When a patent for a combination comes before it, the office first examines into the mutual dependence of the elements of the combination. If these parts do not in the strictest sense work together, or co-operate for the same end, if they can be separated into two or more distinct and individually operative devices, which will work independently, the examiner will do it, and refuse a single patent for a supposed combination, which is really an aggregation. If the combination is allowed, and an attempt is made to claim individually different elements as having some peculiarities of structure, additional patents will be demanded for these, if known equivalents can be substituted for them in the combination. The decisions of the Supreme Court on reissues are the most important judicial decisions of the past few years; so in office practice the rulings on combinations constitute the most important of recent changes.

Interference.—The person to whom the patent is granted must, as far as the office knows, be the original inventor. If a patent has been granted to one who is a second or third inventor, the first inventor can claim his patent in the face of the preceding grant, provided the prior use and publication conditions are good. This constitutes one of the phases of interference. An interference between two or more inventors means a proceeding instituted on account of a conflict of claims to being the first inventor of any specific device. There are eight such cases of conflict: 1. Between two or more original applications. 2. Between an original application and an unexpired patent. 3. Between an original application and an application for reissue of a patent granted during pendency of such application. 4. Between an original application and an application for reissue of a preceding patent. 5. Between two or more applications for reissue of patents granted on applications pending at the same time. 6. Between two or more applications for reissue of patents granted on applications not pending at the same time. 7. Between a reissue application and an unexpired patent, whose original applications were pending at the same time. 8. Between an application for reissue of a later unexpired patent, and an earlier unexpired patent granted before the original application of the later patent was filed. In cases 2, 4, 6, 7, and 8, affidavits must be filed by the party latest in date of application, either original or reissue, such affidavit declaring that he is the original inventor. Interferences in the above-named cases will be declared by the Patent-Office. Before declaration, all the preliminary work necessary to put the new applications in shape for granting the application must be completed, so that when the interference is decided, the new patent, if it wins, shall be ready for issue.

As we are now treating of a proceeding in the Patent-Office, the staff of the office may be mentioned. Its head is the Commissioner of Patents. All communications relating to the office should be addressed to him under that title. The working force to whom the examination of applications for patents is intrusted, are called primary examiners. Between these two ranks there is a Board of Examiners, who hear appeals from the decisions of the primary examiners. An examiner of interferences completes the list.

The interference proceedings are conducted before the examiner of interferences. The issue between the parties must, before declaration of interference, be clearly defined by the primary examiner to the satisfaction of himself and the examiner of interferences. In case of disagreement, reference is made to the commissioner for decision. Until declaration of interference has been made, the primary examiner retains jurisdiction of the case; afterward it passes to the examiner of interferences. The interference is *pro forma* instituted and declared by forwarding the notices to the several parties to the interference, or to their attorneys, or assignees. If two parties are represented by the same attorney, notice will be sent to each of them, as well as to their attorney. The proceedings will then begin. The rules will be found in the "Rules of Practice of the United States Patent-Office," rules 92–127. The exact procedure need not be detailed here. The rules to be observed are as strict as those of the regular law courts, and the whole proceedings are based upon a system analogous to court practice. When an interference is decided, the party making application is given a patent, if he wins. Thus a very peculiar condition of things may arise in cases where the interference is between a patent already granted and a new application for the same invention. The Commissioner of Patents has no right to cancel a patent already granted, so that two patents may be in the field, one several years later in date than the other, yet the later one will be held the prevailing and valid patent. Sometimes these proceedings give rise to what may be termed hardships. Two inventors may go into interference, and one of them, during the time of the proceedings, which are often prolonged, may manufacture and make a profit out of

the article, before the office can decide who is the rightful inventor. Thus a person not the first inventor, and not destined to have the patent, may use the patent for some time. The great thing in interference proceedings is, to file a correct and sufficiently comprehensive yet concise preliminary statement. In subsequent taking of proofs the parties will be held to the dates set up in these statements, and will not be allowed to contradict their allegations. Different motions to amend are admitted, and the case goes on like a suit in the courts. In determining the date of invention, diligence in perfecting the invention is taken into account. Mere conception is held to be only a part of the act of invention. A case has arisen between two inventors where the one who made the later conception was the earliest to perfect it, and after this took out his patent later than the other; the other first conceived the idea, first patented it, and then went to work to perfect it as a practical device, and only succeeded in so doing after the date of his rival's patent. The first one described above was held to be the inventor. Diligence is esteemed a public service deserving recognition; and in many cases the practical work of perfecting is a part of the invention. As it is important to be prepared for interference proceedings, inventors should be careful to preserve records of the process of invention. Signed and witnessed sketches, attested as to date, and similarly guaranteed models, are usually the best evidence. There should never be any trouble in obtaining trustworthy and confidential witnesses to these.

Utility.—In the statute the word "useful" is used to qualify the subject of invention. All that can be said of this is, that the word is interpreted in the broadest possible sense, and that anything not opposed to good morals, or similarly injurious, is patentable, as far as its utility is concerned. The only case where the question of utility amounts to anything is where extent of invention under change of existing structures, or under double use, has to be ascertained. There extent of utility may be considered by the courts in determining whether invention has been exercised. Except in this particular case, the patentee has only himself to satisfy of the utility of an invention. Patentability is not affected directly by it.

Public Use.—An invention that has been in public use for more than two years prior to the date of application can not be patented. One may be the first inventor of a thing, and may introduce it into public use before applying for a patent. If he allows two years to elapse, it will be too late for him to secure his invention. If a patent is granted under such circumstances, the office not having cognizance of the public use in question, and subsequently comes into court, proof of such use will render it invalid. Another inducement to diligence is drawn from this. An inventor can not be sure that his invention will not escape him and go into public use unknown to him, and for the two years required to bar his patent. Still, the circuit courts have held that the inventor's knowledge and consent were necessary to constitute the statutory public use. Public use must occur in this country, to bar patentability. It must be a use in public; but the public need not be the users. Experiments do not constitute it. A great criterion, and one easily applied, is whether it has been used for profit, or been sold. Such use is generally fatal to it.

Abandonment.—Abandonment of an invention to the public destroys patentability. The theory is, that such inventions may be taken up by the public, and pushed to a successful result. In this case an injustice would be done in awarding the monopoly to one who had thrown his invention aside, to be developed by the labor and time of others. As the statute expressly allows two years' public use before the filing of the application, cases of abandonment generally refer to negligence in prosecuting an application already filed. It is a matter of fact, sometimes hard to prove, as the intention of the patentee has often to be inferred. To constitute abandonment, the public must know of it. Those seeking to prove abandonment have to bear the burden of proof, and such proof must be very clear.

Reissues.—The decisions given in the past two years on the subject of reissues have effected an immense change in the status of this class of patents. A reissue is a second patent granted to cover defects arising from errors in the original specification. An inventor feeling that his original specification contains errors due to inadvertence, may surrender it, and apply at the same time for a new patent, with amended specification and claims. If such be granted him, the old patent is void, of course, as being surrendered, while the reissue bears its own date of issue, and is granted for the unexpired term of the original patent. Formerly extensive changes in the specification were admitted, and expansion of claims also. Any time might elapse between the granting of a patent and the granting of a reissue. The new rulings of the courts have made the rights of reissued patents much more limited. They must be taken out soon after the original patent, without unreasonable delay, if any attempt is to be made to broaden the claims. As a rule, the claims can not be at all expanded. The inserting of claims of fewer elements is held to be a broadening. The theory of establishment of adverse rights, and of abandonment to the public of unclaimed portions of the invention, are the key-notes of these decisions. No new invention can, on any account, be permitted in a reissue, even if it is contained in what seems to be a narrower claim. The effect of this decision has been to invalidate a great many old reissues, and to reduce the number of reissues sought. The best general rule is, to adhere to the original patent.

Extensions.—The subject of extension of pat-

ents has nearly dropped out of sight since 1875, when the last extension patents had necessarily to run out (except perhaps design patents). Extensions are now granted only by special act of Congress.

Disclaimers.—Disclaimers are for the purpose of disclaiming any excess of claims. Where more has been claimed than was invented, the patent may have to be rendered correct and valid by such process. They are rarely filed, except under advice of an attorney.

Drawings.—The office is much stricter on this subject than formerly. The drawings of patents have to be reproduced and diminished by some photo-printing process, and a peculiar style of work adapted for this is exacted. Drawings should be on three-sheet Bristol board, 10 × 15 inches in size. One inch from its edges a single marginal line is drawn, leaving the "sight" precisely 8 × 13 inches. All work and signatures must be included within this line. One of the short sides is regarded as the top, and a space of not less than 1¼ inch is to be left blank for the heading of title, etc. *All* this heading is done by the office. The title of the drawing is written on its back in pencil. They must be rolled, not folded. They must be made in perfectly black India ink; no pale lines are admissible; rubbing out of pencil-lines, after the drawing is inked, frequently makes them so. In this case they must be gone over a second time. No rough lines must be made. Finally, the lines must be of a certain thickness, as hair-lines are not reproduced well. The lettering must be good; drawings are sometimes rejected for bad lettering. The Patent-Office rules for drawings are found in the "Rules of Practice."

Models.—No models are now required, except in special cases. This refers to practice, as the commissioner has the right to insist on their production. They must be neatly made, and not exceed 12 inches in any dimension.

Rules of Practice.—These are contained in a pamphlet entitled "Rules of Practice of the United States Patent-Office." Any one can procure a copy free by writing to the Commissioner of Patents, Washington, D. C. A specimen drawing, specification, and claims will be found in this pamphlet, together with all the rules, some two hundred, that guide the office in its work. From time to time new editions are published, and amendments to the rules are also published in the "Patent-Office Gazette."

Caveats.—It may happen that an inventor, having partially completed an invention, is afraid that some one will invent and apply for a patent for the same device before he is ready with his application. In such a case, he should take out a caveat. This is a description of his invention as perfect as the state of his work will admit. It should include a drawing made on thin paper or tracing-cloth that will admit of folding. It is filed at the Patent-Office, and for one year entitles him to notification if any one applies for a patent for the same subject. After the receiving of such notification, he has three months in which to prepare his specification, the other one not being taken up until the expiration of that period. The three months begin at the expiration of the time regularly required for the transmission of the notice by mail from Washington to the caveator's address. Thus a caveat affords no protection whatever. Prospective patentees often have a tendency to caveat their inventions. They should be clearly informed that a caveat is no protection to their invention, and gives them no standing in the court. As it tends to retard, indirectly, the efforts of the inventor, and thereby places him at a disadvantage in the race for diligence, it is generally not to be advised. Any citizen, or alien of a year's residence, who has declared his intentions, can file a caveat. Any one can take out a patent. A caveat can be renewed from year to year, for any period.

Design-Patents.—Patents for designs are granted for terms of three and a half years, or for seven years, or for fourteen years. Specification and drawing, engraving, or photograph, or model is required. The order of the subjects of the text should be as follows: 1. Name and residence of the applicant, title of the design, and name of the article. 2. Detailed description of the design as shown in the drawing, engraving, or photograph, with reference to designating letters. 3. Claim or claims. 4. Signature of the inventor. 5. Signature of two witnesses. Sometimes a design-patent may be made to take the place of a regular mechanical patent. The drawings should be on Bristol board, 10 × 15 inches in size, signed and witnessed. Photographs or engravings, if used, should be mounted on such paper. Unmounted copies of the photograph or engraving, if such be used, of a size not exceeding 7½ × 11 inches, are required by the office to the number of ten extra copies. If good drawings are furnished, the office reproduces them by photo-lithography.

Fees.—With regard to fees, a full list will be found printed in rule 209 of the "Rules of Practice." The principal ones are the following: On filing every application for a design-patent, $10. On issuing the same for three years and six months, no extra charge. On issuing the same for seven years, $5; for fourteen years, $20. On filing every caveat, $10. On every application for a patent for an invention or discovery, $15. On issuing each original patent for an invention or discovery, $20. The last charge must be paid within six months of the date of granting the application.

Change in English Patent Law.—We can not here say anything on the subject of foreign patents, except to note an important change in the English patent law. The payment for an English patent is now distributed over a series of years, by which the obtaining of one is made much less onerous. On application for a patent or for provisional protection, £4 is payable.

The patent is then subject to taxation as follows: £10 each fourth, fifth, sixth, and seventh year, and £15 each eighth and ninth year, £20 each tenth, eleventh, twelfth, and thirteenth year. Or £50 may be paid before the end of four years, or £100 before the end of eight years. By another change in the law, the patentee is required to swear that he is the original inventor. The first introducer can no longer patent an invention. The charge of American solicitors for procuring an English patent, including the Government fees, varies from $100 to $150.

Patent Libraries.—The best library for general use is the Astor Library of New York. Besides this the Peabody Library of Baltimore, the Boston Library, and the Library of Congress in Washington, may be mentioned. Others will be found in leading cities and universities.

Business of the Office in 1883.—The following are the principal statements of the business done in the Patent-Office in the year 1883:

Number of patents issued, including designs...	22,216
Number of patents reissued	167
Number of patents expired during the year....	8,874
Net receipts of office.....	$1,146,240 00
Excess of receipts over expenditures.....	471,005 14
Balance to credit of office in United States Treasury.....	2,676,476 24

One patent was issued for every 318 inhabitants of the District of Columbia, and one patent for every 22,188 inhabitants of Mississippi. These represent the two extremes among the States of the Union. Among foreign countries, Bermuda, Brazil, Newfoundland, and Venezuela are credited with one patent each; England with 435, Germany with 235, and France with 179.

International Conference for the Protection of Patents.—A conference to establish an International Union, like the Postal Union, for the protection of patents, designs, models, trade-marks, and trade-names, met in Paris, March 6, 1883, and adjourned after adopting a draft of a convention at the second sitting, on March 13th. The main points were settled at the first conference held at Paris two years before. The convention then proposed was communicated by the French Government to the other participating states. Some of the particulars were objected to by several of the states, and it was to harmonize their views on these minor points that the second conference was held. A much larger number of governments were represented. Of those which took part in the conference of 1880, Austria and Turkey were unrepresented. Representatives were present from the United States, France, England, Italy, Spain, Portugal, Russia, Sweden and Norway, Belgium, Holland, Switzerland, Roumania, Servia, Luxemburg, Brazil, the Argentine Republic, Uruguay, Guatemala, and San Salvador. The plan is, to have a union, sitting at Berne, which will represent the states whose patent laws are sufficiently in harmony, and endeavor to secure greater assimilation and the enjoyment of the rights possessed by the citizens of each by the citizens of all the others. One of the main points is, that a patentee or proprietor of a trade-mark or design will have a prior right of registration throughout the union. This will protect him against being forestalled by dishonest agents. Regulations for the protection of patentable devices, designs, and trade-marks during international exhibitions are recommended. The convention proposes also to protect trade-names without registration, whether they form part of a trade-mark or not.

PENNSYLVANIA. State Government.—The following were the State officers during the year: Governor, Robert E. Pattison, Democrat; Lieutenant-Governor, Chauncey F. Black; Secretary of State, William S. Stenger; Treasurer, S. M. Bailey; Auditor-General, John A. Lemon; Secretary of Internal Affairs, J. Simpson Africa; Attorney-General, Louis C. Cassidy; Superintendent of Public Instruction, E. E. Higbee; Insurance Commissioner, J. M. Forster. Judiciary, Supreme Court: Chief-Justice, Ulysses Mercur; Justices, Isaac G. Gordon, Edward M. Paxson, John Trunkey, James P. Sterrett, Henry Green, and Silas M. Clark.

Legislative Session.—The Legislature convened on January 2d, and adjourned on June 6th. The Governor immediately called an extra session, to begin on the following day, which did not finally adjourn until December 6th. In the call the Governor uses the following language:

> The Constitution commands the General Assembly, "immediately after each State decennial census," to apportion the State into senatorial and representative districts. This imperative mandate has not been obeyed. Equally important and necessary, though not so specifically commanded by law, is the duty of the Assembly to apportion the State into congressional and judicial districts. I therefore designate the apportionment of the State into senatorial, representative, congressional, and judicial districts, as subjects for legislative consideration.

Notwithstanding the length of the session, only the judicial apportionment was passed. On the others the two houses, the Senate having a Republican majority and the House a Democratic majority, failed to agree.

Of the 670 bills introduced in the Senate and House, 253 were passed finally. Of this number 60 were vetoed. Among those that became laws were the following:

> To prohibit the receiving and detaining of children in almshouses, and to provide for the care and education of such children.
>
> To abolish the contract system in prisons, and regulate the wages of the inmates.
>
> Requiring the assessors to make return of timberlands.
>
> To provide payment to the miner for all clean coal mined by him.
>
> To fix the salaries of county officers in counties containing over 500,000 inhabitants.
>
> Providing that wages of servant-girls, washer-women, cooks, and others shall first be paid from proceeds of sale of effects of insolvent debtors.
>
> To authorize the discharge of prisoners confined in jail under the insolvent act.
>
> Directing the investment of moneys remaining to the credit of the several sinking funds of cities of the

second class in loans of said cities, or of the United States or of the State of Pennsylvania.

To authorize in cities of the first class, wherever wayfarers' lodges shall be established, the commitment of persons to the house of correction as vagrants who shall obtain shelter and food from such lodges and who shall refuse to perform work in return therefor when physically able to work.

For the better security of bituminous-coal miners.

To prohibit political parties, committees, or members thereof, from demanding from public officials contributions for political purposes.

To prevent the selling of theatre tickets on the public streets and highways.

To prevent the consolidation of competing pipe lines.

Providing for the care and treatment of the indigent insane in the State hospitals.

To provide for the manner of decreasing the capital stock of banking corporations.

A supplement to the corporations act of 1874, to authorize the formation of corporations for driving and floating saw-logs, lumber, and timber. Such corporations are given power to straighten and deepen and erect dams, cribs, and other improvements in streams not exceeding twenty miles in length, and charge tolls not exceeding 10 cents for 1,000 feet, board measure.

Fixing the salaries of county officers in counties containing over 100,000 and less than 150,000 inhabitants, and requiring the payment of the fees of such officers into the respective county treasuries. The salaries are as follow: District attorney, $3,000; sheriff, $4,000; prothonotary, $3,000; clerks of courts, $2,000; register, $2,500; recorder, $3,000; treasurer, $3,000; county surveyor, $150; commissioners, each, $1,000; auditors, $250; solicitor, $500; directors of poor, $860; jury commissioner, $250; coroner, $1,000.

To require a brand upon all goods made for sale by convict labor.

To make accepted orders and certificates for petroleum negotiable.

To provide for gauging the petroleum in the custody of and examination into the conditions of firms and corporations engaged in the business of storing and transportation by means of pipe lines.

To provide for the disposal of the property of unincorporated associations organized for benevolent, charitable, or beneficial purposes upon the dissolution, expulsion, surrender of warrant or charter or vacation of the same.

Requiring anthracite-coal operators to keep ambulances for the conveyance of injured miners.

For the appointment of a commission of six practical miners and six practical operators to revise the mining and ventilation laws relating to the anthracite-coal region.

Requiring the owner, lessee, agent, or foreman of every anthracite-coal mine to furnish props and timbers for the safe running of the coal.

Requiring the owners of hotels, seminaries, colleges, academies, hospitals, asylums, storehouses, factories, manufactories, workshops, tenement-houses, and the directors of public schools, to have fastened to the inside of each of six window-heads on the third and every additional story a chain ten feet in length to which a rope at least an inch in diameter shall be affixed of sufficient length to reach the ground. A proviso requires such a rope and chain to be furnished in each room of a hotel above the second story.

The Wallace arbitration act. This bill provides that the Judge of Common Pleas Court or the President Judge in Chambers shall, upon the petition of fifty workmen employed by five different firms, or five employers who employ at least ten workmen each, or a firm employing at least seventy-five men, appoint a tribunal of an equal number of employers and workmen, the exact number to be stated in the petition and not to be less than two of each, for the adjustment of disputes in the iron, steel, glass, textile fabrics, and coal trades. If after three meetings the tribunal is unable to make a decision, an umpire shall be selected "by the mutual choice of the whole of the representatives of both employers and workmen constituting the tribunal," who shall decide the points submitted to him in writing within ten days. The award when made and signed by the umpire may be made a matter of record by presenting it with the submission in writing to the proper judge, who indorses his approval and directs it to be entered on record. "When so entered it shall be final and conclusive, and the proper court may, on motion of any one interested, enter judgment thereon, and when the award is for a specific sum of money may issue final and other process to enforce the same."

The anti-discrimination bill, declaring "undue and unreasonable discrimination" to be unlawful, and providing that "no railroad company or other common carrier engaged in the transportation of property shall charge, demand, or receive from any person, company, or corporation for the transportation of property, or for any other service, a greater sum than it shall charge or receive from any other person, company, or corporation for a like service from the same place upon like conditions and under similar circumstances, and all concessions in rates and drawbacks shall be allowed to all persons, companies, or corporations alike for such transportations and service upon like conditions under similar circumstances and during the same period of time. Nor shall any such railroad company or common carrier make any undue or unreasonable discrimination between individuals or between individuals and transportation companies in the furnishing of facilities for transportation."

The abolition of the useless and expensive office of sealer of weights and measures and of recorder for cities of the first class, the passage of the Wallace voluntary labor tribunal act, the several acts broadening and liberalizing the provisions of the free railroad law, the act known as the free-pipe law, the act prohibiting the consolidation of telegraph companies, and the act to enforce the provisions of the seventeenth article of the Constitution relative to railroads and canals, were made in obedience to the demand of the people.

For the expenses of the extra session, the sum of $543,053.93 was appropriated.

Finances.—The annual statement of the Treasurer includes the receipts from Dec. 1, 1882, to Nov. 30, 1883, both days inclusive, and a summary of it is given below:

Lands	$5,159 99
Tax on corporation stock and limited partnerships	2,089,082 03
Tax on gross receipts	837,556 08
Tax on coal companies	7,148 08
Tax on bank-stock	365,468 56
Tax on net earnings or income	59,126 18
Tax on gross premiums	39,635 90
Tax on loans	148,369 95
Tax on personal property	374,819 47
Tax on writs, wills, deeds, etc.	108,009 89
Tax on collateral inheritances	604,764 65
Tax on sale of fertilizers	4,990 00
Foreign insurance companies	255,660 18
Tavern licenses	489,985 58
Retailers' licenses	315,128 76
Eating-house licenses	33,172 51
Brewers' licenses	11,960 39
Billiard licenses	33,886 05
Brokers' licenses	17,960 59
Auctioneers' licenses	14,188 75
Liquor licenses	30,572 56
Peddlers' licenses	2,745 66
Patent-medicine licenses	3,501 34
Theatre, circus, etc., licenses	4,459 00
Bonus on charters	107,004 24
Office license-fees	5,827 00
Accrued interest	5,838 45
Penalties	129 52
Notaries' public commissions	10,950 00
Allegheny Valley Railroad Company	232,500 00
United States Government	35,766 58
Commutation of tonnage-tax	460,000 00

Annuity for right of way	10,000 00
Escheat	5,869 95
Fees of public officers	44,177 28
Refunded cash	634 10
Dividends on stock owned by the Commonwealth	560 00
Conscience-money	13 75
Miscellaneous	4,968 05
Total	$6,775,430 19

The expenditures for the same period amounted to $6,708,690.22, including: Expenses of government, $1,592,084.52; loans redeemed, $506,000; interest on loans, $374,704.50; purchase of United States bonds, $969,812.50; common schools, $1,080,409.92; charitable institutions, $600,773.71; soldiers' orphan schools, $351,101.18; penitentiaries, $224,297.25; State Industrial Reformatory, Huntingdon, $87,500; House of Refuge, Philadelphia, $40,500; Pennsylvania State Reform School at Morganza, $57,300; National Guard of Pennsylvania, $215,324.83.

The following statement shows the indebtedness of the State on Dec. 1, 1883:

FUNDED DEBT.

Three and one-half per cent. currency loan	$2,580,000 00
Four per cent. currency loan	8,540,000 00
Five per cent. currency loan	7,923,700 00
Six per cent. Agricultural College scrip	500,000 00
Total interest-bearing debt	$19,543,700 00

Unfunded debt and debt upon which interest has ceased:

Relief notes in circulation	$96,158 00
Interest-bearing certificates unclaimed	4,448 38
Interest-bearing certificates outstanding	13,038 54
Six per cent. Chambersburg certificates unclaimed	148 66
Domestic creditor	25 00
Five per cent. bonds on which interest has ceased	21,314 70
Six per cent. bonds on which interest has ceased	39,950 00
Public debt, Dec. 1, 1883	$19,718,783 28

The total number of taxables in the State is 1,141,349, and the total value of all real estate is $1,598,430,041. The value of real estate exempt from taxation is $110,000,126. Of this aggregate, $80,697,201 is in Philadelphia. There are only four counties whose valuations are less than a million each, and these are Sullivan, Pike, Fulton, and Cameron. The horses and mules over four years of age number 434,365 in the State, and the cows and neat-cattle number 675,842—the value of the horses being $21,790,526, and that of the cattle $11,587,315. The tax laws are exceedingly faulty, and the burdens imposed under them are very unequally distributed.

Schools.—The following statistics are from the report of the superintendent for the year ending June 4, 1883:

School districts in the State	2,327
Schools	19,542
Graded schools	7,997
Male teachers	8,600
Female teachers	13,414
Average salaries for male teachers per month	$37 03
Average salaries of female teachers per month	$30 05
Average length of school term, in months	7·02
Number of pupils	957,680
Average number of pupils	626,268
Cost of tuition	$5,193,691 74
Cost of building, purchasing, and renting	$1,858,139 20
Cost of fuel, contingencies, debt, and interest paid	$2,154,505 71
Total cost for tuition, building, fuel, and contingencies	$9,206,336 65
Expenditures of all kinds	$9,385,959 90
State appropriation	$1,000,000 00
Estimated value of school property	$30,199,684 00

Political Conventions.—The Republican State Convention met in Harrisburg on July 11th, and nominated Jerome B. Niles, of Tioga county, for Auditor-General; and William A. Linsey, of Allegheny county, for State Treasurer. The platform declared for a protective tariff; distribution to the States of surplus in the national treasury; full redemption of the trade-dollars; civil-service reform; reform in the State government; and commending the administration of President Arthur.

The Democratic State Convention met in Harrisburg on August 1st, and nominated, for Auditor-General, Robert Taggart, of Warren county; for State Treasurer, Hon. Joseph Powell, of Bradford county. The platform declared for civil-service reform, by electing good men to office; for such imposition of import duties as will "prevent unequal burdens, encourage productive industries at home, and afford just compensation to labor, but not to create or foster monopolies"; that the surplus in the national treasury should be applied to payment of the debt; that internal taxation should be abolished; that public lands should be reserved for actual settlers; that "the administration of Gov. Pattison has vindicated the pledges of reform upon which it was elected"; that "the action of the Legislature in passing laws to protect honest working-men from being brought into competition with convict-laborers is to be recommended"; and that "tax laws of the State should be carefully revised, and so changed as to make them bear equally upon all classes of property."

Temperance.—The third annual State Convention of the Constitutional Temperance Amendment Association was held in Bellefonte on May 24th and 25th. The resolutions adopted contained the following passages:

> That we hold up to public reprobation the vote by which the House of Representatives not only so wantonly disregarded the respectful request of such a large number of their voting and non-voting constituents for the submission of a prohibitory amendment to the decision of the sovereign people, but also by so doing struck a dangerous blow at the sacred right of petition; . . . that we appoint two delegates to attend the annual convention of the Superintendents of Common Schools of Pennsylvania, and also the State Teachers' Association, in order to press upon these bodies the importance of introducing into the schools instruction on the nature of alcohol, and its effects upon the human body and character.

Election.—At the election in November, the Republicans were successful. The vote was as follows: for Auditor, 319,106 Republican, 302,031 Democratic, 6,602 Prohibition, and 4,452 Greenback; for Treasurer, 321,050 Republican, 300,999 Democratic, 6,687 Prohibition, and 4,431 Greenback.

PENSIONS, INCREASE OF. See page 248.

PERSIA, an empire in Asia. The government is an absolute monarchy, based on the precepts of the Koran, resembling very nearly in constitution that of the Turkish Empire. The Shah, or Emperor, claims absolute obedience, as the vicegerent of the Prophet. Under him the government is carried on by a ministry composed of the Vizier-i-Azem, who directs the foreign policy and acts as military commander-in-chief; the Ameen-ed-Doulah, or treasurer; and five subordinate ministers, created after the model of European cabinets. The country is divided into fifteen provinces, each governed by a Beglerbeg, who is usually a prince of the royal family. The towns and villages elect their own magistrates.

The reigning Shah is Nassr-ed-Din, born Sept. 4, 1829, who succeeded his father, Shah Mohammed, Sept. 10, 1848. He is the fourth sovereign of the Kadjar family. The heir presumptive is his son, Muzaffer-ed-Din, born in 1852. He is governor of the province of Azerbaijan. The second son of the Shah, Massoud Mirza—called Zil-es-Sultan—is governor of Ispahan. The Shah has the right to change the regular order of succession, and appoint any member of the royal family to follow him upon the throne.

Area and Population.—The area is about 633,000 square miles. A large portion of this territory is desert. The population is estimated at 7,658,600, of whom about 1,968,800 are inhabitants of cities, 3,780,000 of villages and rural districts, and 1,909,800 are nomads. In every 1,000 of the Mohammedan population 495 are males and 505 females. The population of the principal cities is estimated as follows:

CITIES.	Population.	CITIES.	Population.
Teheran	200,000	Ispahan	60,000
Tabreez	165,000	Meshed	60,000

The inhabitants of the towns and country districts are mostly of pure Persian race. The nomad population is divided into 260,100 Arabs, 720,000 Tartars, 675,000 Kurds and Leks, 20,700 Beloochees and Gypsies, and 234,000 Bahtiars, etc.

Religion.—The population is divided in respect to religion approximately as follows:

CREEDS.	Number.
Shiites	6,860,600
Sunnites, etc.	700,000
Armenians	43,000
Nestorians and Chaldeans	23,000
Israelites	19,000
Parsees	8,000
Total	7,658,600

The Shiites differ in doctrine and in tradition from the Sunnites, who compose the population of the Turkish dominions. The Persian priesthood consists of a variety of orders. The chief of these are the Mooshtehed, of whom there are five. These are appointed by the choice of the people, and are the real heads of the clergy. The one who resides at Kerbela, near Bagdad, is recognized as the chief. The official hierarchy has for its chief dignitaries the Imans Djouma and Sheiks-ul-Islam, who are appointed by the Government and receive salaries from the state. The ordinary ministers of religion are of three classes: the mooturelles, one for each mosque and place of pilgrimage; the muezzins, or sayers of prayers; and the mollahs, or performers of rites. The Armenian and Nestorian Christians are treated with tolerance, but the Jews and the Parsees, or Guebres, suffer persecution.

Education.—Much attention is paid to education. There are numerous colleges supported by the Government, and private instructors are employed by families that have the means. Students are instructed in the Persian and Arabic languages and literatures and in certain sciences, as well as in religion.

Army.—By the law of 1875 it was proposed to introduce the system of conscription and limited terms of service, but the old system is still in practice. The army is organized by provinces, tribes, and districts. The local and tribal chiefs are usually the military commanders. The army is reported by the Minister of War as numbering 105,000 men. A standing force of about 30,000 men is kept in active service. It is composed of 18,000 nizams or regular infantry, 10,000 irregular cavalry, 500 cavalry organized and trained like Cossack regiments by Russian officers, and 1,500 artillery trained by Austrians and armed with Uchatius guns. The remainder of the army forms a reserve which is subject to no drill or discipline unless called out by the Minister of War.

Revenue.—The entire revenue of the country is at the disposal of the Shah, who, with the other members of the royal family, usually amasses a large fortune. That of the present Shah is estimated at $20,000,000, half of it in diamonds and other precious stones. The receipts and expenditures are known only by estimates. About one fourth of the revenue is paid in kind and is reserved for the use of the army and the Shah's household. The army and the salaries of the priesthood consume the main portion of the annual receipts. The surplus is paid into the treasury of the Shah. The revenue is apportioned to the towns, villages, and districts, each of which has to contribute a certain amount fixed periodically by assessors. The main incidence of the taxes is upon the Mohammedan laboring population. The revenue from 1872 to 1875 averaged about $9,500,000, and the expenditure $8,780,000. The receipts in 1876 amounted to about $6,945,000 in money and $1,270,000 in kind. Over $6,000,000 of the total was raised by direct taxation, and the rest by customs. The expenditures were about $8,000,000. The following were the principal items: Army, $3,392,000; royal court, $1,536,000; clergy, $1,200,000; gifts to great families, Afghans, and others, $400,000; foreign affairs, $140,000; other departments of state, $300,000; colleges, $60,000. There is no public debt.

Commerce.—The total value of the imports

approximates $12,500,000 per annum; that of the exports, $7,500,000. The external commerce is mainly with Europe, through Tabreez, by way of Constantinople. All goods are forwarded by caravans between Tabreez and Trebizond. There is also a growing commerce with Russia on the north. In 1883 Russia prohibited the free transit of foreign goods through the Trans-Caucasian provinces, imposing protective duties, so as to give her own products a monopoly in the markets of the neighboring parts of Persia. The chief article of import is cotton goods, of British manufacture, which were imported to the average value of $4,000,000 during the five years ending with 1880. Other imports are glass, paper, iron, copper, sugar, and tea. The chief article of export until recently was silk, shipped to Great Britain and France. Of late years opium has become the most important article. The exports from the ports of the Persian Gulf of this commodity increased from $348,000 in 1879 to $4,235,000 in 1881. Carpets are exported to Europe of the value of about $500,000 per annum. Other exports are tobacco, skins, gums, wool, dates, grain, and rice.

Posts, Railroads, and Telegraphs.—A postal service, established by Europeans, was opened in 1877. Mails are conveyed between Julfa, on the Russian frontier, Tabreez, Teheran, and Reshd, on the Persian Gulf. The number of letters forwarded in 1879 was 426,008.

At the end of 1879 there were 3,367 miles of telegraph in operation, with 5,660 miles of wire. The number of dispatches transmitted in 1878 was 500,000, the receipts about $45,000.

In November, 1882, the Government arranged with a French syndicate for the construction of the first line of railroad, to run from Reshd to Teheran, 250 miles.

PERU, a republic of South America. Area, about 540,000 square miles; capital, Lima. By virtue of the treaty concluded with Chili in 1883 (see CHILI), Peru has ceded to the latter the province of Tarapacá, and Chili may furthermore acquire from Peru the provinces of Tacna and Arica, if, ten years after the date of the treaty, the people of those provinces should so decide; but such decision will involve a pecuniary indemnity by Chili to Peru. The cession of Tarapacá has diminished the area of Peru by 20,600 square miles.

According to the census of 1876, Peru had a population of 2,699,945, of whom 1,365,895 were males and 1,334,050 females, without counting about 350,000 wild Indians. The cession of Tarapacá has taken away 42,000 citizens, 28,014 of whom were males and 13,988 females, thus leaving Peru a population of 2,657,943; or, if the wild Indians be added, about 3,000,000.

The principal cities are: Lima, the capital, with 101,488 inhabitants; Callao, 33,502; Arequipa, 29,237; Cuzco, 18,370; and Chiclayo, 11,325.

Government.—The President of the Republic is Gen. Iglesias. The Cabinet was composed of the following ministers: Minister of State and Justice, Señor Barinega; Foreign Affairs, Señor Lavarelle; War, Gen. Osma; Finance, Señor Malpartida.

The United States Minister at Lima is Capt. S. L. Phelps. The Peruvian Minister at Washington is Señor J. F. Elmore; and the Consul at New York, Mr. J. C. Tracy.

Army.—During the war, Peru had enrolled for active service about 16,000 men.

Navy.—Prior to the outbreak of hostilities, the Peruvian navy was composed of four iron-clad steamers, one of which was a frigate of 550 horse-power, mounting 22 guns; one ram of 300 horse-power and 5 guns; two monitor-rams, each 330 horse-power and 2 guns; six steamers, one a frigate of 400 horse-power and 13 guns; two schooners, each of 180 horse-power and 6 guns; and three steam transports, one of 400 horse-power and 4 guns, one 90 horse-power, and one 250 horse-power and 6 guns. There were also three school-ships and two steamers, and five river-steamers of 386 horse-power. The entire naval force was therefore eighteen vessels, with a joint horse-power of 3,396, and mounting altogether 66 guns. The war caused the destruction of the iron-clad frigate and of one monitor, while the ram and one corvette were captured by the Chilian navy.

(For a sketch of the war in 1883, and other events connected with it, see BOLIVIA.)

Finances.—The public indebtedness on Jan. 1, 1876, was as follows:

Internal debt		$24,952,158
Foreign debt:		
Ecuador bonds	$98,580	
The Pisco-Ica loan	1,328,400	
The loan of 1870	56,834,900	
The loan of 1872	107,733,700	
		165,990,580
Floating debt		23,000,000
Grand total		$213,892,738

On the date above named, the coupons of Peruvian bonds failed to be paid, but it was officially declared that this was only a "momentary interruption of punctuality." Since then there have been two short periods when there was some hope that something would be done to satisfy the bondholders. The first of these periods fell in the year 1877, when the so-called "Raphael contract" raised such expectations; and the second occurred in 1880, when the committees, till then hostile to each other, blended into one and accepted the Chilian proposals. But on reviewing the past eight years it will be found that the names of the Société Générale, the Peruvian Guano Company, the Raphael contract, the Dreyfuss lawsuit, the Sir Charles Russell Committee, the Croyle Committee, the MacKellar & Co. contract, the agents Anthony Gibbs & Co., and the Peruvian and Chilian Government representatives, are mixed up in such inextricable confusion that it would be useless to wade through the history of the many guano con-

tracts concluded during this period of eight years. We shall, therefore, only take up the thread of events as directly bearing on this complicated question at the moment when Chili, as the conqueror of Peru, took possession of the territory in which the guano deposits are situated.

In December, 1879, Chili gave official notice of her occupation of the guano and nitrate-of-soda districts, and warned the French banking-houses with which Peru was negotiating not to enter into contracts with the Peruvian Government, nor make advances on such contracts. The Peruvian agents applied at once to the English bondholders, through the Crédit Industriel of Paris, after abandoning the Société Générale and Dreyfuss, and offered, under certain conditions, to transfer to them the guano deposits. By doing so, they engaged to do what they were unable to carry out; Chili consequently immediately took the matter into her own hands. The Chilian Government offered the bondholders, on condition of payment of a tax of £1 a ton on guano of a low grade, and 30 shillings a ton for a higher grade selling over £11, to put them in actual possession of the guano, and that she would hold herself responsible for having the agreement maintained in the treaty of peace, whenever this was restored. The bondholders, at a general meeting held on Feb. 2, 1880, accepted the proposition unanimously. The committee of Mr. Croyle and the one of Sir Charles Russell were thereupon blended into one, and a few weeks later the joint committee began chartering vessels for the loading of guano. In the summer of 1880 it was ascertained that Chili had resolved to turn the guano deposits in the province of Tarapacá to her own use, and that the tax on guano shipments from Pabellon de Pica, Lobos, and Huanillos islands was to be, without distinction, 30 shillings a ton. But this was not all, for Chili virtually shipped a number of cargoes for her own account, and informed the committee of bondholders that proof would have to be furnished that the committee was a representative one in fact. This proof was furnished early in 1881, when, out of £33,000,000 outstanding bonds, no less than £23,000,000 were registered at Mr. Martin's bank, London. A temporary contract, which the Chilian Government had made with Messrs. MacKellar & Co., was supplemented in the spring of 1881 by a formal arrangement with Messrs. Anthony Gibbs & Co.

Toward the close of 1881, Anthony Gibbs & Co. announced that £120,000 worth of guano sales effected only netted to the credit of the bondholders £17,829. The latter thus perceived that, with the high tax on low-grade guano, there was little prospect of their ever realizing much, if anything, from the sales. The bondholders then made direct application at the seat of government, and the result was the Chilian decree of Feb. 9, 1882, agreeing to share equally with the bondholders in the proceeds of sales, and at the same time ordering Messrs. Gibbs and MacKellar to liquidate their claims. Simultaneously tenders were invited by the Chilian Government for the conclusion of a fresh guano contract embracing 1,000,000 tons, the Government declaring its readiness to deposit 50 per cent. of the net proceeds in the Bank of England. This contract was made with a French syndicate of capitalists. In May, 1883, it was estimated that £260,000 had thus accumulated, and that 75 per cent. thereof ought to be distributed among foreign creditors as the result of three years' accumulations.

On Oct. 20, 1883, the treaty of peace was signed at Lima, in which it was provided that the net proceeds of Chili's sale of 1,000,000 tons of guano, "after deducting the expenses and other charges specified in Article XIII of the said decree, shall be equally divided between the Government of Chili and the creditors of Peru whose claims may be found to be supported by the guarantee of the guano. When the sale of this 1,000,000 tons is concluded, the Government of Chili will continue paying over to the Peruvian creditors 50 per cent. of the net proceeds of the guano, as established by the said Article XIII, until the debt is covered or the deposits now being worked are exhausted. The products of the deposits or beds that may hereafter be discovered in the ceded territory are to be the property of Chili."

Peru began the year 1884 with her finances in a most deplorable condition. The additional protocol of the treaty stipulates that "to meet in part the expenses to be incurred by Chili in maintaining the army of occupation, the Government of Peru will deliver monthly to the general-in-chief of those forces the sum of $300,000 in current silver coin, which sum shall be appropriated from the national revenues of Peru, with preference to the payment." On Jan. 1, 1884, $100,000 had been paid to the Chilians out of the $600,000 then due. It was said that Chili would not press for the remainder, but would hold Mollendo, the port of Arequipa, and appropriate the customs due there, then about $150,000 monthly, until the monthly payments were satisfied.

The Postal Service.—In 1878 there were about 300 post-offices, and they forwarded inland 2,753,829 letters, and by the sea route, 2,051,-202, besides 2,360,249 newspapers.

Railroads.—In 1878 there were in operation 1,581 miles of railroad, of which 1,210 miles were Government property. Chili declined to sanction the building of any new railroads in Tarapacá prior to the ratification of the treaty of peace. The famous Oroya Railway is a stupendous work of engineering skill. It was originally intended to connect the Peruvian sea-coast with the head-waters of the Amazon, and establish communication with the rich silver-mines of Cerro de Pasca. The Peruvian Government bore the expense, $25,000,000, although only 86½ miles have been completed,

and the object is still some hundred miles from attainment. (See ENGINEERING, page 317.)

Telegraphs.—There was a total length of wire in 1878 of 1,393 miles. The service was carried on by thirty-four offices, dispatching 94,-214 private and 16,455 Government messages.

Commerce.—The exports from Peru to the United States during the fiscal year 1882 amounted to $3,034,476, including 20,522 tons of guano and 114,176,044 pounds of nitrate of soda, against $2,526,918 in 1883, including 102,394,360 pounds of nitrate and no guano. The export of domestic goods from the United States to Peru was $533,823 in 1882, and $487,-360 worth in 1883.

PHARMACY. The art of preparing and dispensing remedies, occupying a position between chemistry on one side and medicine on the other, has developed in recent years to such an extent that it now claims a position among the sciences. Special schools for it are found in many of our cities; large organizations, both scientific and trade, protect its interests; the preparation of pharmaceutical compounds has become an important constituent of our manufacturing industries; and special legislative measures govern the dispensing of medicines and poisons. Pharmaceutical literature is large and rapidly increasing.

Colleges.—There are fourteen institutions devoted to the education of pharmacists in this country. The Michigan School of Pharmacy was organized in 1867 as a professional department of the State University at Ann Arbor. The course of study at this school occupies two years, during which instruction is given in the various branches of analytical chemistry, pharmacy, materia medica, etc., with laboratory work of four or five hours daily. A three years' course is optional. The degree conferred is that of Pharmaceutical Chemist (Ph. C.). This school, although offering the most thorough courses of study, and requiring the highest qualifications, does not insist on previous practical experience in pharmacy, and therefore is not classed with the so-called "teaching-colleges of pharmacy," whose diplomas, conferring the degree of Graduate in Pharmacy (Ph. G.), are granted only to such students as have had four (or "several") years of actual experience in a drug-store, in addition to attending the prescribed course of the college. The following are the recognized "teaching-colleges" of pharmacy:

Albany College of Pharmacy, established as a department of pharmacy of Union University, at Albany, June 21, 1881, and incorporated as the Albany College of Pharmacy, August 27th of the same year.

California College of Pharmacy, established in 1878 as a department of pharmacy at the University of California. It is in San Francisco.

Chicago College of Pharmacy, established in 1866.

Cincinnati College of Pharmacy, established in 1871.

Louisville College of Pharmacy, established in 1871.

Maryland College of Pharmacy, instituted in 1841, at Baltimore.

Massachusetts College of Pharmacy, Boston, Mass., instituted in February, 1823; reorganized in April, 1881, and incorporated in April, 1882.

Philadelphia College of Pharmacy, organized in 1821, received its charter from the State in 1822.

Pittsburg College of Pharmacy, organized in August, 1878, received its charter during the same year.

St. Louis College of Pharmacy, established in 1865.

National College of Pharmacy, established in 1871, in Washington, D. C. This institution confers the degree of Doctor of Pharmacy (Phar. D.).

Louisville School of Pharmacy for Women, at Louisville, Ky., established in 1888.

Department of Pharmacy, University of Wisconsin, Madison, established in 1883.

There are two Canadian schools of pharmacy: the Montreal College of Pharmacy, in its sixteenth year; and the Ontario College of Pharmacy, established in 1883.

Pharmaceutical Associations.—The American Pharmaceutical Association, organized in 1852, has a large and increasing membership (about 1,400). It has members from all parts of the country, and holds annual meetings in September at some city previously selected. The following is a list of the State Associations, with the date of their organization:

Alabama	1882	Missouri	1878
Arkansas	1883	New Hampshire	1873
California	1869	New Jersey	1870
Connecticut	1876	New York	1879
Georgia	1875	North Carolina	1880
Illinois	1880	Ohio	1879
Indiana	1882	Pennsylvania	1878
Iowa	1880	Rhode Island	1874
Kansas	1880	South Carolina	1876
Kentucky	1878	Texas	1880
Louisiana	1882	Vermont	....
Maryland	1883	Virginia	1882
Massachusetts	1882	West Virginia	1881
Michigan	1883	Wisconsin	1880
Mississippi	1883		

These associations convene annually. Their exercises consist of reports of committees on questions of scientific or trade interest, and the reading of papers treating of subjects pertaining to pharmacy, with discussion thereon.

Trade Organizations.—The most important of these is the National Wholesale Drug Association, which was established in 1875 as the Western Wholesale Drug Association, and in 1882 became the National Association. Its principal object is the correction of excessive and unmercantile competition, and the removal, by concert of action, of all evils and customs that are against good policy and sound business principles. Its membership includes representatives of nearly all the important houses dealing in drugs in this country. In September, 1883, was organized at Washington, D. C., the National Retail Druggists' Association. This is for the protection of the business interests of the retail trade, and to devise measures for the prevention of disastrous competitions. It is hoped that a uniform schedule of prices may be established, so as to break up the prevalent "cutting" of rates. There are also several local societies.

Pharmaceutical Legislation.—The rush of unqualified persons into the drug business has made apparent the necessity of restricting the practice of pharmacy by law to those who are qualified. To ascertain the qualification of ap-

plicants for licenses, in such States as have pharmacy laws, boards of pharmacy have been appointed from among the best representatives of the profession, to examine candidates and grant diplomas allowing them to practice. Many of the States have pharmacy laws, but they differ very greatly, and an effort is being made to establish uniformity throughout the country. Certain portions of the Union are still without any laws on this subject.

Literature.—The "Pharmacopœia of the United States" is the recognized official manual of the pharmacists. This work is revised and issued every ten years by the authority of a National Convention held at Washington, and composed of delegates from the medical and pharmaceutical colleges. Although not authorized by the Government, it is accepted as the authority by which legal disputes relative to drugs shall be settled. The present edition is the sixth decennial revision, of 1880, and was published in 1882. The "Dispensatory of the United States," edited by H. C. Wood, Joseph P. Remington, and S. P. Sadtler, occupies the position of commentary to the Pharmacopœia. It gives very full descriptions of the articles mentioned in the "United States Pharmacopœia," and also includes those given in the "British Pharmacopœia." It further embraces extensive and comprehensive information in regard to other drugs and chemicals used in pharmacy and medicine, that are not officinal. A revised edition appeared in 1883. Other important works are: Parrish's "Treatise on Pharmacy" (Philadelphia, 1883), and "Lectures on Practical Pharmacy," by Barnard S. Proctor (Philadelphia, 1883). Among the journals devoted to pharmacy are the "American Journal of Pharmacy," "The Druggist's Circular," the "American Druggist," and the "Weekly Drug News."

Practical chemistry and experimental therapeutics are continually adding new drugs and preparations to the resources of pharmacy.

PHYSIOLOGY. The Heart.—Dr. W. H. Gaskell, F. R. S., of Cambridge, has published ("Journal of Physiology") an account of experiments upon the innervation of the heart. Previous experiments in this line having been made with the heart of the frog, he selected the heart of the tortoise, so as to secure corresponding observations with other animal types for comparison. His investigations bore: 1. On the spontaneous rhythm of the different parts of the heart and of the heart as a whole; 2. On the sequence of the contractions of the different heart-cavities; 3. On the action of the cardiac nerves; 4. On the action of atropine and muscarine. Before the nerves of the heart and the ganglion-cells were known, the beat of the heart was attributed to the direct stimulating action of the blood on the cardiac muscle. The discovery of the cardiac ganglia and of their situation in the sinus, where the origin of the rhythmic beat was located, led to the hypothesis that they played the chief part in the causation of the beat, although they were at the same time recognized as appendages to the nerves, and not separate, independent structures; and experiments were referred to which were thought to afford positive proof of the preponderating influence of the ganglion-cells in the causation of rhythm, and other experiments were thought to indicate the mode in which they acted. When, however, it became known that a constant stimulus, whether electrical, chemical, or mechanical, applied to the muscular tissue at the apex, could cause that muscle to beat rhythmically, even though no nerve-cells were to be found in it, the question arose, Are these motor centers really similar to those of the respiratory center, or is it not more likely that they supply a constant stimulus to the muscle, and that it is the property of the cardiac muscle to produce rhythmical results from that continually acting stimulation? On either view, certain ganglia are supposed to possess motor functions, upon which the heart-beat ultimately depends, and the cardiac muscle itself is not supposed to possess any power of automatic rhythm, but merely to contract rhythmically upon the application of a suitable external stimulus. The results of Dr. Gaskell's experiments are adverse to this hypothesis. In their light, the heart is conceived as a specially modified portion of the vascular system; as a piece of artery or vein, the muscular walls of which have developed in a special manner. The peculiarities of the cardiac muscle arise from its structural position, intermediate between unstriped and striated muscular fiber. Muscular tissues exhibit three different modes of responding to stimulation—"tonic," "rhythmical," and "rapid" contraction—according to their structure. The difference between them is clearly shown in a comparison of the tetanizing action of a strong interrupted current upon a strip of muscle from the bladder of the tortoise, and from the heart of the tortoise, and with the ordinary tetanus curve of the frog's gastrocnemius. The unstriped muscle of the bladder contracts slowly after a long latent period, with steadily increasing force during and even after the cessation of the tetanizing current, and the strip returns slowly to its original length. This represents a prolonged tonic contraction. The striated muscle gives the curve of tetanus, consisting of the superposition of a series of rapid contractions. And the cardiac strip gives a curve which is intermediate between the two, and may be described as a long-continued tonic contraction upon which are superimposed a number of rapid contractions that never succeed one another so quickly as to fuse together. The cardiac muscle, then, when tetanized gives a tetanus of tonicity in virtue of its relationship to unstriped muscle, and at the same time a series of rapid contractions in consequence of its affinity to striated muscle. When the vitality of the tissue is impaired, the cardiac muscle loses its power of rapid contrac-

tion, and the less specialized tonic power alone remains. The intermediate position of this muscle is also shown in the duration of its vitality after the death of the animal, which is less than that of unstriped muscle, but decidedly greater than that of the ordinary striated muscles. Evidence is accumulating that the power of rhythmical contraction is common to many different kinds of muscle; and as it has been developed to a greater extent in some unstriated muscles than in others, so it has reached a still higher stage—that of rhythmical automatism—in some kinds of cardiac muscle than in others. We may, then, compare the development of function in the three kinds of muscular tissue as follows:

Striated muscle of vertebrates: Rapidity of contraction most highly developed; tonicity rudimentary; rhythmic action still more rudimentary.

Cardiac muscle: Rhythmic action most highly developed; rapidity of contraction well marked; tonicity well marked.

Unstriped muscle: Tonicity most highly developed; rhythmic action well marked; rapidity of contraction most rudimentary.

Stimulation of the vagus nerve was found capable of producing opposite effects upon the rhythm of the heart, either of slowing, or standstill, or of acceleration. The results are more constant with the tortoise, where a stand-still can always be obtained, frequently followed by acceleration, but not accompanied by evidence of a primary acceleration, than with the frog. The effects are almost exclusively produced through the fibers of the right vagus nerve. The auricular contractions only are affected by the stimulation, and this by being diminished in strength during its operation, and increased after it has been stopped. Nervous action has an effect competent both to depress and to exalt the conduction power of the muscular tissue of the auricle, and that independently of the action upon the force of the muscular contractions. It removes a partial block, and enables every contraction to pass the blocking-point by expediting the recovery of the conduction power of the muscle at that point, which would otherwise take place more slowly after the passage of each contraction-wave. While the initial effect of the vagus appears to be to depress some function, its final and most enduring power is to exalt, intensify, and repair that function. It may, therefore, be regarded as essentially the trophic nerve of the heart. Its effects on the contraction force and conduction power of the cardiac muscle are the same as those of an interrupted current applied to the muscle directly, which is too weak to cause muscular contractions. Atropine improves the contraction power, the rhythmical power, and the conduction power of the muscle, in a fixed and stable manner, but not necessarily lastingly. Muscarine depresses every function, but without preventing the possibility of a limited amount of improvement in it.

Messrs. H. H. Donaldson and Lewis T. Stevens, of Johns Hopkins University, have found, from experiments with digitaline on the heart of the frog and the terrapin, that the drug causes a decrease in the work done by the heart, that in moderate doses it increases the blood-pressure, and that it causes a rise of mean blood-pressure by constricting the arterioles, probably through its action on the muscular coats.

Taljanzeff states that, in violent breathing, partial or complete inhibition of the contractions of the right side of the heart may take place, without, however, any fall of arterial pressure resulting, the blood being forced from the right to the left side of the heart by the action of the breathing movements on the organ, especially on the right ventricle. He has discovered also that, if the branches of the vagus going to the lungs are cut, and their central ends stimulated, a decided reflex action on the heart and blood-vessels is obtained. In most cases the heart was slowed, giving the well-known "vagus-pulse," and the blood-pressure was lowered; though in one experiment there was a fall of aortic pressure, without any change in either the force or the rate of the heart contractions.

Gaule has shown that a frog's heart, washed out with dilute solution of common salt until it ceases to beat, is rendered capable of further pulsation when dilute alkaline solutions are sent through it; and he concludes that the alkali nourishes the heart. Martius, while confirming the experiment, dissents from the conclusion. The administration of the alkali, he finds, leads to a certain number of beats, but these soon cease, and a fresh supply of alkali is then inefficient, while other liquids, especially blood-serum, lead to renewed cardiac contractions. In his opinion, the frog's heart-muscle has in itself no store of energy-yielding material which it can call upon, but works at the expense of food-matters yielded it constantly by the liquid circulating through it. When the heart, irrigated with salt solution, ceases to beat, this is due to the saturation of its tissue with carbon dioxide, while still some nutrient matter (blood) remains not washed out from the ventricular net-work. The salt solution, acting merely as a medium for physical diffusion, can not remove the carbon dioxide as fast as it accumulates, and consequently the heart ceases to beat while it still has some available food. The alkali, on the other hand, chemically removes the injurious carbon dioxide; and the heart beats for a short time, using the food-stuff in the blood still present in its meshes. When the heart, treated with dilute alkali, ceased to beat, new pulsations could only be obtained by supplying it with liquids containing serum-albumen.

The Blood.—Several independent observers describe a new morphological element of the blood different in character from both the white and red corpuscles, and believed to be

the source of the fibrin which appears in the process of coagulation. According to Bizzozero's account, it is a colorless disk or lens-shaped body, with a diameter equal to from one quarter to one half that of a red corpuscle, and is perfectly destitute of hæmoglobin. Hayem and Laker state that it is biconcave, Bizzozero that it is not; while Laker and Bizzozero agree that it can not be considered an intermediate stage in the development of red corpuscles. The disks have also been examined by Norris, who claims to have described them under the name of "invisible corpuscles" as far back as 1878. Bizzozero believes that the fibrin is derived from the disintegration of these disks, and adduces several facts in support of his view, among which are—1. Liquids which have a tendency to prevent coagulation preserve also more or less completely these blood-plates from destruction. 2. Experiments made upon blood kept within the uninjured blood-vessels showed that as long as the blood remained uncoagulated, the blood-plates kept their shape, while the rapid coagulation of shed blood was always preceded by a destruction of the plates and the formation of granular masses from them. 3. When a drop of the blood was whipped with slender threads for about fifty or fifty-five seconds, and the threads were withdrawn and slightly washed with 0·75 per cent. of sodium chloride containing methyl violet, and then examined under the microscope in the same liquid, they were found covered with a layer of "plates," together with some white corpuscles. If the whipping was continued longer, the layer of plates became a granular mass or was transformed into a film of fibrin. The experimenter was able to a certain extent to watch this process, the deposition of the plates, their fusion into a granular mass, and the subsequent formation of fibrin, by observing under the microscope a thread placed in a slow current of blood. 4. When to a liquid containing fibrinogen and fibrinoplastin only, some of the colorless blood-plates adhering to a thread were added, coagulation followed. The mere presence of a foreign body, as a thread, was shown to have no effect. It was shown by satisfactory tests that the coagulation was not owing to the few red corpuscles which it was impossible to wash off the thread, nor to leucocytes adhering to the thread. The conclusion is drawn that the colorless plates must be assigned the chief part in coagulation. A pale nucleated plate, differing from the white corpuscles, and similar in functions to the colorless plate here described, has also been found in birds and amphibia.

L. C. Woolridge, D. Sc., of the Leipsic Laboratory, describes a series of experiments on dog's blood which tend to establish the fact that lecithin, a body omnipresent in protoplasm, can bring about coagulation.

Feuerstack, in a memoir on the development of the red blood-corpuscles, after reviewing the various theories on the subject, announces as his conclusion: "We find in the circulation of animals with nucleated blood-corpuscles every possible transition between colorless and colored blood-corpuscles. That there are transition stages from the white to the colored cells is shown by the course of development during artificially induced blood-formation." Mr. Charles S. Minot suggests, in "Science," that the author has overlooked the more plausible view that the colored corpuscles are merely nuclei and not completed cells.

Dr. Richard Norris, of Birmingham, England, claims to have discovered that the white corpuscles of the lymph peel off the body of the cell, setting the nucleus free; that the latter then enters the circulation as a colorless disk which is ordinarily invisible, and gradually becomes colored by the endogenous secretion of hæmoglobin. He uses his alleged discovery to contradict some of the established views concerning the physiology and pathology of the blood. Mr. Ernest Hart has controverted his views, and, repeating his experiments, has shown that the methods employed create the colorless disk out of the red corpuscle by removing, in one manner or another, the hæmoglobin.

Regarding the influence of the inorganic constituents of the blood on the ventricular contraction, Prof. Sydney Ringer had shown from previous investigations that the contractility of the ventricle can not be supported without the presence of a lime salt in the circulating fluid; that lime salts greatly delay diastolic dilatation; and that this effect is obviated by a potash salt. He had further shown that a solution containing sodium chloride and a lime salt only will not sustain contractility so long as a mixture containing a potash salt in addition; and that sodium bicarbonate added to saline solution will not sustain contractility, nor will saline solution with sodium bicarbonate and potassium chloride. Yet sodium bicarbonate, or rather an alkaline state of the fluid, does favor contractility. In one of the experiments spontaneous contractions restored by sodium bicarbonate became even stronger than with the blood used at the beginning of the experiment. Continuing the discussion of his experiments, and seeking for the reason of this improvement, he observes that it can scarcely be maintained that an alkaline fluid is necessary, since in another experiment fairly good though weakened contractions persisted after feeding the ventricle with a neutral solution for ninety minutes and more. More probably, the acid developed in the muscles under contraction gradually weakens, and at last suspends contractility. It is certain that the sodium bicarbonate acts by virtue of its alkalinity, and not as a sodium salt, for the addition to the circulating fluid of calcium hydrate or ammonium carbonate will produce the same restoration of the beats. The amount of contraction, the duration of the contraction, the breadth of the trace, and the rapidity of dias-

tolic dilatation, depend entirely on the relative quantity of the normal saline constituents of the blood. With calcium chloride added to the saline, if the rhythmic contractions retain their normal frequency, we get increased breadth with rounding of the top of the trace, which leads to fusion of the beats, and the trace rises high above the top of the base-line. The effect of adding potash salt to the circulating fluid is to remove lime effects and restore good normal conditions. If the contractions are less frequent, or occur only with an excitation, the calcium chloride, like other lime salts, at first broadens the trace, rounding its top, and then greatly retards diastolic dilatation. Potassium chloride obviates these effects. The effects may be modified by introducing potassium bicarbonate, or by varying the amount of calcium chloride in the circulating fluid; but with a sufficient quantity of potassium chloride, no quantity of calcium chloride is capable of retarding diastolic dilatation.

The Nervous System.—From observations made upon dogs, to determine the connection of the semicircular canals with the function of equilibration, Bechterew has concluded that unilateral section is followed by forced movements of rotation around the axis of the body, with deviation of the eyes, nystagmus, etc., which movements are at first constant, but occur later in paroxysms separated by periods of rest. During the intervals between the paroxysms, the animal assumes a constrained position, lying on the opposite side to that of the section. The rolling movements finally cease, but the tendency to exhibit circus movements toward the injured side continues, while the animal is deficient in power to maintain its balance on its feet. These symptoms are reflex, for they are still exhibited after removal of the cerebral hemispheres, or in narcosis; but they are more marked when the hemispheres are present. Section of both auditory nerves is accompanied by marked deficiency of the power of maintaining equilibrium, so that the animal can neither stand nor walk. The forced movements when only one nerve is cut are due to the disharmony resulting from the presence of the normal semicircular-canal sensations on one side and their absence on the other. The balance is destroyed, and vertigo results. The well-known action of auditory impressions in influencing movements, as in dancing and marching, is thought, from these experiments, to occur through the semicircular canals.

In subsequent experiments Bechterew found that the central gray substance of the third ventricle forms an organ of equilibration in the same sense as the semicircular canals and the olivary bodies. Having prepared his subject so that a section could be made of the gray matter in any desired direction, he found that injury to any portion of that substance in the third ventricle was always followed by disturbances of equilibrium similar, in a general way, to those caused by section of the semicircular canals. Disturbances of equilibrium which have been noticed by other observers after sections in this region, but which were attributed to other parts, were, in Bechterew's opinion, probably caused by injury to the walls of the third ventricle. The presence of bodily equilibrium is brought about, according to this observer, by the action of three peripheral equilibrium organs; viz., the semicircular canals, the gray matter of the third ventricle, and the olivary bodies of the medulla. Each of these organs, it is interesting to notice, is not only connected with the cerebellum, through which it acts on the muscles, but is closely related also to one of the higher sense-organs: the olivary bodies, to the skin; the semicircular canals, to the ear; and the gray matter of the third ventricle, to the eye. The intimate connection existing between the organs of sight and equilibrium is known to all; and this connection depends not so much on the visual sensations as on the position of the eyeballs. Injury to the center in the third ventricle was always followed by marked changes in the direction of the axes of the eyeballs; and the author suggests that changes in the position of the eyeballs may, in their turn, act as mechanical stimulus to this center.

Experiments on dogs by Bochfontaine go to confirm the view of Flourens, ascribing vicarious functions to the cerebral convolutions. At one time electrical stimulation of a particular surface area, *a*, may, for example, be followed by a secretion of the submaxillary gland, or by some definite movement of a limb, while the same stimulus, applied to other regions of the cerebral surface, has no such consequences. In half or three quarters of an hour the region *a* will, however, cease to react to stimuli, while some other area, *b*, previously inexcitable, becomes irritable, and its stimulation is followed by the same phenomena as resulted from the stimulation of *a*. Bochfontaine suggests that the gray rind is itself not capable of electrical excitation, and that the result is always due to direct stimulation of subjacent medullated nerve-fibers. A bundle of such fibers, all with the same peripheral connection, may subdivide in the brain, and end in three or four different regions of its surface.

Dr. Seymour J. Sharkey, of St. Thomas Hospital, London, has described a number of cases within his practice bearing upon the subject of cerebral localizations, in the light of which he makes the statement that although there may be slight differences of opinion as to the exact limitation of the cortical centers, recorded cases present a striking agreement with regard to the most important facts. The conclusions which appear to be warranted from our present experience are: 1. That there are cortical centers, and that they are situated in the two ascending central convolutions, and in the convolutions adjacent to them on the internal aspect of the hemispheres. 2. That the centers for the arm, leg, and face are more

or less anatomically distinct. 3. That the centers for the lower part of the face and tongue are situated in the inferior extremity of the ascending frontal convolution, and that in most persons the posterior part of the inferior frontal convolution, and its junction with the ascending frontal in the left hemisphere, are specially connected with the faculty of speech. 4. That the centers for the arm are situated in the middle portion of both ascending convolutions, and that they extend into the upper third of these convolutions to a distance which is at present uncertain. 5. That the centers for the leg occupy the upper extremities of the two ascending convolutions and the parts continuous with them on the internal aspect of the hemispheres.

W. Kühne, having made observations of the motor-nerve endings on a considerable number of vertebrates, has given descriptions of the manifold forms of the terminal ramifications of the axis-cylinder in various species. By a special method of treatment he brings the axial-tree (*Axialbaum*), as he styles it, into a visible state while preserving its natural form, when the motor-plates can be seen with surprising distinctness. He has also devised a new method for isolating the end-plates, when the real arborization is revealed, quite different from the apparent arborization before isolation. The ramifications are composed of the axis-cylinder, and a sheath of substance which Kühne calls the stroma, separating the axis-cylinder from the fundamental substance of the motor-plate. The terminal ramifications in *Rana* (the frog) are formed, according to Trinchese, of little disks, placed at more or less regular distances from one another, and separated by a homogeneous intermediate substance. From these ramifications on the side toward the muscles, run out numerous very fine filaments. The "longitudinal striæ" of the muscle have a similar structure to that of the axis-cylinder, being formed of disks united by clear intermediate substance; and the disks are united by lateral filaments with one another.

Beaunis has described the results of observations made upon himself with regard to the time that elapses between the stimulation of the sense of smell and the giving of the signal indicating the perception of the sensation. He finds that stimuli like ammonia and acetic acid, which excite not merely fibers of the gustatory nerve, but also nerves of common sensation, have a shorter reaction time than stimuli which act only or mainly on the nerve-fibers concerned with the sense of smell proper. In the cases of camphor, asafœtida, ammonium sulphide, chloroform, carbon disulphide, valerian, mint, and carbolic acid, the reaction time increases in the order of the names from ·50 to ·67 of a second. The moment of olfactory perception of musk could not be determined. The time of reaction appears to be longer in the case of this sense than in those of touch, sight, or hearing. Results in the main concordant with these have been reached by Buccola of Turin.

Digestion. — Herzen, investigating the functions of the spleen, has brought forward a theory by which the apparently contradictory conclusions of Schiff and Heidenhain may be reconciled. Schiff was led to believe that after removal of the spleen, the pancreatic secretion lost its power of digesting proteids, and concluded that, though the spleen did not itself make the proteolytic ferment, it furnished to the blood something essential to the formation of it in the pancreas. Heidenhain showed, in 1875, that a substance (zymogen) capable of yielding proteolytic ferment accumulated in the pancreas quite independently of the presence or absence of the spleen. Herzen has found that, after removal of the spleen, the pancreas may still heap up zymogen (*trypsogen*), but that this is not under such circumstances transformed into a proteolytic ferment (*trypsin*), as it is normally when the spleen is present, and in physiological activity. Hence, after splenotomy, or in cases of serious splenetic disease, the digestion of albuminous substances is greatly impaired.

Winogradow has described the results of spleen extirpation as manifested in the blood, lymphatic glands, and bone-marrow of dogs, several of which were kept alive, in good health, for more than two years after the splenotomy. The number of red corpuscles in a cubic metre of blood always falls in a short time after the operation till, in from 150 to 200 days, it is less than half the normal number. After twelve months there begins a gradually increasing proportion of abnormally small red corpuscles, while those of exceptionally large size, some of which are always found in normal dog's blood, entirely disappear. The white corpuscles show no morphological change; their absolute number is sometimes increased, sometimes diminished. In one case, after 132 days, most of the lymphatic glands were found enlarged, softer than the normal, and red on section, especially in the cortical layer, the color depending mainly on red blood-corpuscles which were abundant in the lymph-channels of the gland, but being partly due to deposits of brownish-red pigment, the *detritus* of broken-down corpuscles. The marrow in the central cavity of nearly all the long bones was red-colored, the coloration being due to red corpuscles lying outside the blood-vessels in the spaces of the proper marrow-tissues. Later, similar but less marked divergences from the normal structure were found in both the lymphatic glands and the bone-marrow. Transfusion of the blood of a dog which had undergone splenotomy produced similar effects in the lymph-glands and bone-marrow of another dog.

Messrs. R. H. Chittenden and J. S. Ely have made a series of experiments to ascertain the amount of alkali present in normal mixed human saliva, and whether the alkalinity is subject to

variation in different persons and at different times, and, if so, whether there is any connection between variations of alkalinity and the diastatic action of saliva. More than fifty specimens of the saliva of fourteen persons were examined. The average alkalinity of the samples expressed in the form of sodium carbonate was ·080 per cent. The average diastatic action of fifty-four samples expressed in the percentage of sugar formed from the starch was 42·82 per cent. An examination of the individual results obtained showed several interesting facts, which may be summarized as follows: 1. Saliva from different individuals may show a constant difference in alkalinity, although in the majority of cases the alkalinity varies only within narrow limits; 2. Saliva secreted by the same individual at different times has within certain limits a constant degree of alkalinity; 3. While saliva from different individuals shows in several cases a decided and constant difference in alkalinity, there is no corresponding difference in diastatic action which is at all constant. We are thus forced to the conclusion that the variations of alkalinity are within too narrow limits to exercise any appreciable influence on the diastatic action of the saliva.

Béchamp has investigated the origin of the power possessed by human saliva of saccharifying starch-paste—a power which the saliva of many animals, including even such herbivores as the horse, has not. He concludes that it is not due, as some have thought, to chance germs which have entered the mouth from the atmosphere, but to a special ferment more active than diastase, and that it is produced by the action on the pure secreted saliva of specific microscopic organisms living in the salivary glands and in the mouth-cavity of man. The pure parotid saliva of horse or dog does not convert starch-paste into copper-oxide-reducing substances, nor does it acquire this power when exposed to the air, or when gently warmed with scrapings from the tongues of those animals; but it becomes very efficacious when scrapings from the inside of the human mouth are added to it.

E. Jessen has made investigations respecting the time required to digest meat and milk prepared in different ways: 1. With artificial gastric juice. Of twenty-five grammes of beef in each condition, at the end of twenty-four hours: 5½ grammes of the raw, from 9½ to 9¾ grammes of the half-cooked, and from 17 to 18 grammes of the well-done beef remained undissolved. 2. In the stomach of a dog. The raw meat was also digested more quickly than boiled or roasted meat, the time required for raw beef being from 5·3 to 5·5 hours. 3. Experiments were made upon man by introducing 100 grammes of meat and 300 c. c. of water into an empty stomach, pumping out the contents of the stomach after a time, and examining them with a microscope. The time required for complete digestion was as follows:

	Hours.
Raw beef, shaved fine	2
Half-done boiled beef, shaved fine	2¾
Well-done boiled beef, shaved fine	3
Half-done roasted, shaved fine	3
Well-done roasted, shaved fine	4
Raw mutton	2
Raw veal	2¾
Raw pork	3

In the experiments with milk, a quantity was given, the amount of nitrogen in which would correspond with that contained in 100 grammes of beef. This with cow's milk was 602 cubic centimetres. That quantity of the raw milk was digested in 3½ hours; of boiled milk in 4 hours; of sour milk in 3 hours; 675 c. c. of skimmed cow's milk were digested in 3½ hours; 656 c. c. of raw goat's milk in 3½ hours.

The Physiology of Voice.—Prof. T. Wesley Mills, of McGill University, has published the results of examinations which he has made with the laryngoscope and tested by autolaryngoscopy upon certain controverted questions of the physiology of the voice. The questions embrace the functions of the epiglottis in changes of pitch and of quality, the influence of the trachea and of the supra-glottic chambers on pitch, the falsetto voice, and the registers of the singing voice. On the first point Mr. Walton has maintained, in a paper published in 1878, that "the epiglottis was seen to take different positions in changes of pitch, quality, and intensity." Prof. Mills, remarking that this author and others have made the mistake of considering the movements of the epiglottis as essential when they are only incidental, concludes from his own observations that "the epiglottis may act like a resonator, and probably is one in some degree; that by its movements it is a modifier of the quality of sounds, but not appreciably of their pitch; but that the question as to how far the mere presence of the epiglottis independently of its particular movements may influence these qualities of sound is not as yet determined in the human subject." Concerning the influence of the trachea on pitch, "it is a matter of commonest observation, that above a certain point in the scale (which latter varies with sex, age, and the individual), the larynx rises or falls according as the pitch is above or below this fixed point, which has been named the 'station-note.'" It appears from the experiments that, while the breath-pressure is almost if not quite sufficient of itself to account for the rise of the larynx and trachea, it does not explain their fall below the position for the "station-note"; and for the efficient action of the arytenoid and cricoid cartilages in particular, and to effect a state of support and tension generally in the larynx, certain muscles, including the thyro-hyoid, the palatopharyngeus, and the inferior constrictor, act in harmony. Helmholtz gives no favor to the view that the supraglottic air-chambers can alter materially the tones of the vocal cords. Notwithstanding this authority, and a few experiments that are cited as bearing apparently against his view,

Prof. Mills holds that these chambers do constantly exercise an important influence on pitch, and supports his position by citing observations or experiments which almost any one may test for himself. Thus, while all the other conditions are unchanged, by passing suddenly from the arrangement of the supra-glottic parts suited to the utterance of *o* (as in "note") to that form of the parts requisite to sound *e* (as in "me"), a change of pitch will be noticed which the most undiscriminating ear can not fail to appreciate. The same experiment may be repeated in view of the laryngeal mirror, when a change of pitch will be made without any noticeable change in the glottic appearance. Again, if the vowel *a* (as in "say") be sung at about the pitch of common conversation, or rather higher, and a musical instrument sound the note which seems best in accord with it, a departure from the note by even half a tone will be found to alter slightly the sound of the vowel. Hence, in accounting for pitch we must take into consideration the condition of the supra-glottic apparatus as well as the behavior of the larynx. The term falsetto voice is used to designate a certain quality of the voice not distinguished from the natural voice by any fixed line, but overlapping with it through a series of notes that can be produced by either. The essential conditions in the production of this quality are closure of the glottis posteriorly to a variable extent, depending largely on the pitch, but somewhat different in extent in different individuals; the force of the blast; and the manner of blowing. Variable conditions are the compass of the falsetto; the extent to which the vocal bands approximate posteriorly, and especially anteriorly; and the perfection with which the vibration of the segmented portion of the vocal cords can be effected. Almost precisely the same conditions apply to the head-voice production in females. A vocal register is defined by Garcia as "a series of consecutive and homogeneous sounds, rising from the grave to the acute, produced by the development of the same mechanical principle, the nature of which essentially differs from any other series of sounds equally consecutive and homogeneous produced by another mechanical principle." Garcia and Madame Seiler divide the registers into the chest and the head register, with the falsetto interposed between them. Madame Seiler makes a further division, and physiologically describes the registers as follows: *a*. The first chest-register, in which the whole glottis is moved by loose vibrations; *b*. The second chest-register, in which the vocal ligaments alone act; *c*. The first falsetto, in which the edges alone of the vocal cords vibrate, but the whole glottis is in action; *d*. The second falsetto, in which the edges of the vocal cords only are used, and the vocal ligaments alone are in action; and, *e*. The head-tones, in which the edges alone are vibrating while the ligaments are partially closed posteriorly. Prof. Mills accepts the division and definitions, as to essential points, after having tested them on fifty subjects. In conclusion, he suggests that most writers on the physiology of voice appear to have attached too little importance to the wind-force apparatus and its action. Every trained singer knows, or should know, that correct breathing is, of all things, the most important in healthy and efficient vocalization. The chest production, the head-voice so called of males and high falsetto, cause in the subject sensations very different, part of which are referable to the larynx and to the wind apparatus. It is a matter of observation that more breath-force is required to produce a chest-tone than a head-tone of the same pitch, and less for the corresponding falsetto than for the head-tone. But that there is some difference in the manner of blowing that is essential to a good achievement in these different productions is capable of proof by experiment on one's own person.

Formation of Urea.—To determine in what part of the animal organism urea is formed, W. von Schroeder has made a series of experiments in which blood was caused to circulate through living organs, the amount of urea contained being determined both before and after its passage. An experiment on a dog after the kidneys had been extirpated showed that urea still accumulated in the blood. Ammonium carbonate was added to a specimen of blood, which was then passed through an ox-kidney, but afterward showed no increase in urea. Like experiments with dogs' kidneys gave the same result. Hence it was concluded that the kidneys are incapable of converting ammonium carbonate into urea. Experiments were also made with the livers of dead dogs into which blood was injected by the portal vein and taken out from the vena cava above the diaphragm. In one experiment, blood to which ammonium carbonate had been added contained before injection ·0442 per cent. of urea, after the injection ·0812 per cent.; in another experiment the increase was from ·0538 to ·1253 per cent., the solid matter in these cases having only slightly increased. Blood without the addition of ammonium carbonate was then passed through the liver of a hungry dog, and through that of one killed during the process of digestion. No perceptible increase in urea was noticeable in the former case, while in the latter the content of urea rose from ·0499 to ·0636, showing that the liver is able to produce urea from some substance formed in digestion.

The method of the formation of urea from ammonium carbonate, Von Schroeder holds to be by the loss of water.

Further light has been thrown upon the formation of urea in the body by the researches of E. Salkowski in regard to the behavior of several amido acids. The sodium salt of metamido-benzoic acid was given to rabbits and dogs in quantities of two to ten grammes a day. In the urine of the rabbits 5 per cent. was ob-

tained as uramido-benzoic acid, and in that of the dogs nearly 20 per cent. Thus is rendered probable another example of a synthesis by the addition of cyanic acid within the animal body, since under the conditions which there prevail no other mode of formation for uramido acids is yet known. To ascertain in which organ uramido-benzoic acid is formed, Salkowski experimented upon a rabbit from which the kidneys had been extirpated, and found the acid in the blood, liver, and muscles. Ligaturing the ureters caused no increase in the amount of acid found. It is, therefore, evident that uramido-benzoic acid is not formed in the kidneys, and, since Von Schroeder has found that ammonium carbonate is converted into urea in the liver, it is probable that the former process is also carried on there.

Physiological Literature.—The year's list of new publications is not distinguished by the presence of any book of great importance in physiology. A considerable number of volumes and papers have appeared, particularly in Germany, where this work has been most industriously carried on, embodying the results of special studies, but little is to be found in them that adds materially to our knowledge of general principles, or points to any startling discovery.

Among the American publications of more general interest are Brubaker's "Text-Book of Physiology"; a translation, by Meade Smith, of L. Hermann's "Experimental Pharmacology"; and Dr. Gradle's (Chicago) treatise on "Bacteria and the Germ-Theory of Disease." Mallet has published a paper on the "Determination of Organic Matter in Potable Water." White has discussed the question, "Is the Blood a Living Fluid?" R. S. Henry has reported upon his new studies in the "Crystallization of Hæmoglobin." Chittenden and Ely have investigated the "Alkalinity and Diastatic Action of Human Saliva." We notice also monographs, all embodying the results of experimentation, by M. L. Holbrook on the "Termination of Nerves in the Liver"; Minor on "A Case of Color-Blindness for Green"; Muybridge on the "Attitude of Animals in Locomotion"; Mitchell and Reichert on the "Venom of Serpents"; and Sternberg on the "Germicide Value of Certain Therapeutic Agents, and on the Micrococcus of Gonorrhœal Pus."

The English list furnishes a fourth edition of Dr. Michael Foster's "Text-Book"; a translation, by McAlister, of Ziegler's "Text-Book of Pathological Anatomy and Pathogenesis"; Coats's "Manual of Pathology"; Klein's "Histology"; Malley's "Microphotography"; studies by Wells on "Indian Snake-Poisons"; Lawes, Gilbert, and Warrington on the chemistry of the "Fairy Rings"; Pavy, Johnson, Rolfe, and Oliver, on "Urinary Tests and Tests for Albumen"; Elsberg, Bower, and Gardiner, on "Protoplasm"; Geddes on the "Cell Theory"; Harris, Norris, and Ray Lankester, on the "Blood"; Gaskell on the "Function of the Cardiac Tissue"; Huddicombe on "Respiration"; Budwin on the "Supposed Poisonous Alkaloid in Human Saliva" (in which he contradicts some conclusions of Gautier); Garrod and Cook on "Uric Acid"; Stone on the "Influence of High Temperature on the Electrical Resistance of the Human Body"; L. Brunton on the "Nature of Inhibition, and the Action of Drugs on it"; Poulton on the "Origin of Taste-Bulbs"; Stone on "Singing, Speaking, and Stammering"; Brown on "Photography of the Larynx and Soft Palate"; Blomfield, Dowdeswell, and Wiltshire, on the "Reproductive Organs"; Ringer on the "Effects of Dilution and Concentration on the Action of Poisons"; Lauder Brunton on the "Temperature-Modifications of the Action of Drugs"; Dowdeswell on the "Action of Papaine with reference to the Occurrence of Micro-Organisms in the Blood"; Ringer and Sainsbury on the "Action of Chloral, Opium, Bromide of Potassium, and Barium Chloride"; Williams on "Experiments upon Bacteria with Disinfectants"; Klein and Ray Lankester on "Bacteria"; Crooke on "Bacilli in Scarlet Fever"; and by Cheyne, West, Gibbes, Smith, Williams, Green, and Dreshfield, on the "Bacillus of Tubercle." New apparatus have been described by Shenstone, Vacher, Glazebrook, Thelfall, and Warner.

The German list includes four hundred and thirteen titles, and a small number of papers in French are registered.

PITA. The pita-plant differs from an aloe proper (the European aloe belongs to the lily family), and also from the cactus, with both of which it has been confounded. Richard Whiteing speaks of the planters of Mauritius cultivating it for its valuable fiber, and names it a species of aloe (*Aloe Mexicana*); and Dr. Trowbridge, United States consul at Vera Cruz in 1880, said, in speaking of a variety of this plant, if not actually the same species: "There is a species of cactus here commonly called 'pita,' some of the fibers of which are sixteen feet long. It is strong and silky, and capable of being drawn into threads, from which gossamer webs might be woven. In fact, a few months ago, a Vera Cruzan sent some of the fiber to England, and had a few handkerchiefs made, which were extremely beautiful, and appeared more like silver tissue than linen, and were quite strong." Pita is generally known as the American aloe or agave-plant (*Agave Americana*). It belongs to the amaryllis family, and has been put to a great variety of uses in Southern Mexico and the several republics of Central America. The dried flower-stems have been extensively utilized to make thatched roofs for tropical houses, the strength of the fiber giving to such roofing a wonderful durability. The sap of the leaves of one species of the American aloe (coarser than the one which is the subject of this article) becomes, when fermented, the well-known

Mexican drink, *pulque*, and, when distilled, the pleasant but deceptive *vino mezcal*. The fiber, which is the most valuable and wonderful quality of the pita-plant, has been extensively used by the natives for shoe-strings, hammocks, and cordage. It extends the entire length of

PITA PLANT (AGAVE AMERICANA).

the leaf, and has been extracted by first pounding the leaf on a rock, then exposing it to the rays of the sun, whereby the bark of the leaf became crumbled, and a second pounding, followed by combing, produced the clean fiber. This process is necessarily slow and expensive, which accounts for the fact that the use made of this fiber has been entirely confined to the tropical countries producing it.

The pita-plant of Central America seems to yield a finer fiber than that of Mexico; but there is a marked difference, in this particular, in localities on the same parallel. In the lowlands of Honduras and Nicaragua, where pita grows most luxuriantly, the leaf is straight, from three to four inches in width, having no middle stalk, and from a few feet to eighteen feet in length. In its growth there, it monopolizes the soil, taking exclusive possession—excepting, of course, the tropical forest-trees. From the fact that this plant has, as yet, received no systematic cultivation or cutting, it is impossible to determine the exact annual yield; but, from the best sources which present themselves, this yield (by cutting the leaves three or four times a year, so as to bring up an average of six feet in length) will be from three to five tons of clean fiber per acre. The territory occupied by this plant is exceedingly extensive. Along some of the water-courses, and extending back from them, single tracts of 1,000 acres can be found.

The crude fiber is equal in value to Manila hemp, when applied to like uses; but in fineness, strength, and durability, it is superior. The ultimate fiber is even finer than that of the threads of silk spun by the silk-worm. The writer of this was shown the two under a powerful microscope at Lyons, France, and heard many exclamations of surprise by manufacturers at the unexpected result; and in discovering also that pita-fiber did not lose its strength when reduced to the floss state. Experiments have been made in weaving this fiber when flossed, with cotton, wool, or silk; and it has been found that this can be done advantageously with each of them. As the pita-fiber possesses a silky gloss of its own, it has been thought by manufacturers that it would be found valuable to mix with silk, especially in the manufacture of heavy fabrics where weight, strength, durability, and finish are required. It is the strongest vegetable fiber known. Companies have been organized in New York recently to reduce this pita-plant into fiber, and to introduce machinery to this end. One company has put up a factory during the past year on Black river, Honduras, a short distance from the port of Hiriona. Near this point and along this river are extensive fields of pita. The company's works comprise a saw-mill, shops, other buildings, steam-power, and a small steam-tug on the river to tow pita to the factory, and it is now testing various machines, recently invented. A wide field seems here to open itself to the inventor. Years of patient work of inventive brains were required before proper machinery was perfected to produce ramí-fiber from the stalk; and some waiting may still be necessary before a practical machine shall be completed, capable of reducing the green leaf of the pita-plant to a marketable product.

PORCELAIN. This name is said to have been given by Europeans to the finest wares of China, from the resemblance of their fine polished surfaces to that of the univalve-shell which bears the name of *porcellana;* and the shell itself derived its appellation from the curved or gibbous shape of its upper surface, which was thought to resemble the raised back of a *porcella*, or little hog—as we should say, pig. Other explanations of the origin of the name have been given, as, for example, from Count Portcellani, the French embassador, who was so much interested in ceramics; or by a corruption of *pour cent an* ("for a hundred years"), the Chinese claiming that the dough or paste was suffered to ferment for a hundred years before it was molded. But the first seems the most probable derivation.

We shall confine ourselves in this article to that class of ceramic wares known under the general name of porcelain, and to these mainly as produced in the United States.

The best writers on ceramics divide porcelain into two classes, "hard" and "soft"; or perhaps, more exactly, "natural" and "artificial." Both kinds are spoken of as translucent, though the translucence in the thicker wares is not very obvious, except as distinguishing it from the dull opacity of the wares having an earth-

en body. Natural or hard porcelain is made of pure kaolin, feldspar, and silica usually from the finest powdered quartz; no trace of iron or other metals is permitted in its composition. The glaze is of the same materials as the body, though in different proportions, and with the possible addition of a little lime or chalk to make it flow more readily. The finest and best qualities of this natural or hard porcelain owe their perfection and comparative indestructibleness to the methods of baking or firing. All glazed fictile wares require two bakings or burnings, and, if decorated after glazing, a third, to fuse and fix the metallic colors. In the production of hard porcelain, the first baking, by which the molded material is brought into the condition of biscuit-ware, is conducted in the upper story of the great kilns, where the heat is not so intense as in the lower story, and seldom reaches more than 1,800° Fahr., and in the case of the thinner wares is even less. The biscuit-ware thus produced is porous, somewhat friable, and can be turned perfectly smooth in a lathe. When ready for the glaze, which is an impalpable powder, kept suspended in a large tub or vat of water by constant stirring, it is plunged into it, and, from its porosity, absorbs the water, leaving the glaze in a fine, pasty powder on the surface. It is dried in the air, and then carefully packed in the seggars and placed in the lower story of the kiln, where it is subjected to a heat of from 4,500° to 5,000°, the later stages of the baking being carefully watched, and the temperature reduced at the point where the glazing begins to flow freely, and the body is so far vitrified that body and glaze form a homogeneous mass. The porcelain is suffered to cool gradually, and is not taken from the seggars under four or five days. When taken out, it is pure white, translucent, not readily frangible, and, when broken by a sharp blow, is found to be perfectly homogeneous in its composition, so that it is impossible to tell where the glaze ends and the body begins, and there is no danger of chipping, crazing, or cracking of the glaze, or absorption of grease or acids. The glazed porcelain and biscuit-wares of China, Japan, Dresden, Berlin, Sèvres, and Limoges, and of the Union Porcelain Works in Brooklyn, N. Y., belong to this class of natural or hard porcelain.

The soft or artificial porcelain differs from this in very many particulars. Miss Young, in her work on "The Ceramic Art," makes three subdivisions of artificial porcelain, some of them of great beauty, but all fragile and possessing qualities which, for most purposes, render them undesirable. The first subdivision has the body of alkaline paste—some kaolin, but, mingled with it and the feldspar, is very nearly an equal quantity of bone ground fine; the phosphoric acid from which, combining with the other ingredients, makes the paste alkaline, and, when baked, translucent but fragile. The glaze is also alkaline, and is composed of feldspar, carbonate of lime, borax, and white-lead. Sometimes silica and pearlash (bicarbonate of potassa) are added to the ingredients of the body, to make it still more alkaline. The alkaline glaze may be either colored or colorless. To the former class belong some of the alkaline wares of Persia, China, and of Deck and Haviland—to the latter those of Persia, China, St. Cloud, Tournay, Sèvres, and Haviland. The old Sèvres statuettes in biscuit-ware also belong to this class of alkaline pastes.

The second subdivision of artificial porcelains includes those having a body of calcareous or chalky paste in which chalk and lime take the place of bone, and are combined either with kaolin or feldspar. The glaze of these is boracic and colorless. This includes English china, the Minton, Worcester, and Copeland wares.

A third subdivision is Parian wares, not glazed. The paste is mainly feldspathic, but its exact composition is variable, and in some cases secret. The paste for Parian wares is stiffer and more solid before baking than that of the glazed wares generally, and is always cast in molds. The Parian figures and statuettes of Copeland, and those of Minton and the Worcester potteries, England, are included in this subdivision.

It is to be noticed that not only is there this radical difference in the composition, both of the body and glaze of the artificial or soft porcelain, from that of the natural or hard porcelain, but there is a difference, as marked and as important, in the methods of baking or burning them. All of the soft porcelain wares are baked at a very intense heat the first time. The temperature of the biscuit-wares is raised to 4,000° Fahr., or higher, and they are cooled gradually for several days. The reasons assigned for this intense heat are various: where the body contains a large percentage of bone, the burning must be carried to a temperature high enough to destroy all traces of animal tissue in the bone, and reduce it to a pure phosphate of lime. When thus thoroughly burned, the body, though professedly infusible, is carried almost to the point of vitrification. In the case of Parian wares, they become so hard and dense that they can be rubbed, polished, or turned in the lathe, till they acquire a marble or ivory-like surface. With those wares which are to be glazed, there is the still more potent reason that the alkaline and boracic glazes will become vitrified at a much lower temperature than that to which the body has been subjected. This is still truer of all the plumbiferous or lead glazes, which, however, are not used to any considerable extent in the true soft porcelains, or *pâtes tendres*, of Europe.

When these wares are glazed, they are subjected to a heat varying from 800 to 1,200 Fahr., and the glaze flows over the wares, forming a

brilliant glass covering for it, but one not homogeneous with the body, and liable to crackle, craze, or chip off, on being subjected to a moderately high heat, or intense cold, the expansion and contraction of the body and glaze being different. For many purposes of fictile art, these wares are very beautiful; they may be made so thin and delicate, and the glazing so brilliant, that they will resemble the finest translucent and egg-shell porcelains of China and Japan, and when artistically decorated they have an exquisite effect; but they are very fragile, and, if exposed to great changes of temperature, their beauty is destroyed.

Below these in quality, and not meriting the name of porcelain, either natural or artificial, are the great variety of *faïences*, with the body earthen, of a white or colored clay (not kaolin or feldspar), and a transparent glaze, usually largely plumbiferous, though sometimes alkaline, which may be either colorless or colored. Still below these wares, having an earthen body with a non-vitrified break, are those which have an opaque glaze, or rather enamel, usually of some of the salts of tin, and either colored or colorless. To these two latter classes belong the Henri II faience, the Wedgwood-wares, and the Meakin, Cecil, Montereau, Palissy, and Nuremberg faiences, and Minton's majolica. These all have lead or stanniferous glazes.

The faiences of Persia, of China and Japan, and of Deck, have all a colorless alkaline glaze, while the Limoges faiences of Haviland, Bracquemond, and Chaplet, are colored, though still alkaline. The opaque earthen-body wares, with an opaque stanniferous glaze, include the Della Robbia, Rovigo, Fontana, Rouen, Moustiers, Nevers, Delft, Ulysses de Blois, and St. Clement wares, all of which have had in their day, and some of them still retain, a high reputation.

These faiences, Wedgwood, and Delft wares, only concern us in the present article from the development of porcelain manufacture from these lower grades of pottery wares, and especially in this country.

Porcelain, in the true meaning of the term, originated in China. There is conclusive evidence that it was manufactured there at least 1,800 years ago. From China it was introduced into Persia, Egypt, and Barbary, at a very early period, and into Japan from the thirteenth to the fifteenth century. It was introduced into Europe about the beginning of the sixteenth century. The artificial or soft porcelain, *pâte tendre*, was the first to be produced there. It is said that a Venetian potter made porcelain about 1520; but no specimens of it are now known. The first success of which there are substantial evidences was at Florence in 1580. In 1671 Dr. Dwight, of Fulham, England, made an independent discovery of the process, and manufactured it there. In 1695 M. Chicanneau made a similar independent discovery at St. Cloud, France. These and many other manufacturers in Europe made only soft porcelain, using white clay, bone, etc., for the body. Kaolin was as yet an unknown earth. About the year 1709 a bed of kaolin was accidentally discovered at or near the village of Aue, near Schneeberg, in Saxony.

John Frederick Böttger, or Böttcher, a chemist's assistant at Berlin, had fallen under the suspicion of the government as an alchemist, and, about 1706, took refuge in Saxony, under the protection of the Elector Augustus II. The

FIG. 1.

Elector questioned him, and, being satisfied, placed him in the laboratory of a chemist, who was endeavoring to discover the "Philosopher's Stone." Here Böttger surprised himself by producing something akin to Chinese porcelain; and the Elector gave him every facility for prosecuting his experiments to that end. He was established at first at Meissen, then at Königstein, and finally at Dresden. His first results were comparatively rude; then he succeeded in producing a reddish stone-ware, and afterward a dull-white porcelain. At this time, Hans Schnorr, a wealthy iron-founder, while riding near Schneeberg, noticed that his horse lifted his feet with great difficulty. On examination he found that he was passing through a bed of clay, which was very white and peculiarly adhesive. At that time hair-powder was in great demand, and was very dear. Herr Schnorr conceived the idea that this clay might be made profitable, as a cheap substitute for it. He tried the experiment, and was successful.

In due time, the new hair-powder came under the notice of Böttger. He found it was an earth, and at once tried it in his laboratory. It was kaolin, and he had discovered the material for making hard porcelain.

Kaolin of inferior quality was discovered at Alençon about 1760, and a hard porcelain made from it, which was not pure in color. In 1765 the wife of a surgeon found a bed of

Fig. 2.

a peculiarly soft earth, of remarkable whiteness, near St. Yrieix. She was poor and economical, and thought, from its soft, oily feel, that it might answer all the purposes of soap. Her husband sent a sample to a chemist, and it was soon decided to be kaolin. The manufacture of hard porcelain was begun at Sèvres in 1769, and both the kaolin and petuntse (quartz and feldspar) were supplied from the quarries of St. Yrieix. Sixty years later, in 1825, the surgeon's widow, Madame Darnet, who had made this great discovery, and whose life had been spent in poverty, received a small pension from Louis XVIII. There are porcelain factories elsewhere in France, but those of Sèvres and Limoges still retain the pre-eminence they have held so long. Most of the pieces produced at these great establishments are decorated. Artificial porcelain is not now made extensively in France, but in its place, Palissy, and, in our own time, Haviland, at Limoges, have by their genius raised *faïence*, a ware of inferior material, to a place beside the finest of natural porcelain. This has been accomplished by the careful working of their material, the beauty and grace of the designs, and the high art manifested in the ornamentation, the decorations being generally beneath the glaze or enamel.

In Germany, hard porcelain is made at Meissen and Berlin, on a very extensive scale, and at Dresden and other points in smaller quantities. It is also produced, of excellent quality and great beauty, in Vienna.

Italy and most of the other European states, though they formerly made some hard porcelain, now content themselves either with *pâte tendre*, or oftener with *faïence* and *majolica*, some of their wares being of great beauty.

There were in the latter part of the last century two and possibly three places in England —Plymouth, Bristol, and perhaps Lowestoft— where hard porcelain was made for a few years. There are none now in the United Kingdom, though an exceptional ware from Belleek, Lough Erne, Fermanagh county, Ireland, approaches more nearly to the egg-shell china of the East than any other produced in the British Isles. The so-called china or porcelain of Great Britain is either artificial porcelain, in which bone largely predominates, or wares of cheaper white or colored clays, mixed with bone, known there as granite, Wedgwood, Staffordshire, etc., which in their finer specimens and tasteful decoration belong to the class known as *faïence* on the Continent.

In this country the first demand is for articles of domestic ware which, while in graceful forms, shall be plain and serviceable.

We have but one manufactory of hard porcelain, the Union Porcelain Works, at Greenpoint, Brooklyn, N. Y. These works only date from 1863, in their present development and ownership. There had been three or four previous attempts at its manufacture: one in Philadelphia, about 1770; one by William Ellis Tucker and his several partners, between 1820 and 1838, also in Philadelphia; one in Jersey City, and several small establishments for making porcelain hardware in Greenpoint, Long Island, between 1848 and 1862. These all failed, and Thomas C. Smith, an architect and builder, of New York city, was almost driven into the business, in 1863, by the failure of the last of them, to which he had loaned large sums. The disasters of the earlier years of the civil war had made them bankrupt, and Mr. Smith, their principal creditor, had gone to Europe for his health, when he received intelligence, at about the same time, of their fail-

Fig. 3.

ure and of the disastrous second battle of Bull Run, the darkest hour in the long struggle for the Union. In spite of this, he resolved to undertake the porcelain manufacture; and after a close examination of the Sèvres manufactory, and an equally careful investigation of the Staffordshire potteries, he decided that he would only make hard porcelain. His large fortune,

acquired by more than twenty years of arduous toil, was freely expended, and the result, after twenty years of hard work, has been a great success. After two years of experiment, and many disheartening failures, he succeeded, in 1865, in placing upon the market a plain white ware, while he continued his manufacture of articles of porcelain hardware, which at first brought him some profit, when everything else involved loss. In 1866 he began to decorate his wares, employing one English and one German artist. His first attempts in this line were not a pronounced success; but he avoided the too common error of copying foreign designs. All his designs and decorations are original, and this is true also, so far as possible, of the forms of his wares.

We give illustrations of one of the vases and a few of the plaques and plates made at these works. Fig. 1, "The Century Vase," was made for the Centennial Exposition. The engraving gives only one side, and but a partial view of its symbolic designs, which compass the century's history. Fig. 2 is a plate with the design of a windmill, painted by Mr. J. M. Falconer. Figs. 3 and 4 are more characteristic of the Greenpoint Porcelain Works, the designs being from actual flowers, and made

FIG. 4.

by their own artists. The Union Porcelain Works now cover about two acres, and each year new buildings and new kilns are required. They employ more than 200 hands, and pay very liberal wages. The other fine pottery-wares made in this country are not easily classified. In the number of its pottery establishments, of all sorts, Ohio exceeds any other State, reporting, in the census of 1880, 179 manufactories of earthen and stone ware;* but New Jersey, which had but 49 potteries, exceeded it in the value of its product by nearly $500,000. The best products of the Trenton (N. J.), Cincinnati and East Liverpool (O.), and Chelsea, East Boston, and Cambridge (Mass.) potteries demand some notice. Of these fifty or sixty establishments, the greater part manufacture what is known as white granite-ware, though some add to this cream-colored wares. This was an advance on their original product which was known as "C. C. ware." Several of the Trenton potteries have, within the past few years, made a still further advance, to what they call "opaque porcelain," which is really analogous to the English and French *faïence*. The body is of white clay, with some kaolin, and perhaps feldspar also, but is never a pure kaolin, feldspar, and quartz body. The glazing is claimed to be feldspathic, but containing some borax, and perhaps also lead. Following the example of the great masters of *faïence* in Europe, they have made the designs for these wares very beautiful, and have decorated them with great artistic skill. Of their class, they are very fine examples, but they are fragile, and, from the inherent fault of their baking and glazing, are not homogeneous, and are liable to chip and craze. This liability is of less consequence in fancy pieces, and those which are only designed as specimens of high art; but in household wares it is a very serious objection, and one which they are struggling to the best of their ability to overcome. One of the Trenton companies, the Etrurian Pottery Company, has devoted several of its kilns to the production of Parian wares, and what it calls ivory porcelain. The latter has a hard, semi-translucent body, and a clear, smooth, boracic glaze. The body probably contains some kaolin and feldspar, and perhaps also bone. It is an approach to the English *pâte tendre*, but does not reach it. The Parian is cast in molds, and has a hard surface, not glazed.

The Greenwood Pottery Company, of the same city, are manufacturing an article which they call "porcelain," or "American china." It is probably a near approach to the English and Viennese soft porcelain, but is not quite equal to it. They are now suffering from the intense competition of the Viennese manufacturers, who have thrown upon our markets a soft porcelain, which is of excellent quality and of fabulous cheapness.

PORK, PROHIBITION OF AMERICAN. Between 1879 and 1881 nearly all the governments of continental Europe restricted or completely interdicted the importation of American hog-meat. The first action of the kind was taken by the Italian Government. In consequence of alleged frequent discoveries of trichinæ in pork coming from Cincinnati, the sanitary department of that government issued an order on Feb. 20, 1879, prohibiting all pork imports from the United States. The prohibition was extended on May 6, 1879, to all foreign pork. About September, 1879, the Council General of Public Health in Hungary caused a similar interdict to be issued in that country. At the same time the Austrian and Hungarian governments consulted with regard to making the prohibition of American pork, on the ground of the prevalence of trichinæ

* By this term the Census-Office designates all kinds of pottery, from the rudest, unglazed flower-pot to the finest decorated porcelain vase.

in the United States, general throughout the Austro-Hungarian Empire. By an imperial decree, promulgated Jan. 25, 1880, Germany prohibited the importation of chopped pork and sausages. On Feb. 18, 1881, the French Government, on the ground of the detection of trichinæ in pork from the United States, issued an order, on the advice of the Consultative Committee of Public Health, forbidding imports of salt pork from America. The Governments of Greece and Turkey were actuated by the French report and prohibitory decree to adopt a like measure. The Austro-Hungarian authorities, which had the question under consideration since 1879, issued on March 10, 1881, the most stringent interdict yet adopted, prohibiting the importation of pig flesh, lard, sausages, and all pork products from the United States. The Swiss and Belgian governments were petitioned to enact prohibitory regulations for hygienic reasons, but they refrained from such action. An agitation was started in England against American pork early in 1880, caused by reports from British consuls with regard to the prevalence of hog-cholera in the United States, the slaughter of diseased animals, etc. The excitement led to no prohibitory legislation, but imports of live hogs and pork products were checked for a time.

The action of foreign governments in prohibiting American pork imports was based originally on sanitary grounds. The impression that trichinosis was exceptionally prevalent in the United States was at first general. The pork-producers in European countries, from interested commercial motives, put forth every effort to spread and confirm this belief. Reports from consular officers and American authorities regarding the prevalence of disease, the lack of official inspection in the pork-packing establishments, the dishonesty of packers, who were accused of killing diseased and maimed hogs, and even of packing those which died from natural causes, were assiduously circulated. The influence of this powerful class was exerted to induce the governments to adopt or maintain prohibitory measures. The question, therefore, soon assumed a protective commercial aspect, and the later decrees were framed in this sense, though not avowedly so. Thus the Government of Germany, on Feb. 21, 1883, issued an edict prohibiting all descriptions of swine-meat, including hams and bacon, which were exempted from the interdict of June 25, 1880. Canned hog products are likewise excluded, although in their preparation they are subjected for several hours to a temperature above the boiling-point. The restrictive measures interfere with the trade with other countries which use the German railways, since the transportation across German territory of pork in transit and in bond is also forbidden, although ample provisions exist for the security of such traffic. The authorities of the free ports of Hamburg and Bremen were unwilling to adopt the restrictive measures, but, after the issue of the last decree, they yielded to the pressure of the Imperial Government and adopted the same measure of total exclusion. By the action of the Board of Trade and Navigation of the city of Hamburg, no American pork is allowed to be landed, except, under strict supervision, for re-export, or as provisions for vessels lying in the harbor. The ordinance was enacted April 21, 1883.

The question of trichinosis in American pork was first raised in Germany in 1878, and a medical commission was appointed to investigate the subject and advise the Government whether it was necessary to subject imports of swine's meat to microscopical examination. The importation of American pork at that time was enormous. American hams were purchased in large quantities and subjected to a process of preparation, principally at Gütersloh, and then sold as Westphalian hams. The medical experts reported that twenty instances of trichinosis in American pork had been discovered, twelve in hams, at Bremen. The board advised microscopical inspection. The reason why the German Government directed its attention at that time to American pork was because it had recently perfected its system of official inspection of pork, as well as meats of other kinds, and other articles of food. The danger from trichinosis in that country is greater, and deaths from the disease more frequent, than elsewhere, because the habit of eating smoked hams and sausages in an uncooked state is common there. The absence of official inspection in the United States was complained of, and the sale of immense quantities of imported meat, which was subjected to no examination where it was slaughtered of the kind deemed necessary in Germany, and could not be easily or thoroughly examined there, was anomalous, and excited fear and misgiving. The growth and magnitude of the trade in American pork products was a subject of dread of a commercial character as well, and already affected prejudicially the interests of a class which has become more potent in German politics of late years. One of the features of Prince Bismarck's economical policy is the advancement of the interests of the landowning class at the expense of the other classes of the community. The great landed proprietors of Pomerania and Silesia have distilleries on their estates, and fatten hogs with the malt-mash. At first there was no thought of depriving the people of the towns of so common, cheap, and important an article of food as American pork; but the "sanitary" theory was taken up eagerly by the interested class; petitions came in from the agricultural societies by hundreds, and finally, as in other similar matters, the wishes of the agricultural class prevailed. Thus the importation of live cattle had been interdicted—from Russia on the ground of rinderpest, from Holland on that of pneumonia and the epizoötic, from Austria-Hungary on account of cases of rinderpest in

Hungary and Galicia. The acts were passed by the Bundesrath in virtue of powers conferred on it to adopt precautionary measures against the introduction or spread of disease. The Liberal parties, representing the industrial and commercial classes and the consumers of American pork, warmly opposed the restrictive measures. These would never have been passed by the Reichstag, but the latter has no power to rescind them, as the Bundesrath has authority to make sanitary regulations.

The United States Government, in view of the interdiction of American hog-flesh by European countries, proceeded to investigate the question of the alleged perniciousness of American pork. The Department of State ordered an inquiry in March, 1881, which was conducted by Michael Scanlon, Chief of the Bureau of Statistics of the State Department. The investigation covered trichinosis, hog-cholera, and other diseases of swine, methods of preparation for the market, etc. The asserted prevalence of hog-cholera was disproved, and it was shown that precautions were taken to prevent any but healthy animals from being brought to the packing-houses. The existence of trichinæ was detected in a number of instances, but the proportion was shown to be smaller than in other countries. The statistics of disease in the pork-consuming districts of the Western States, as compared with those of the rural districts of Central Europe, where none but native pork is consumed, show a much greater immunity from trichinosis. The report and the representations based upon it had no effect on the action of Germany and the other European countries. Upon the announcement, in February, 1883, that the Imperial Government was about to submit to the Legislature measures for the total exclusion of American pork, the American Government determined on a more exhaustive investigation of the subject, in the hope of averting such action, and announced to the German Government its intention to appoint a competent commission for the purpose, inviting it at the same time to send experts to inquire into the facts in relation to the supposed danger to health of American pork, either jointly with the commission or independently. The German Government declined the invitation, giving as the reason that in a matter of domestic sanitary legislation it could not enter into an arrangement which would imply an obligation to accept and be bound by a state of facts existing outside of its jurisdiction. The commission was appointed. It was composed of Prof. Charles F. Chandler, representing the New York Board of Trade; E. W. Blatchford, representing the Chicago Board of Trade; F. D. Curtis and Prof. D. E. Salmon, nominated by the Commissioner of Agriculture; and the Commissioner of Agriculture as chairman. The House of Representatives passed resolutions calling upon the President to furnish all documents and information relating to the restriction upon the importation of American hog products into Germany and France, declaring it to be the duty of the Government to act promptly and with energy, since those governments had shown, by declining to send agents to test the healthfulness of those products, that the pretended sanitary reasons were not genuine. Secretary Frelinghuysen, in a communication to the President in response to the request to lay before Congress the diplomatic history of the subject, recommended that no retaliatory or other legislative action should be taken pending the report of the commission, stating that when the Government should be in possession of the proofs that American pork was not injurious to health, it could call upon foreign governments to remove the restrictions, as incompatible with the provisions of commercial treaties.

One of the incidents of the controversy is a coldness in the diplomatic relations between Germany and the United States. Minister Sargent, in a confidential letter to the State Department at Washington, explained the protectionist motives of the pork edict. The letter was published with the other documents of the State Department, and reproduced in the "New York Handelszeitung," from which it was republished in the "North German Gazette," which is a personal organ of Prince Bismarck, with offensive comments based on the pretended supposition that Mr. Sargent contributed the letter to the newspaper. From that time the American minister was the object of continued attacks by the semi-official press, and his social and official relations in Berlin were made so unpleasant that in March, 1884, he resigned.

In France the objections to American pork were, as in Germany, founded on the absence of the safeguards against trichinosis prescribed by law for native pork products. The discussion passed through several phases. After the promulgation of the restrictive edict a strong opposition was aroused to the exclusion of these cheap food imports. There had been no case of trichinosis from eating American pork within a long period. Men of science pronounced the meat innocuous. Politicians exerted themselves in the interest of the consuming public to have the interdict recalled. On the other hand, the producing interest was as important and politically active as in Germany. It was demonstrated that the parasite is destroyed by cooking, and that therefore, since the custom of eating partly cooked pork was far less prevalent than in Germany, the danger was slight, even from trichinosed meat. Various schemes of microscopic examination were considered, but they were all condemned as troublesome and costly impediments to commerce and insufficient safeguards against trichinosis. At length, in November, 1883, the Government repealed the prohibition. The subject was then taken up and warmly discussed in the Chamber. M. Paul Bert repeated the sanitary arguments, and expressed a fear that the dis-

ease would be communicated to French hogs through eating rats infected by American pork. The Chamber passed by a decided majority a resolution in favor of the continuance of the prohibitive regulation. The Government, in pursuance of this resolution, restored the interdiction on Jan. 20, 1884. In 1883 Portugal followed the other Continental countries in excluding American pork. In Austria, Hungary, and Italy, the prohibition was maintained.

Trichinosis in American Swine.—The various expert examinations which have been made under the orders of the Government have revealed the fact that a greater or less percentage of American hogs are affected with trichinosis. Prof. Dettmers, who was commissioned by the Agricultural Department to conduct an investigation in Chicago, found among several hundred hogs about 4 per cent. infected, but supposed that researches on a large scale would reduce the proportion to 2 per cent. The percentage in European countries is said to be much higher. Microscopic examinations of a thorough character had not been made previously to the appointment of the last commission. The investigators consulted the statistics of mortality, and found that the disease was very rarely communicated to human beings in the United States. Dr. J. B. Hamilton reported that among 234,353 cases of disease treated by the Marine Hospital Service in ten years, there was not one of trichinosis. In Cincinnati no well-authenticated case of the malady has been known. In the District of Columbia no case is recorded. In Boston, New York, Philadelphia, and Baltimore, among 350,072 deaths during the past five years, six resulted from trichinæ—three in New York and three in Philadelphia. The number of live hogs received in those cities during that period was 14,701,236, nearly all of which were consumed there. The late Dr. W. C. W. Glazier prepared a report on the natural history of trichina and the pathology of trichinosis, which was transmitted to Congress by the Treasury Department in December, 1880. He showed that the disease existed in Germany and France in 1830, which was long before it was known in the United States, and before American hog products were exported to Europe. He and the more recent investigators express doubts as to whether any of the cases of trichinosis in France and Germany are traceable to the use of American pork. The conclusion is drawn from the fact that the more recent cases in those countries were caused by freshly-killed native pork, that the noxious power of the parasite is destroyed by the processes of salting, smoking, etc., and by the time which elapses before American pork reaches the consumer. Cases which lately occurred at Ermersleben were ascribed at first to American pork, but it was proved that they resulted from eating native pig-meat freshly slaughtered. The methods of official inspection can not be applied in rural districts to swine slaughtered for local consumption. All the experts agree that trichinosis can only result from uncooked meat. This is denied by German scientists, who assert that, in the ordinary processes of cooking, the temperature does not rise in the center of a large piece of meat to the point at which life is destroyed. The danger from trichinosis, it is suggested in the reports of the commissions, should so enlighten the German and other European peoples as to induce them to abandon the habit of eating raw pork. None of the reports recommend the introduction of a system of government inspection in the packing-houses.

Proposed Retaliatory Legislation.—It has been suggested, by legislators and by consular officers abroad, that the proper way to meet the restrictions placed on the importation of American pig-meat, is to place retaliatory restrictions on imports from the countries which refuse to receive this American product. It has been proposed to place discretionary power in the hands of the President to impose temporary restrictions to meet the case. It has been also suggested that restrictions could be made on similar sanitary grounds. The wines of France, which are notoriously sophisticated, would be almost entirely excluded by a regulation allowing none but pure, natural wine to pass the custom-house. The value of French wines imported in 1883 was $5,295,856.

Pork Production of the United States.—According to the census, the number of hogs on farms in the United States increased from 25,134,569 in 1870, to 47,681,700 in 1880. The net weight of hogs slaughtered annually is estimated by Mr. J. R. Dodge, statistician of the Agricultural Department, at 5,250,000,000 pounds, which is the equivalent of 4,725,000,000 pounds of cured meats and lard. The estimated number of hogs in the United States in 1882 was 48,270,086, valued at $291,951,221. Iowa stands first in the raising of hogs, the number on the farms of that State being returned as 5,107,445; Illinois coming next with 3,970,764; Missouri next, with 3,892,920; Indiana next, with 2,724,383; Ohio next, with 2,714,112; and then Tennessee, Kansas, Texas, and Kentucky, with nearly 2,000,000 each, equaled in weight and value of the product by Nebraska and Wisconsin.

The total number of swine in all countries is estimated at 91,964,000, of which number 47 per cent. are in the United States. The number in Germany in 1880 was returned as 7,324,000; in Austria-Hungary, 6,995,000; in France, 5,801,000.

In many States the quantity of pork produced is not sufficient for their own demand. It is estimated that 93 per cent. of the exports of pork and lard consist of the surplus products of Ohio, Michigan, Indiana, Illinois, Kentucky, Tennessee, Missouri, Kansas, Nebraska, Iowa, Minnesota, and Wisconsin.

The number of hogs packed for commercial purposes during the year ended March 1, 1883,

was 9,342,999, of which 4,222,780, or 45 per cent., were slaughtered and prepared at Chicago, 813,834 at Kansas City, 532,180 at St. Louis, 507,316 at Cincinnati, 405,510 at Milwaukee, 388,417 at Indianapolis, 327,163 at Cedar Rapids, and 218,885 at Cleveland.

The supply of pork depends on the corn-crop, and consequently varies greatly. The failure of the corn-crop in 1881 made pork very high in 1882. The supply of corn has been below the average since that year. The hostile foreign legislation has therefore not had the effect of bringing about low prices for swine products. The number of hogs slaughtered during the period of diminished corn supply and high prices for pork, reduced the stock considerably. When there is a superabundant corn-crop, the price of hogs rises, on account of the demand for stock purposes to use up the surplus corn, while immediately after a crop failure large numbers are killed off. The average value of hogs in 1884 is $5.57, against $6.75 in 1883.

Exports of American Pork Products.—The exportation of hog products from the United States is one of the most important branches of the export commerce, and far surpasses that of all other countries. In 1881, the year of greatest exportation, the value of pork exports was only exceeded by breadstuffs and cotton. The exports average about 20 per cent. of the annual product. The supply is exceedingly variable, while the home demand is firm and constant, and increases with the growth of population in the West. The foreign trade consequently, while showing a remarkable development, varies greatly from year to year. The quantities and values of the pork exports for the past fifteen years were each fiscal year as follow:

YEAR.	Bacon and hams.		Pork.		Lard.		Total value.
	Pounds.		Pounds.		Pounds.		
1869	49,228,165	$7,482,060	24,439,832	$3,422,928	41,587,545	$7,448,948	$18,843,936
1870	38,963,256	6,123,113	24,689,831	3,258,137	35,508,580	5,933,397	15,309,647
1871	71,446,554	8,126,683	39,250,750	4,302,820	80,087,297	10,563,020	22,992,023
1872	246,208,143	21,126,592	57,169,518	4,122,308	199,651,660	20,177,619	45,426,519
1873	395,881,737	35,022,187	64,147,461	5,007,085	230,534,207	21,245,815	61,274,987
1874	347,405,405	33,338,936	70,482,879	5,808,712	205,527,471	19,308,019	58,500,639
1875	250,236,549	28,612,613	56,152,831	5,671,495	166,869,893	22,900,522	57,184,630
1876	327,733,172	39,664,456	54,195,118	5,744,022	168,405,889	22,429,485	67,837,963
1877	460,057,146	49,512,412	69,671,594	6,296,414	234,741,238	25,562,665	81,371,491
1878	592,814,351	51,752,063	71,389,255	4,918,657	342,766,254	30,022,133	86,687,858
1879	782,249,576	51,074,438	84,401,676	4,807,568	326,656,686	22,856,673	78,738,674
1880	759,778,109	50,987,623	95,949,780	5,930,252	374,979,286	27,920,367	84,838,242
1881	746,944,545	61,161,205	107,928,086	8,272,285	378,142,496	35,226,575	104,660,065
1882	468,026,640	46,675,774	80,447,436	7,201,270	250,367,740	28,975,902	82,852,946
1883	340,258,670	38,155,952	62,116,302	6,192,268	224,718,474	26,618,048	70,966,268

The average prices of mess-pork per barrel, and lard per 100 pounds, at Chicago, were for the past six calendar years as follow:

YEAR.	Pork.	Lard.
1878	$9 00	$6 75½
1879	9 54	6 16¾
1880	13 06	7 40½
1881	16 47½	10 88¾
1882	19 42	11 47
1883	15 14½	9 16¾

The percentage which the exports of pork products constituted of the total quantity packed for commercial purposes in the West, not including the hogs slaughtered on farms, in villages, and by city butchers for local consumption, was for the years ending October 31st, from 1878 to 1883 inclusive, as follow:

YEAR.	Pork, bacon, and hams.	Lard.	Total pork product.
1878	50·80	94·67	59·87
1879	54·90	80·86	60·40
1880	56·15	97·55	62·12
1881	51·19	88·55	57·64
1882	37·52	77·88	45·84
1883	34·80	79·32	....

In the exports are included those manufactured in Eastern cities, in the product only the out-turn of the Western packing-houses. From the above figures it is evident that the pork-packing industry of the West is dependent on the preservation of the foreign trade, and that the maintenance of remunerative prices in years of abundant production, and to a considerable extent the success of hog-growers, depend on the same condition.

The value of the exports of hog products to the principal foreign countries in the years ending June 30, 1881, 1882, and 1883, was as follows:

COUNTRIES.	1881.	1882.	1883.
	Dollars.	Dollars.	Dollars.
Great Britain and Ireland	59,128,087	53,718,386	40,991,812
Germany	11,282,657	6,691,256	6,444,450
British North American possessions	4,284,044	4,898,228	5,929,612
France	10,554,703	4,168,551	3,768,026
Cuba	3,134,431	2,231,996	3,188,297
Belgium	7,860,483	4,226,755	3,065,423
Denmark	1,484,211	915,608	1,328,955
Netherlands	1,404,486	770,348	848,383
Sweden and Norway	561,719	.....	567,278
All other	5,015,244	5,336,891	4,864,029
Total	104,660,065	82,852,946	70,966,268

The largest exports of bacon are to Great Britain, amounting to over $38,000,000 in 1881 and 1882 and nearly $27,000,000 in 1883. The exports to Germany amounted to $2,982,852 in 1881, then fell off in consequence of the high prices to $295,856 in 1882, and rose again, partly stimulated by the prospective exclusion, to $1,374,432. These figures do not take account

of the considerable proportion of the German imports of pork products which are brought by way of Antwerp. The Belgian imports, in which these are included, are given as $4,583,807 in 1881, $1,696,150 in 1882, and $1,289,123 in 1883. The largest exportation of hams is also to Great Britain, amounting to $5,853,920 in 1881, $3,516,799 in 1882, and $4,670,603 in 1883. Cuba and the other West India islands and countries of South America, with British North America, take most of the remaining ham exports, as well as a large portion of the exports of bacon. The value of the hams exported to Germany is given as $172,655 in 1881, $44,024 in 1882, and $94,851 in 1883; of the exports to Belgium as $348,348 in 1881, $83,472 in 1882, and $59,384 in 1883. The exports of salt pork are also mainly to Great Britain, Canada, and tropical American countries. Lard has not been interdicted in any country. The exports to Great Britain in 1883 amounted to $7,941,529; to Germany, $4,867,-142; to France, $3,727,926; to Cuba, $2,471,-774; to Belgium, $1,723,355; to British North America, $1,444,177. The exports of bacon and hams to France and Germany were very large and were increasing before the trade was interrupted by their inhibition. The effect of the restriction was to arrest almost entirely the exportation of bacon and hams to France, which decreased in value from $4,855,932 in 1881 to $445,719 in 1882, and $29,246 in 1883. The falling off in the value of lard exported to France, showing the natural effect of the diminution of the supply, was from $5,567,030 in 1881, to $3,699,876 in 1882, and $3,727,926 in 1883. The value of the exports of bacon, hams, and pork for each of the fiscal years from 1869 to 1883 inclusive, to France and Germany, showing the growth of the trade and the effect of the restrictive measures, was as follows:

YEAR.	France.	Germany.
1869	$31,759	$306,528
1870	7,142	177,071
1871	267,804	921,862
1872	1,150,737	1,708,576
1873	1,982,604	5,096,884
1874	985,480	3,071,738
1875	454,717	2,458,222
1876	435,505	2,058,137
1877	2,056,380	2,404,784
1878	4,203,991	2,251,169
1879	3,388,372	2,103,993
1880	3,953,259	1,865,858
1881	4,987,678	3,263,725
1882	468,675	482,426
1883	40,100	1,577,308

PORTER, FITZ-JOHN, CASE OF. See page 236.

PORTO RICO, an island of the West Indies, a possession of Spain. It is about 100 miles long from east to west, and 40 from north to south; area, 3,596 square miles. The highest peak in the island is 3,678 feet. In 1883 the census showed a population of 731,648; 369.054 being males and 362,594 females. The island was a penal colony in the last century, and the descendants of convicts have settled on the mountain plateau and fertile savannas, forming a hardy, laborious population of agriculturists called "Jibaros," whose industry facilitated the extinction of slavery ten years ago. The number of slaves was then about 60,000, and of the colored population about 75,000.

Under the present liberal policy the island can, with its fertile soil and its favorable geographical position, hardly fail to advance morally and materially. At the Geographical Congress which met at Madrid, in 1883, a member, Mr. Ricart, drew the attention of his colleagues to the importance of the Mona passage between Porto Rico and St. Domingo, in connection with the future Panama Canal, recommending the Government to extend to St. John's, Porto Rico, the capital, with an excellent harbor, all sorts of franchises, fortify the island of Mona, and build on it a lighthouse and telegraph station.

The most populous cities are: Ponce, a port on the south coast, with 37,545 inhabitants; San German, in the interior, 30,146; Mayaguez, a port on the west coast, 26,446; Arecibo, a port on the north coast, 25,754; Utuado, 24,912; St. John's or San Juan, fortified, on the north coast, 23,414; and Yauco, 22,720.

The Captain-General of Porto Rico is the Marquis Don M. de la Vega de Inclan. The American Consul at St. John's is E. Conroy.

Finance.—The budget of the colony, for the fiscal year 1883–'84, estimated the income and outlay as follows:

REVENUE.

Taxes	$611,956
Custom-houses	2,699,020
Monopolies	253,700
Income from state property	36,000
Sundry items	232,100
Total	$3,862,776

EXPENDITURE.

General outlays	$1,155,931
Department of Justice	270,558
" War	1,212,943
" Finance	298,169
" the Navy	74,996
" Administration	553,415
" Public Works	382,940
Total	$3,938,547

The Minister of the Colonies proposed in 1883 that the treasury notes issued to indemnify planters for the loss of their slaves through emancipation, be converted into bonds to be gradually extinguished at long intervals through the operation of a sinking fund; that the municipal taxes on real estate, and the rural taxes on farms and plantations, be reduced; that the floating debt be kept within a certain limit, the greatest economy observed, and monetary circulation reformed. The home Government, by decree of July 5, 1883, Article VIII, made provisions for the conversion of the treasury notes above alluded to, under authority from the Cortes, the same law ordering the enlargement of the capital, St. John's.

Education.—Under the provisions of a decree issued by the home Government, Aug. 9, 1882, the budget of the island is in future to embrace

the disbursement of the annual amount necessary to defray the support of a professional school, which will be opened in the capital.

Soil.—The soil of Porto Rico is exceedingly fertile, and more sugar to the acre can be produced there than in most West India islands. The climate, though warm, is healthful, but there is an occasional hurricane, like the one of Sept. 7, 1883, which caused great devastation and extensive inundations.

Telegraphs.—The total length of telegraph lines in 1880 was 473 miles.

The Ponce Exhibition.—On Dec. 1, 1883, an agricultural and industrial exhibition was opened at Ponce, a most valuable display being made, especially of everything relating to the culture and manufacture of tobacco. American producers and manufacturers were largely represented at the show.

A Central Sugar-House.—On May 4, 1883, a meeting was held of shareholders in a new central sugar-house, to be founded in the fertile Vega de Yabucoa. The system to which preference has been given for the extraction of sugar is that of Fowler. The estimate of cost is $325,407; estimate of gross proceeds, $478,530. From the latter amount the cost of cane will have to be deducted and credited to the agricultural department of the company, $204,750, and the cost of working the cane in the mill and reducing it to sugar, $69,570, together $274,320. This would leave net proceeds of one crop's operations of the sugar-house to the amount of $204,210. Deducting finally from these proceeds the interest on capital and salaries to manager, engineer, clerks, etc., $58,805, there would remain $145,405, equal to about 65 per cent. on the capital of $225,000 set aside for the starting of the mill.

Commercial Treaty.—Under date of Jan. 4, 1884, it was telegraphed from Madrid that a commercial arrangement would soon be concluded between Spain and the United States, by which Spain would agree to apply the so-called "thirty-column" tariff to imports from America into Cuba and Porto Rico, which would be tantamount to the suppression of the flag and differential duties. Spain would also agree to abrogate the special duties on live fish into Cuba in foreign bottoms, and to suppress the consular and tonnage dues on vessels leaving the United States for Cuba or Porto Rico. The United States would abolish the 10 per cent. ad valorem duties on imports from Cuba and Porto Rico under the Spanish flag.

The closing stipulation of the agreement contains a passage much more important than the immediate reductions. It is thus summarized by the State Department: "Both governments bind themselves to begin at once negotiations for the conclusion of a complete treaty of commerce and navigation between the United States and Cuba and Porto Rico."

Under the provisions of the arrangement we have referred to, the changes in the duties levied upon American products imported into these islands are as follow, the quantity to which the duty applies being in each case 112 pounds, excepting flour, where the quantity is 220 pounds, and rough white-pine lumber, where the quantity is 1,000 superficial feet: Apples, old duty, $1.46, new, $1.18; bacon, old, $3.82, new, $2.82; beans, old, $1.12, new, 82 cents; butter, old, $6.65, new, $5.19; codfish, old, $1.09, new, 81 cents; calico, old, $21.21, new, $15.92; cotton duck, old, $12.31, new, $9.10; flour, old, $5.51, new, $4.69; lard, old, $4.44, new, $3.32; petroleum, old, $2.91, new, $2.18; potatoes, old, 64 cents, new, 45; hams, old, $3.82; new, $2.82; rice, old, $1.91, new, $1.45; straw paper, old, $1.12, new, 80 cents; rough white-pine lumber, old, $6.65, new, $5.19. The duties thus designated as new are those which for upward of 20 years have been imposed upon these goods imported into Cuba or Porto Rico in Spanish bottoms.

Port Regulations.—A short time before the home Government adopted a liberal policy, the local authority in Porto Rico acted in a spirit precisely the reverse, and on Nov. 11, 1883, a decree went into effect that vessels arriving shall pay $1.25 per 1,000 kilos, gross weight, on all cargo landed (instead of $1 as formerly), and $1 per 1,000 kilos on all cargo loaded outward, whether vessel arrives with cargo or in ballast, which is a new tax, and is equal to about 7 cents per 100 pounds on a cargo of sugar. For a number of years past the charges in Porto Rico have been moderate, but this makes them more than they are in Cuba.

Commerce.—The peninsular and foreign trade movement in Porto Rico in the years 1881 and 1882 is given as follows:

	Import.	Export.
1881	$12,027,648	$12,980,037
1882	14,815,504	16,582,284

The American trade with Porto Rico is shown in the following table:

FISCAL YEAR.	Import from Porto Rico into the United States.	Domestic export from the United States to Porto Rico.
1880	$5,443,886	$1,969,284
1881	3,860,199	1,712,782
1882	5,716,874	1,838,214
1883	5,477,498	2,116,499

The chief articles imported into the United States in 1883 were: sugar, 83,940,670 pounds; and molasses, 5,448,321 gallons.

In 1882 there entered Porto Rican ports 1,586 vessels; aggregate tonnage, 1,114,340; sailed, 1,502 vessels; aggregate tonnage, 992,687.

PORTUGAL, a monarchy in southern Europe. The fundamental law is the charter granted in 1826 by Dom Pedro IV, and revised in 1852 by the Cortes. The representative assembly consists of two chambers, that of the Peers, who are nominated for life by the King and number 150, and the Chamber of Deputies, which has consisted since 1878 of 149 mem-

bers. The latter are elected directly by all citizens possessing a net income of $110. The Cortes assembles at stated periods without the intervention of the sovereign, who has no veto on a law passed again after he has sent it back unsigned. New elections are held every four years. All laws relating to the army and to general taxation must originate in the Chamber of Deputies.

The reigning King is Luis I, born Oct. 31, 1838, the son of Queen Maria II and of Prince Ferdinand of Saxe-Coburg. He succeeded his brother, Pedro V, Nov. 11, 1861.

The Cabinet resigned in October, and was reconstituted on the 23d of that month as follows: Senhor Fontes Pereira de Mello, Premier and Minister of War; Senhor Barjova Freitas, Minister of the Interior, *vice* Senhor Ribeiro da Fonseca; Senhor Barboza Bucage, Minister of Foreign Affairs, *vice* Senhor Serpa Pimentel; Senhor Lopo-Vaz, Minister of Justice, *vice* Dr. Marques de Villena; Senhor Hintz Ribeiro, Minister of Finance, *vice* Senhor de Fontes Pereira de Mello; Senhor Penhiro Chagas, Minister of Marine, *vice* Senhor de Mello Gouvea; Senhor Aguiar, Minister of Public Works, *vice* Senhor Hintz Ribeiro.

Area and Population.—The area of continental Portugal, which is divided into six provinces, is 36,510 square miles. The population at the census of Jan. 1, 1878, was 4,160,315. The Azores are 966 square miles in area, and have a population of 259,800; Madeira and Porto Santo, with an area of 317 square miles, contain 130,584 inhabitants. The total population of the kingdom was 4,550,699, of which number 2,175,829 were of the male and 2,374,870 of the female sex. The only cities containing more than 100,000 inhabitants were Lisbon, with 246,343, including the suburbs of Belem (30,029 inhabitants) and Olivaes (28,910 inhabitants); and Oporto, with a population of 105,-838. The number of marriages in 1875 was 33,095; births, 153,597; deaths, 106,673.

Colonies.—The transmarine possessions of Portugal in Africa and Asia have an aggregate area of 709,469 square miles and an estimated population of 3,306,247 inhabitants. The Cape Verd islands contain 1,650 square miles, and had in 1879 a population of 99,317. Stations in Senegambia, Bissão, and other parts of Guinea were reported in 1873 as covering 26 square miles and having a population of 9,282. Prince's and St. Thomas's islands are 454 miles in extent, and had in 1878–'79 a population of 20,-931. Ajuda is 13 miles in extent, with 4,500 inhabitants. The possessions in Asia are the colonies in India of Goa, Salsette, Bardes, etc., which were reported in 1881 as embracing 1,447 square miles, and containing 419,993 inhabitants, and of Damao and the isle of Diu, 158 square miles in extent and containing 61,-474 inhabitants; Macao and dependencies, covering 28 square miles and containing 68,086 inhabitants; and Timor and Cambing, containing 5,527 square miles and about 300,000 inhabitants. The principal possessions of Portugal in extent are in equatorial and southern Africa. The area of the dominions on the east coast of Angola, Ambriz, Benguela, and Mossamedes is given as 312,509 square miles, and the subject population as about 2,000,000; the area of Mozambique and dependency, on the other side of the continent, as 382,683 square miles, and the population as 350,000. The dependence of Mozambique on the mother-country is very incomplete. The natives treat their white rulers with slight respect. When one of the frequent uprisings takes place, the Portuguese retire within the fortifications and wait until the disturbance subsides. The expenditures for the government and development of the colony are not covered by the receipts, although a duty of from 10 to 30 per cent., which it is intended to increase to from 30 to 50 per cent., is collected on imports, and an average duty of 2 per cent. on exports, besides taxes on sales, an income-tax of 10 per cent., municipal taxes, etc. The complex and oppressive burdens are a hindrance to commerce. The chief exports are millet, gum-elastic, ivory in small quantities, wax, and tortoise-shell. All these come from the continent. The island of Mozambique produces nothing but bread-fruit trees and a few palms. The imports consist of cotton goods, pearls, brass utensils, powder, fire-arms, etc.

Commerce.—The total imports in 1882 were of the value of 24,875,000 milreis, against 23,-601,000 in 1881, and 34,948,000 in 1880; total exports, 17,488,000 milreis in 1882, 13,588,000 in 1881, and 24,716,000 in 1880.

The commercial intercourse with the principal foreign countries was as follows:

COUNTRIES.	Imports.	Exports.
	Milreis.	Milreis.
Great Britain	15,223,000	10,752,000
Brazil	2,140,000	5,964,000
France	4,140,000	1,474,000
United States	5,293,000	700,000
Spain	2,085,000	1,778,000
Germany	1,860,000	1,132,000
Sweden and Norway	1,212,000	447,000
Portuguese possessions	666,000	751,000
Other countries	2,314,000	1,687,000
Total	34,948,000	24,716,000

The principal classes of merchandise in 1880 were of the following values:

COMMODITIES.	Imports.	Exports.
	Milreis.	Milreis.
Cereals	6,000,000	490,000
Fruits, etc	879,000	2,856,000
Colonial produce	3,258,000	799,000
Wines, etc	473,000	2,693,000
Animals and animal products	4,511,000	3,440,000
Mineral products	2,192,000	2,104,000
Metals	4,544,000	345,000
Hides, leather, etc	2,337,000	415,000
Timber, etc	1,057,000	3,165,000
Glass and pottery	312,000	27,000
Textile materials and manufactures	5,738,000	304,000
Miscellaneous manufactures	3,249,000	659,000
Drugs, etc	397,000	419,000
Total	34,948,000	24,716,000

The exports of wine to Great Britain constitute about one fifth of the total quantity imported into that country.

The movement of shipping in 1880 was as follows: sail tonnage entered, 7,331,000 cubic metres, of which 2,258,000 cubic metres were under foreign colors; cleared, 7,637,000 cubic metres; steam tonnage entered, 3,278,000 cubic metres, of which 2,407,000 cubic metres were under foreign colors; cleared, 3,110,000 cubic metres. The Portuguese tonnage entered included sailing-vessels of 247,000, and steamers of 778,000 metric tons in the coasting trade.

The merchant marine in 1881 consisted of 41 steamers, of 14,092 cubic metres, and 412 sailing-vessels, of 88,829 cubic metres.

The length of railroads in operation in 1882 was 1,673 kilometres, or 1,045 miles. The length of telegraph lines at the beginning of 1881 was 4.369 kilometres, or 2,715 miles; length of wires, 10,889 kilometres, or 6,770 miles; number of telegrams dispatched in 1880, 1,121,384, of which 423,937 were domestic. The post-office forwarded 20,338,171 letters and 15,276,552 packets and newspapers in 1881.

Army and Navy.—The army is raised partly by conscription and partly by enlistment. The effective is fixed annually by the Cortes. It was nominally 78,200 on the war footing in 1882. The actual strength in that year was reported as 26,059 men under arms.

The navy in 1883 consisted of 31 steamers, with 94 guns, and 16 sailing-vessels. The only efficient vessels were the Vasco do Gama, an iron-clad ram with 10-inch plates and two 18-ton and three smaller guns, and two corvettes.

Finances.—The revenue for ten years has averaged $25,000,000, and the expenditure $28,750,000. The budget for 1882–'83 estimates the yield of the different sources of revenue as follows, in milreis (one milreis = $1.08):

SOURCES OF REVENUE.	Amount.
Land tax	3,152,000
Other direct taxes	2,914,000
Stamps and registry fees	3,075,700
Customs, excise, etc	15,210,770
Railroads, etc	2,578,234
Repayments, etc	1,104,678
Extraordinary receipts	1,618,000
Total	29,654,012

The expenditures are stated in the budget as follow:

BRANCHES OF EXPENDITURE.	Amount.
Domestic debt	7,137,866
Foreign debt	5,951,455
Ministry of Finance	5,768,870
" the Interior	2,161,149
" Worship and Justice	627,372
" War	4,599,960
" Marine and Colonies	1,663,721
" Foreign Affairs	308,436
" Public Works	2,727,084
Total ordinary expenditures	30,940,933
Extraordinary expenditures	4,335,278
Total	35,276,211

There has been no budget for thirty years without a deficit. The revenue during the same period increased about 60 per cent. The deficit in 1867–'68 was 5,811,560 milreis. It was reduced to 1,156,000 milreis in 1879–'80. The Minister of Finance in 1880 declared that there was no control over the public purse, that the balances shown in the budget for the previous six years had been fictitious, and that the appropriations had invariably been exceeded, sometimes without the authorization of a special law. During those years over £9,000,000 had been obtained by loans.

The public debt on June 30, 1881, amounted to 430,879,399 milreis, not including the old debt, of which 1,927,399 milreis remained to be converted in 1879, consisting mainly of paper currency. Of the new debt, 232,929,349 milreis represented the internal loans, bearing interest at 3 per cent. The foreign debt at that date consisted of sterling loans to the amount of £43,908,900, or 197,950,050 milreis. In 1882 a new loan of £5,189,000 was issued. There is also a large floating debt, estimated as high as £4,000,000. In 1882 there were defaults in the interest of the new debt amounting to 2,978,469 milreis on the internal, and 3,139,689 milreis on the external loans.

Political Situation.—The republican agitation in Spain excited in Portugal the chronic discontent and hostility to the King, to a degree which rendered the political situation critical and grave. The Progressist party accuse the King of repeated breaches of the Constitution in keeping the Conservatives in office. The Republican party in Portugal is exceedingly numerous and energetic. The Congo question was made a ground of attacks on the Fontes ministry by the Republicans and Radicals, as the Delagoa Bay negotiations were in 1881. The changes in the ministry in October, though attributed officially to differences of opinion in relation to the Lisbon municipal elections, were rather due to the general dissatisfaction. The new members of the Cabinet were more liberal in their tendencies than their predecessors.

A revolt of peasants occurred at Couero in October. It had its origin in religious fanaticism, and was only suppressed with difficulty by troops sent from Lisbon.

Sovereignty Rights over the Congo.—The Portuguese have shown an ambition in recent years to renew their ancient activity in Africa, and share in the labors and the fruits of the commercial development of the interior. Portugal's claims to the west coast between 5° 12′ and 8° south latitude are recognized in treaties with Great Britain and France. These limits include the mouth of the Congo. The activity of the French in these regions excited the jealousy of the Portuguese. When the French occupied Ponta Negra, the captain of the Portuguese war-vessel Bengo, stationed in those waters, protested, under the supposition that the annexed district was within the territory claimed by Portugal. He sent a dispatch home asking for re-enforcements. The feeling aroused in Portugal by the French annexation tendencies shown in these regions was allayed when the

English Government manifested a disposition to oppose the establishment of French power over the Congo mouth. In November Chi Loango, as far as the river Luisa, which lies north of 5° 12′, was taken possession of by the Portuguese, with the object, as was said, of having a river boundary, which would clearly define the limits of the territory claimed by Portugal. The Luisa flows ten miles south of the new French station of Ponta Negra. The entire territory, from the Massibi river to Molembo, was subsequently taken possession of, in virtue of a treaty which was signed September 29th with the Cacongo chiefs.

POSTAGE. See page 185.

POTTER, Henry Codman, an American clergyman, born in Schenectady, N. Y., May 25, 1835. He is a son of Bishop Alonzo Potter, of Pennsylvania, and grandson of Rev. Dr. Nott, President of Union College. His education was obtained chiefly at the Episcopal Academy, Philadelphia, and on leaving this institution he entered upon mercantile life. Not long after he relinquished business, studied for the ministry under his father's direction, entered the Theological Seminary of Virginia, at Alexandria, and graduated therefrom in 1857. He received deacon's orders at his father's hands in St. Luke's Church, Philadelphia, May 27, 1857, and priest's orders in Trinity Church, Pittsburg, at the hands of Dr. Bowman (Assistant Bishop of Pennsylvania), Oct. 15, 1858. His first pastoral work was as rector of Christ Church, Greensburg, Pa. In May, 1859, he became rector of St. John's Church, Troy, N. Y. In 1862 he was elected rector of Christ Church, Cincinnati; in 1863 was elected President of Kenyon College, Ohio; and in the same year he was elected rector of St. Paul's Church, Albany, N. Y.—all of which he declined. But, after seven years' service in Troy, he accepted, in 1866, the place of assistant minister of Trinity Church, Boston, Mass. In May, 1868, he became rector of Grace Church, New York, which office he filled with singular success for fifteen years. In 1875 he was elected Bishop of Iowa, but declined. He received the degree of D. D. from Union College in 1865, and LL. D. from the same college in 1880. He was secretary of the House of Bishops from 1865 to 1883, and also for many years was one of the managers of the Board of Missions, in the domestic department.

In 1883, Bishop Horatio Potter having called for an assistant, the convention, which met in September of that year, acceded to his plea of age and infirmity, and with promptness and unanimity elected Dr. Henry C. Potter, the aged bishop's nephew, to the office of Assistant Bishop of New York. He was consecrated in Grace Church, Oct. 20, 1883, a very large number of bishops and clergy being present and taking part in the solemn services. By formal instruments, soon after executed, the bishop made over the entire charge and responsibility of the work of the diocese into the assistant's hands. The new bishop's cordial sympathy with clergy and laity and with every good work, and his signal success in conducting the affairs of a large and important parish in New York city, indicated a future of honor and usefulness to the Church.

Bishop Potter's published works include: "Sisterhoods and Deaconesses, at Home and Abroad: A History of their Rise and Growth in the Protestant Episcopal Church, together with Rules for their Organization and Government" (1872); "The Gates of the East: A Winter in Egypt and Syria" (1876); and "Sermons of the City" (1880).

PRESBYTERIANS. I. Presbyterian Church in the United States of America.—The following is a summary of the statistics of the (Northern) Presbyterian Church in the United States of America, as they were reported to the General Assembly in May, 1883; to which are added, for comparison, the statistics for 1881 (in which year the synods were consolidated) and 1882:

	1881.	1882.	1883.
Synods	38	28	28
Presbyteries	177	180	182
Candidates	622	626	673
Licentiates	301	301	292
Ministers	5,056	5,148	5,218
Elders	16,501	18,584	18,956
Deacons	4,596	5,648	5,576
Churches	5,598	5,744	5,858
Churches organized	90	182	165
Communicants	581,401	592,128	600,695
Added on examination	25,844	29,389	32,152
Baptisms of adults	8,174	9,678	10,897
Baptisms of infants	17,489	19,026	17,728
Members of Sunday-schools	633,564	654,051	663,765

The several boards and permanent committees reported to the General Assembly concerning their financial condition and the progress of their work, of which the following summaries give the principal facts:

CONTRIBUTIONS.	1881.	1882.	1883.
	Dollars.	Dollars.	Dollars.
For home missions	458,098	467,625	582,269
For foreign missions	475,626	465,219	501,578
For education	190,799	192,970	187,254
For publication	33,015	43,609	39,179
For church erection	156,281	189,620	150,391
For relief fund	63,454	66,022	75,249
For freedmen	69,097	70,832	84,012
For sustentation	21,570	20,697	21,275
For General Assembly	43,028	44,273	46,847
Congregational	6,332,579	6,862,640	7,139,904
Miscellaneous	817,744	929,910	683,444
Total	8,674,291	9,268,397	9,661,498

Board of Home Missions.—Receipts, $504,795, or $81,406 more than the receipts of the previous year. The report of the board calls attention to the growing importance of its work in the Eastern States, where, in consequence of the constant changes of population by the removal of old inhabitants, the influx of foreigners, and the starting of new kinds of industries and of new manufacturing centers, nearly as great a demand for missionaries exists as in frontier regions. Thirteen hundred and eighty-seven missionaries and 133 mission-

ary teachers had been under commission, and 136 churches and 279 Sunday-schools had been organized during the year. The whole number of church-members was 78,669, with a total of 125,977 in congregations, and the number of members in 1,777 Sunday-schools was 120,936. Special attention was given to the maintenance of schools in the Indian Territory, among the Indians in New Mexico and Arizona and in Alaska, among the Mexican populations in New Mexico and Southern California, and among the Mormons in Utah and Idaho. Six new colleges had been organized in Minnesota and Kansas, and the Territories.

Board of Education.—The receipts, $73,499, exceeded those of the previous year by $9,474, while the permanent fund had been increased by $10,000. Four hundred and eighty-six candidates had been aided in sums of $100 or $120 each; among them were thirty-five Germans, three Bulgarians, sixty-eight colored students, eleven Indians, one Spaniard, one Welshman, and one Hindoo.

Board of Publication.—Receipts, $281,124; expenditures, $252,442; amount of sales, $195,420. The publications included 443,750 copies of books and tracts, and 11,947,319 of periodicals and reports. The sum of $49,983 had been received, and $42,077 had been expended, for missionary work.

Board of Church Erection.—Receipts, $109,068. Appropriations of $104,594 had been made to 215 churches and missions, being an average of $486 to each church. A book of fifty-one designs for churches and chapels had been published.

Board of Relief.—Receipts, $105,566, besides $23,374 bequeathed to the permanent fund; amount of permanent fund, $300,410; number of beneficiaries, 486.

Board of Missions for Freedmen.—Receipts, $103,741; amount of Endowment and Permanent Funds, $14,120; number of missionaries and teachers, 197; number of churches under the care of the board, 173, of which four had been organized during the year; number of communicants, 12,823; number of Sunday-schools, 156, with 10,771 scholars. Nine hundred and sixty-nine persons had been added to the churches on examination, and 1,359 persons had been baptized. The board maintained 60 schools, with which were connected 124 teachers and 6,995 pupils. Five of the schools were of the grade of academies or above it, including a theological department, and returned 1,856 students.

Board of Foreign Missions.—Receipts, $656,237; expenditures, $669,620. The missions are among ten Indian tribes of the United States, in Mexico, Guatemala, the United States of Colombia, Brazil, Chili, West Africa, India, Siam (Laos), China, among the Chinese in California, and in Japan, Persia, and Syria. They returned in all 159 American ministers, 92 ordained and 133 licentiate native ministers, 286 American male and female and 585 native lay missionaries, 18,656 communicants, and 21,253 pupils in day and boarding schools.

The General Assembly of the Presbyterian Church in the United States of America met at Saratoga Springs, N. Y., May 17th. The Rev. E. F. Hatfield, D. D., was chosen moderator. Fraternal delegates from the Southern Church were received for the first time since that Church was organized during the excitement incident to the questions involved in the civil war. A final motion was passed in respect to the restoration of fraternal relations with the Southern Church by the adoption of the report of the committee to whom the subject had been referred, to the effect that "fraternal relations have been happily established between the two Assemblies on the basis of a withdrawal of all imputations which may have been made officially from either side against the Christian character of the other, and no further action is necessary."

A committee was appointed to meet a similar committee, should one be appointed by the Southern Assembly, to agree upon plans of comity and co-operation between the two bodies in regard to theological and collegiate education, missions among the freedmen, the occupation of territory, and other subjects on which questions may arise. The following report was adopted on the subject of the current rationalistic and scientific methods of examining and criticising the Scriptures:

The General Assembly feels constrained to express itself clearly and decidedly on the rationalistic treatment of the Holy Scriptures by Protestant teachers in Europe, whose works are introduced into our country and whose evil influence is felt in our Church. Our "Confession of Faith" (Chap. I, sec. 2), after giving the names of the books of the Old and New Testaments, adds, "All which are given by inspiration of God to be the rule of faith and life." The denial of the authenticity or truthfulness of the Holy Scriptures is a denial of their inspiration, and any teaching that suggests such denial should be not only carefully avoided but studiously repelled. The Assembly would not discourage the full use of all light in critical study, nor does it assume that any erroneous teaching is welcomed or offered within the bounds of the Church, but it would warn all pastors and teachers of the danger to young and inexperienced minds in the free use of crude theories and unproved speculations on the part of religious instructors, and would remind them of the paramount importance of sustaining in positive doctrine the authenticity, integrity, truthfulness, and inspiration of the Holy Scriptures against the unsanctified learning by which an unbelieving world through nominally Christian channels assaults the Church of God.

The Assembly would also remind the Presbyteries of their special responsibility as guardians of the faith, and that in view of the apprehensions excited throughout the Church by the rationalistic handling of the word of God, it is incumbent upon them to see to it that the appropriate constitutional action be taken, if at any time it should become manifest that any minister of our Church was promulgating theories of dangerous tendency or contra-confessional doctrine concerning the Holy Scriptures.

A new board was established, to have in charge the interests of higher education as connected with the Presbyterian Church, and to be called "the Presbyterian Board of Aid for

Colleges and Academies." Its functions were defined to be, to obtain annual offerings from the churches for the cause; to co-operate with local agencies in determining sites for new institutions; to decide what institutions shall be aided; to assign to such institutions special fields open to their appeals; and to discourage all independent appeals to the Church at large. Every institution hereafter established must, as a condition of receiving aid from the board, either be organically connected with the Church, or must, by charter provision, perpetually have two thirds of its Board of Control members of the Presbyterian Church; in the case of institutions already established and not covered by these stated provisions, appropriations for endowments must be so made that the funds shall revert to the board whenever those institutions shall pass from Presbyterian control. A report on the revision of the "Book of Discipline" was considered, the proposed amendments being acted upon in detail, and the result of the labors of the Assembly on the subject was referred to a committee to be put into shape. Among the amendments adopted were provisions that ministers, elders, and deacons suspended for immoral conduct shall not be restored, and that withdrawing members joining another church shall be dropped from the rolls without action, unless charges have been presented and then prosecuted. A declaration was adopted that the extermination of the traffic in intoxicating liquors by the "power of the Christian conscience, public opinion, and the strong arm of the law," would be rejoiced over by the Assembly. A committee was appointed to consider the question of a permanent place of meeting, and the erection of a hall for the General Assembly.

II. Presbyterian Church in the United States.—The summary of the statistics of the (Southern) Presbyterian Church in the United States as presented to the General Assembly in May, is as follows: Synods, 13; presbyteries, 67; ministers, 1,070; candidates, 199; licentiates, 45; churches, 2,040; churches organized, 46; ruling elders, 6,290; deacons, 4,220; communicants, 127,017; added on examination, 6,638; adults baptized, 1,719; infants baptized, 4,485; baptized non-communicants, 33,474; teachers in Sunday-schools, 7,706; pupils in Sunday-schools, 78,725; contributions for all purposes, $1,269,416.

The executive committees of the various missionary and benevolent enterprises made reports to the General Assembly concerning the condition of the trusts under their care, of which the condensed summaries are as follow: The receipts for publication during the financial year had been $8,534. The total receipts for home missions had been $67,278, or $13,462 more than the receipts of the previous year. The sum of $23,846 had been paid from the sustentation fund; 178 ministers, serving between 400 and 500 churches, had been aided in support; and 36 churches had been aided in obtaining houses of worship, to the amount of $5,550. Appropriations of $15,190 had been made in the support of 20 evangelists; while reports from various presbyteries (in no case including the whole number aided) showed that through the evangelists 52 churches had been organized, 940 members had been received into the Church, 317 destitute points had been supplied, and 21 Sunday-schools had been organized. Appropriations had been made from the colored evangelistic fund for 11 ministers and two church buildings; while the Presbyteries co-operating with the fund reported as under their care 12 ministers and licentiates, 28 churches, 12 candidates, and 23 Sunday-schools. Twenty-three ministers and the families of 76 deceased ministers had been aided by the invalid fund, from appropriations amounting to $9,195. Payments of $3,700 had been made from the relief fund to the families of 13 deceased ministers. The receipts of the Tuscaloosa Institute for the training of colored ministers had been $3,173.

The General Assembly of the Presbyterian Church in the United States met at Lexington, Ky., May 17th. The Rev. Theodoric Prior, D. D., of East Hanover, Va., was chosen moderator. The most important business transacted by the body was that relative to the restoration of fraternal relations with the Northern Presbyterian Church, the subject being taken up where it had been left by the General Assemblies of the two bodies in the previous year, and carried out to a conclusion. Delegates were in attendance from the Northern General Assembly, bringing a fraternal letter, in which were the words:

> You may not have said very much that was offensive to those on our side; you may have thought, you probably did think, many hard things. We did not ask you to regret or withdraw anything. You studied to do those things that make only for peace. You, of your own accord, expressed regret for and withdrawal of the offensive word. In your magnanimity you got the start of us and did this noble thing.

The fraternal delegates were afterward given an official reception in their own persons by the Assembly, when addresses appropriate to the occasion were delivered by them and by the moderator. Afterward a dispatch was received from the Northern General Assembly reporting that it had resolved, upon the recommendation of its committee to whom the subject had been referred, that "fraternal relations having been happily established between the two Assemblies on the basis of the withdrawal of all imputations officially made from either side against the Christian character of the other, no further action of this Assembly is necessary." The final action of the Assembly upon the subject took the shape of a resolution directing that—

> The usual method of correspondence by letter between this General Assembly and other ecclesiastical bodies shall hereafter include the General Synod of the Reformed Church in America and the General Assembly of the Presbyterian Church in the United

States of America; with the exception, however, that delegates be appointed by this Assembly to these bodies at their next ensuing sessions in 1883 and 1884 respectively, to convey our most cordial Christian fraternal salutations; these delegates being instructed to state to them this method of correspondence hereafter by letter as adopted by this body, with the hope that it may meet with their co-operation; and that the special attention of the presbyteries be called to this action of the General Assembly for an expression of their opinion on the mode of correspondence for the future.

An overture was presented from the Presbytery of Upper Missouri, asking the Assembly to appoint a committee to confer with a like committee of the Northern Assembly "to bring about closer relations between the two branches of the Church, and, if practicable, open the way for organic union, or for such a division of the Presbyterian field as may place it under several Provincial Assemblies." The Assembly, by a vote of 102 to 32, declared it inexpedient to appoint such a committee. A committee appointed by the previous General Assembly to inquire into the expediency of removing some of the higher qualifications required as tests of the competency of candidates for the ministry, including acquaintance with the Greek and Hebrew languages, made a report adverse to any lowering of the standard. The whole subject was considered by the Assembly in debate, and its decision was embodied in a resolution that—

The proposed change is not necessary even to effect the object contemplated, i. e., to open the way to the ministry for men, otherwise qualified, who have not pursued the ordinary course of study preparatory thereto; inasmuch as this is a point which, so far as it should be an open question, is left to the discretion and decision of the presbytery. The presbyteries already possess the constitutional powers in question, both for licensure and for ordination.

The previous General Assembly having invited expressions of opinion from the presbyteries upon overtures seeking the removal from the Confession of Faith of the clauses prohibiting marriage with a deceased wife's sister, answers were received from fifty-five presbyteries, forty-three of which, or more than two thirds of the presbyteries in the Church, had expressed themselves in favor of the change. The Assembly decided to take the requisite constitutional steps for having the prohibitory clauses stricken out. A memorial asking the Assembly to organize the colored churches into a General Assembly was answered in the negative, on the ground that the matter was premature.

III. United Presbyterian Church in North America.—The following is a summary of the statistical reports of this Church as presented to the General Assembly in May: Number of synods, 9; of presbyteries, 60; of ministers, 730, of whom 525 were pastors and 205 without charge; of licentiates, 43; of theological students, 52; of congregations, 839; of members, 85,443; of baptisms, 707 of adults and 3,599 of infants; of Sunday-schools, 823, with 8,643 officers and teachers, and 77,300 pupils.

The Board of Publication reported to the General Assembly that its receipts for the year had been $56,760, and its expenditures $54,-663, and that its assets were valued at $107,-894. By the action of the General Assembly, this board was given the appointment of the Sunday-school Committee and full charge of the Sunday-school literature of the Church.

The Board of Education had received $5,186, and returned $18,009 of assets. It had given assistance during the year to 14 students.

The Board of Ministerial Relief had received $6,460, and had disbursed to beneficiaries, $2,900; and returned an endowment fund of $30,000. It had 24 beneficiaries receiving quarterly aid.

The receipts of the Board of Freedmen's Missions—$16,767—had been sufficient to meet all the expenses of its work during the year, and to pay $4,375 of its indebtedness. It still owed $6,500. The board returned an aggregate enrollment of 1,197 pupils in all its schools and 1,200 in its Sunday-schools. Seventy-five of its students had taught during the year in the public schools. Special reports were made of the schools at Knoxville, Tenn.—where an orphanage for girls had been established—and Chase City, Norfolk, and Bluestone, Va.

The receipts of the Board of Foreign Missions for the year had been $102,975. It made report concerning the missions in Egypt and in India, in connection with which were returned 88 principal and subordinate stations; 17 ordained foreign missionaries, with 43 woman missionaries; 11 native ordained ministers, with 200 other native laborers; 22 churches, with 1,909 communicants; 51 Sunday-schools, with 2,555 scholars; 93 mission-schools, with 4,531 pupils; and 467 baptisms during the year. The increase of communicants during the year was 482, showing an increase of 28 for every ordained foreign missionary. The native converts had contributed for all purposes $11,610, or an average of $2.58 for each communicant in India, and of $8.47 for each one in Egypt. The board was instructed to consider the subject of establishing a mission on the upper Nile, and, "if the way be clear, to undertake the work."

The General Assembly of the United Presbyterian Church in North America met in Pittsburg, Pa., May 24th. The Rev. Dr. W. H. McMillan, of Allegheny City, was chosen moderator. The subject of allowing the use of instrumental music in the services of worship again received attention, a considerable number of memorials having been introduced asking for such modification of the action of the previous General Assembly as should prevent its being construed into a permission to employ instruments. The memorial, most numerously signed, which was regarded by the committee to whom the number were referred as definitely expressing what was expressed or implied in all the others, asked the General Assembly "to declare explicitly that in none of

the congregations under the care of the Assembly can instrumental music be lawfully used in worship until the Church shall have decided by constitutional enactment that such music in worship is divinely authorized and prescribed." The papers were referred to the Committee on Bills and Overtures, which made a report covering the construction to be placed upon the action of the preceding General Assembly, and respecting the nature—as to whether it is a matter of binding obligation or not—of the subject of the action. Concerning the bearing of the action of the previous Assembly, the report said the language in its resolution—

Must be understood in harmony with the declaration in the resolution itself, "that there is no sufficient Bible authority for an absolutely exclusive rule on the subject," and also in harmony with the entire action of which that resolution was but a part, in which the prohibitory law was declared to be repealed. The repeal of a law does not authorize anything except freedom from its restraints. Formally, it neither commands nor forbids anything. It simply leaves the subject without the law repealed.

In regard to the second point, in which the memorialists opposed tolerance of instrumental music with arguments drawn from the declaration in the Confession of Faith, to the effect that God must be worshiped in the way appointed in his Word, the committee urged—

That the question is not of the correctness of the principle so enunciated, but of the correctness of the application that is made in this case. To an ordinance of worship, or anything appointed in it, it is clearly applicable. Baptism and the Lord's Supper, for example, must be observed by the exclusive use o the elements appointed for each. But there may be mere incidents of an ordinance or helps to its observance, no part of the ordinance itself, which are not placed under such restrictions. In regard to the ordinance of praise, no intelligent Christian looks for the appointment of the particular tunes to be sung, or the particular means by which the key-note may be found, or for the use of musical notes as a help in singing, or the employment of trained singers to lead in the praise service. Such are among the things confessedly left to "Christian prudence."

Now, the question is, to which of these classes does the instrumental accompaniment belong, the essentials or the incidentals of worship? That is the very core of the question decided in the repeal of our prohibitory law. That law was what may be said to have been our statutory application of the principle cited from the Confession. To repeal that law, as has been done, was to declare it a misapplication of the principle; or that the thing forbidden by the law was one to which that general principle did not properly apply; in other words, that there was nothing in the ordinance of praise or any other Bible authority to justify such prohibition. That is the recorded judgment of the Church. While that judgment stands, how can we consistently declare, as asked in this memorial, that under the principle cited the prohibitory law is in effect still operative? And if we did, of what authority or force would such a declaration be?

The report of the committee was adopted, and with it the resolutions:

1. That the action of the last Assembly on this subject be reaffirmed as explained in this report.

2. That its admonitory resolution, advising and enjoining against all action on this subject offensive to fellow-worshipers or disturbing of the peace of congregations, be emphatically reaffirmed, and urged with renewed earnestness on the attention of the pastors and sessions and people of the whole Church.

A committee was appointed to address a pastoral letter to the people of the Church—

Setting forth the true state of the question as settled by the Church, and urging upon them the respect due the authority of the Church and to each other as Christian brethren.

The party opposed to the permission of instrumental music, who were represented by a minority report of the committee recommending the direct submission to the presbyteries of a permissive overture, recorded a protest against this action. The quarter-centennial anniversary of the formation of the United Presbyterian Church (which took place in 1833) was celebrated with appropriate exercises during the sessions of the Assembly. The committee which had in hand during the year the collection of memorial funds reported that the contributions amounted to $131,593, of which $42,061 were designated for special objects. A scheme was approved by the Assembly for the division of the undesignated contributions, amounting to $89,532, among the benevolent boards and educational institutions of the Church.

Convention of Opponents to Instrumental Music.—A convention of members of the Church opposed to the use of instrumental music met in Allegheny City, Pa., August 14th. It was attended by 478 delegates, clerical and lay, including woman-delegates, who took full part in the deliberations. Gen. James A. Ekin, U. S. A., was chosen president. Essays were read by different members of the convention, supporting the opposition to musical instruments from the "History of United Presbyterianism" and the "History of the Introduction of Music into the Reformed Churches." The question was also argued on grounds of Divine authority and of the traditions of the Church; and the action of the General Assembly in admitting instrumental music was further declared invalid, because, it was alleged, it was taken in violation of the constitution, and was based upon unconstitutional returns of votes. The convention, declaring that by the action of the General Assembly a crisis had been precipitated in which it had become necessary to do something to secure liberty and rights of conscience in the Church, resolved:

That whether the rule in our directory was repealed or not, we assert that, even without such rule, the Constitution of the Church, its Expression of Faith, Catechism, Testimony, Book of Worship, unwritten law, and ancient usage, preclude the use of musical instruments in worship in the United Presbyterian Church, and that they always have been and still are unlawful, and their intrusion on unwilling parties is a violation of personal liberty and the rights of conscience.

That, standing as we do on the Constitution and laws of the United Presbyterian Church, as adopted at the time of the union, we claim for ourselves the liberty of conscience guaranteed by that solemn compact, and we propose to remain steadfast and maintain our rights and liberties in the Church by all legitimate means.

That, without derogating from the just respect that is due to the General Assembly as the superior court of the Church, we nevertheless claim that our obedience and submission are due to it only as its decisions are in accordance with the mind of Christ, as expressed in the standards of the Church.

Other resolutions looked to securing from the General Assembly a revisal of its action and the adoption of proper steps "for ascertaining in a constitutional way the sense of the Church on the lawfulness of using instrumental worship."

IV. Reformed Presbyterian Church, Synod.—The Synod of the Reformed Presbyterian Church (O. S.) returned for 1883 112 ministers, 80 of whom were pastors; and 124 congregations, 40 of which had a membership varying from 80 to 50. An increase of five ministers and an increase of 129 members were reported. The following statistics were returned of the mission at Latakieh, Syria: Communicants (including the four ministers and the teachers), 138; schools, 27, with enrollments of 648 pupils.

The Synod of the Reformed Presbyterian Church met at Allegheny City, Pa., May 23d. A question was started at the opening of the session by the moderator's reading of the opening sermon, whether reading of sermons was proper. A motion was made to disapprove the sermon on this account. It was alleged in support of the motion that reading sermons was contrary to the traditions of the Covenanter Church, and that to allow this innovation to remain unchallenged would be to establish a dangerous precedent. The subject was disposed of by the adoption of a resolution declaring that "the reading of certain discourses on special subjects before this court shall not be construed as a precedent for reading sermons in ordinary ministrations." A proposition looking to the abolition of tokens or tickets for communion was considered, and was met by the adoption of a paper advising all the people of the Church "to observe the custom as heretofore, until such time as the Church, in its wisdom, may deem it proper to dispense with it." A question concerning the intermarriage of converts with non-Christians, which had given trouble in the Latakieh mission, Syria, was answered with the advice that "such questions must be determined by the constitutional and statute law of the Church; and in determining particular cases, there as here, all the circumstances must be taken into account." The Presbytery of Vermont was organized, with five congregations.

V. Reformed Presbyterian Church, General Synod.—The General Synod of the Reformed Presbyterian Church (N. S.) met in Philadelphia, Pa., May 23d. The value of the endowment fund of the Theological Seminary was reported at $33,954, while the receipts of the institution had been $2,740, and its expenditures $2,781. The management of the seminary was criticised in the debates. The Treasurer of the Board of Foreign Missions reported a balance on hand of $2,220.

VI. Cumberland Presbyterian Church. — The summary of the statistics of this Church for 1883 is as follows:

Synods	27
Presbyteries	116
Ministers	1,439
Congregations	2,591
Ruling elders	9,270
Deacons	2,894
Members	113,750
Added on profession	8,813
Adult baptisms	5,165
Infant baptisms	1,458
Officers and teachers in Sunday-schools	8,239
Sunday-school pupils	55,541
Total contributions	$417,998

The receipts of the Board of Publication for the year had been more than $56,000. It was free from the debt under which it had suffered for a long time, and contemplated the publication of works by denominational authors.

The Board of Missions reported that its receipts for the year had been $33,642, or 50 per cent. more than the receipts of the previous year. The board returned property to the value of $31,687, while its liabilities were small. The Japanese mission had enjoyed great prosperity, and a very large relative increase of members.

The Woman's Board of Missions had received $5,233 during the year, and $10,141 since its organization three years before. It had three missionaries in Japan, conducted a girls' school in that country, and was about to found an orphanage at Osaka.

The fifty-third General Assembly of the Cumberland Presbyterian Church met at Nashville, Tenn., May 17th. The Rev. A. J. McGlumphy, D. D., President of Lincoln University, was chosen moderator. The most important topic considered was the report upon the revision of the Confession of Faith and Government transmitting the votes of the presbyteries on the revised Confession which had been submitted by the preceding General Assembly to them (see "Presbyterians," section "Cumberland Presbyterians," in "Annual Cyclopædia" for 1882). The result of the voting was recorded as follows: 1. As to the Introduction, Confession of Faith, and Catechism: presbyteries approving, 99, of which 61 were recorded as approving unanimously; presbyteries disapproving, 8; presbyteries not reporting, 6; presbyteries submitting memorials, 4. 2. As to the constitution and rules of discipline: Presbyteries approving, 104, of which 65 approved unanimously; disapproving, 3; not reporting, 6; submitting memorials, 4. The report of the committee was concurred in, whereby the Confession as revised was declared to be the Confession of the Church. Numerous memorials and propositions suggesting amendments to the Confession were sent in, to which the Assembly answered that, in view of the fact that the subject had been so recently acted upon by the presbyteries, and their action approving the revised Confession had been so nearly unanimous, it seemed unwise to attempt at this time to determine what, if any, proposi-

tions to amend, coming from individuals, were proper or ought to be transmitted for action by the presbyteries. It therefore announced it expedient to act adversely upon all propositions coming from individuals, believing it more desirable to await expressions from the presbyteries, if any of them should desire to make suggestions. A committee which had been appointed by the previous General Assembly to consider the subject of union with the General Synod of the Lutheran Church, reported that it was not best to urge positive action now, while the Confession of Faith was undergoing revision; and that there was a growing feeling in some parts of the Church in favor of the union suggested, and a strong desire in every part of the Church for a closer fellowship with the Lutheran, and, in fact, with all evangelical churches. The prevailing impression among the members of the committees of the two churches, as represented in the minutes of correspondence adopted as a part of the committees' report, appeared to be in favor of a closer and more hearty *fraternal* union of the Cumberland Presbyterian and evangelical Lutheran churches; but the difficulties in the way of *organic* union at present existing were deemed to be insurmountable. Unless there existed a perfectly unanimous consent on the part of all the churches, on each side, the union would produce an additional number of factions. Neither body seemed to be "in a condition of gospel grace that qualifies them for organic union into one body." It was also held "that as matters in Christendom now stand, denominationalism is far more desirable than ecclesiastical concentration; that no one existing denomination is worthy of the high honor of absorbing into itself all the others." A committee was appointed to draw up a paper explaining the doctrinal status of the denomination, to be presented to the council of the Presbyterian Alliance which was appointed to be held in Belfast, Ireland, in 1884. Its report, which was adopted by the Assembly, embodies the following statement:

To the General Presbyterian Alliance, in session at Belfast, Ireland, 1884.

DEAR BRETHREN IN THE LORD: We of the Cumberland Presbyterian Church in the United States of America rejoice with you that God, by his gracious providence, seems to indicate that it is pleasing to him that the various families of the Presbyterian Church should come together for fraternal counsel as to the interests of his kingdom.

Claiming to be one of these families which God has raised up for the spread of the gospel of his dear Son, and having approved the Constitution of the Alliance (see Minutes of our General Assembly, 1881, page 34; and 1882, page 18), we send brethren bearing commissions with the signature of our Moderator and Clerk, as delegates to your body, and through them said Minutes and our Confession of Faith and Government, that by reference thereto you may decide whether we come within the pale of the consensus of the doctrines of the Reformed Churches.

In our Confession of Faith you will find our doctrines stated in the following order:

The Holy Scriptures, the Holy Trinity, the Decrees of God, Creation, Providence, the Fall of Man, God's Covenant with Man, Christ the Mediator, Free-Will, Divine Influence, Repentance unto Life, Saving Faith, Justification, Regeneration, Adoption, Sanctification, Growth in Grace, Good Works, Preservation of Believers, Christian Assurance, the Law of God, Christian Liberty, Religious Worship, Sabbath-Day, Lawful Oaths and Vows, Civil Government, Marriage and Divorce, the Church, Christian Communion, the Sacraments, Baptism, the Lord's Supper, Church Authority, Church Courts, Death and the Resurrection, and the Judgment.

It is well known to the religious world that our Confession of Faith and Catechism are revisions of the Westminster Confession of Faith and Shorter Catechism, expressing our understanding of the teachings of God's Word.

Now, dear brethren, if the difference between our statements of doctrine and those of the Westminster Confession of Faith is inconsistent with our being represented in your body, you will so decide.

A memorial was presented asking that steps be taken toward a reunion with the Cumberland Presbyterian Church (colored); to which the Assembly replied that as the organization of the colored Cumberland Presbyterian Church had been made at the request of a convention of colored ministers, it would not be equitable, while they were free to move in such a matter, for the present Assembly to move first. Moreover, the experience of those churches that had most largely succeeded among the colored people justified the conviction that a greater success could be reached by an independent organization. The memorial was not granted, but the sympathy of the Assembly was tendered and all assistance in its power was promised to aid and encourage the colored brethren in their work, especially in that of an educational character. Attention was called to the increasing desecration of the Sabbath, and prompt discipline was recommended to be administered to all church-members offending in this matter. The Assembly's Board of Trustees reported that a bequest of $17,000 from John P. Finley, and a bequest of $10,000 from John A. Dougherty, were available. The money was devoted to the cause of ministerial education. A fraternal letter was received from the Evangelical Union of Scotland in which was a clause congratulating the Assembly upon the success of its revision of the Confession of Faith, and the thoroughness with which "'Westminsterism'—to borrow the somewhat novel and expressive term of the revisers—has been eliminated by the Revising Committee."

VII. Presbyterian Church in Canada.—The following is a summary of the statistics of this Church as they were presented to the General Assembly in June: Number of pastoral charges, 799; of congregations and stations, 1,011; of churches, stations, and mission-stations supplied by pastors, 1,714; of families connected with the Church, 69,507; of communicants, 119,603; of sittings in churches, 350,432; total amount of stipends paid, $553,393; total amount raised for the schemes of the Church, $167,384; total income of the Church, $1,422,783.

The Committee on Home Missions reported to the General Assembly that its receipts for

the year had been $43,401, and that it had a balance in its treasury of $1,406.

The Board of French Evangelization had received $32,606. It had thirteen schools, with 19 teachers and 533 pupils.

The Foreign Mission Committee, Western section, had received $40,111. A favorable report was made of the mission among the Indians in the Northwestern Territories, and those people were represented as making satisfactory progress in the arts of civilization. There were connected with these missions 26 chapels and as many native agents, and 140 converts had been gained during the year. The Eastern section of the committee had supported a mission in Trinidad at an expense of $18,000, of which $8,000 had been contributed from Canada. A mission in India was prosperous; and, in the New Hebrides, 33 teachers were employed, and 195 communicants were enrolled.

The amount of the aged and infirm ministers' fund (Western section) was $8,692, and the number of beneficiaries on its roll was 32. The receipts of the Eastern section of the fund had been $2,312.

The widows' and orphans' fund, of which four separate accounts are kept, amounted in all to $265,530.

This Church sustains six theological schools and colleges, as follow: Presbyterian College (theological), Halifax, N. S., 3 professors, 15 students in 1882; Morrin College, Quebec, 5 professors, 51 students; Presbyterian College, Montreal, 3 professors, 7 lecturers, 72 students; Queen's College and University, Kingston, 7 professors, 2 lecturers, 202 students; Knox College (theological), Toronto, 6 professors and teachers, 37 students; Manitoba College, Winnipeg, 5 instructors, 55 students.

The General Assembly of the Presbyterian Church in Canada met in London, Ont., June 13th. The Rev. John A. King, D. D., was chosen moderator. Action was taken naming $750, with a manse, as the amount which the Church should aim to secure as the minimum stipend of ministers in pastoral charge. The principle of the "Scott" liquor act of 1878 was approved "as an important means of limiting the liquor-traffic and educating the people for total prohibition"; members were advised to encourage the establishing of coffee-houses and temperance hotels, and ministers to preach on temperance on some suitable day. A remonstrance was ordered addressed to the managers of railroads against the desecration of the Sabbath on their lines; and the Assembly's committee was authorized to correspond with similar committees of other churches with a view to united action for enforcing the existing Sabbath laws. In connection with this subject, it was mentioned that six Presbyterian young men had recovered damages for wrongful dismissal because they would not work for contractors on one of the railroads on Sunday.

VIII. Church of Scotland (Established).—The General Assembly of the Established Church of Scotland met in Edinburgh, May 24th. The Rev. Dr. John Rankine, of Sorn, was chosen moderator. The Committee of Presbyterial Superintendence reported that the entire number in the roll of communicants could not be less than 530,292, or 14,506 more than were returned in 1878. The whole number of persons in Sunday-schools was 261,000. The Committee on Christian Liberality reported that the entire amount of contributions for 1882 to the funds and schemes of the Church had been £386,061, or £44,698 more than the contributions for 1881. The Endowment Committee reported the expenditure during the year of £33,000 in the endowment of 11 parishes, making the whole number of 323 parishes endowed and erected since its commencement. The Committee of the Aged and Infirm Ministers' Fund reported the capital of the fund at the end of 1882 to be £10,772. The income of the Home-Mission Committee had been £9,504. The committee had assisted 50 mission stations and 71 mission churches, connected with which were 11,727 communicants and 22,130 attendants; it had also aided in the building or enlarging of 22 churches, in which 9,176 additional sittings were provided. The income of the Foreign Mission Committee had been £25,022, and its expenditure £23,328. The Jewish Mission Committee returned an income of £5,392, and reported 2,233 pupils in its 11 schools. An overture having been presented, calling attention to the absence of a uniform rule in regard to the admission of ministers from other churches, a motion was offered to the effect that the Assembly instruct the committee on the reception of such ministers to see that applicants furnish evidence that they had received such ordination as was required by the Confession of Faith and the Constitution of the Church. The overture and resolution were rejected. Respecting the clause in the Universities (Scotland) Bill pending before Parliament, which provides for the abolition of tests in the case of the theological chairs, the Assembly resolved, by a vote of 176 to 52, to petition against the clause, while it still expressed willingness "to give favorable consideration to any modification of the existing condition of appointment to theological chairs, which would still leave satisfactory security that the theological teaching in the universities shall continue to be in harmony with the doctrinal standards of the Church of Scotland." The Temperance Committee reported the number of members in the Church of Scotland Associations to be 4,000, with 7,500 children in Bands of Hope, and said it was evident that "the temperance platform of the Church of Scotland must not be more narrow than the terms of communion in the Church," and that it had been its aim "to unite all the members of the Church against the evils of drunkenness."

IX. Free Church of Scotland.—The General Assembly of the Free Church of Scotland met in

Edinburgh, May 24th. An important debate took place on the subject of the use of instrumental music in worship, respecting which three motions were presented. The first was contained in the report of the committee to which the subject had been referred, brought forward by Dr. Adam, and was to the effect that the introduction of instrumental music is not contrary to Scripture or to confessional law, and that liberty in the matter should be granted to the congregations. The second motion was by Principal Rainey, and embodied the substance of the former resolution; with the additional recommendation, in deference to numerous protestations, that all congregations and church courts should carefully consider the interests of peace and harmony. The third resolution was by Sir Henry Moncrieff, and advised that the report of the committee, with the accompanying documents, be given to the Church for consideration, and that, in the mean time, the Assembly take no action. A protest was lodged by Dr. Begg on behalf of himself and his friends, who supported Sir Henry Moncrieff's resolution, to the effect that, in taking part in the debate, they did not concede that it was competent for the Church to sanction in any form the use of organs in praise. The resolution of Dr. Rainey prevailed by a vote of 390 to 259. An expression was adopted, by a decided majority, in favor of relieving the deacons from the obligation to sign the "Confession of Faith."

X. United Presbyterian Church of Scotland.—The number of congregations on the roll of the synod of this Church for 1882 was 551. The statistical reports showed an increase of 1,742 in the total membership. The total income of the Church had been £377,717. The available income of the foreign mission fund had been £31,259, and the expenditures on its account £36,694. The missions—in Jamaica, Trinidad, Old Calabar, Caffraria, Spain, India, China, and Japan—returned 50 ordained European and 17 ordained native missionaries, a total of 487 educated agents, and 71 stations and 156 out-stations, with 10,808 communicants, and 12,524 pupils in 199 schools. The synod, at its annual meeting, reiterated its declarations in favor of the disestablishment of the State Church, affirming the spiritual independence of the Church and the sole headship of Christ. Interest was expressed in the movement for the union of the United Presbytery of Caffraria, South Africa, with the Free Church Presbytery, and the proposed basis of the union was approved.

XI. Presbyterian Church in Ireland.—The reports of this Church show a decrease of 485 in the number of communicants. The total income of the Church for the year was £746,045.

In the General Assembly resolutions were offered condemning the ministers of those congregations which continue to use instruments in public worship, and directing the appointment of a commission with power to deal with such ministers in the event of their continued disobedience, in accordance with the laws of the Church on contumacy. An amendment was offered to the resolution, to the effect that, in view of all the circumstances and the gravity of the issues involved, the Assembly decline to appoint a commission to proceed in the matter, or to take any steps which will involve discipline or a rending of the Church. After an active debate, the amendment was adopted by a vote of 320 to 309 votes for the original resolution.

XII. Presbyterian Church in England.—The Synod of this Church embraces, according to the statistical reports submitted to it at its meeting in June, 1883, 279 congregations, with 57,402 members. The total revenue of the synod for the year was £235,662, and the property held by the Church was valued at £1,244,000, less £107,400 of indebtedness.

The contributions of the Church during the year for foreign missions had been £8,500. The missions were chiefly in China, and returned 19 ordained European missionaries, five medical missionaries, five woman-missionaries, besides wives of missionaries, and a staff of native evangelists, with 2,570 communicants.

The Synod of the Presbyterian Church in England met in London, May 3d. The Rev. Dr. Edmond was chosen moderator. The principal subject considered was that of the modification of the creed in such a way as to make it more intelligible to the people of the present time. A motion was adopted to the effect that the synod, "recognizing the gravity of the matters thus brought under its notice," and "while affirming its unabated adherence to the doctrine contained in the Westminster Confession," consider (1) what changes may be made in the existing formulas, by which office-bearers affirm their adherence to the Confession; (2) the desirability of preparing an explanatory declaration; and (3) whether, with a view to secure some briefer and more available compendium of fundamental doctrine, the Church might not approach the Pan-Presbyterian Council to meet in Belfast next year, by memorial or otherwise, suggesting the drawing up of a digest of doctrine designed to embody the "Consensus of the Reformed Confessions," on which the said Council is based. The union thanksgiving fund, which the synod had been collecting for several years in commemoration of the union of the different branches of the Presbyterian denomination in England, by which the Church had been formed, now amounted to £144,147.

PRESIDENT'S MESSAGE. See page 157.

PRINCE EDWARD ISLAND, a province of the Dominion of Canada, in the southern part of the Gulf of St. Lawrence, separated from New Brunswick and Nova Scotia by Northumberland strait. Area, about 2,000 square miles. Capital, Charlottetown.

Soil and Climate.—The soil is good, and two thirds of the exports are agricultural products.

Nearly the whole island is under cultivation. The climate is agreeable, especially in summer. The ranges of the thermometer are not extreme, owing to its insular character. Very little wheat is grown, but this is owing to the extreme moisture of the atmosphere.

Towns and Ports.—Charlottetown, the capital, on Hillsboro Bay, is the largest town on the island; its population is 11,484; Summerside, 2,853, is connected with Shediac, N. B., by a ferry; Georgetown, at the western extremity of the island, has a population of 1,200, and is also a packet-station. The minor ports are Alberton, Princetown, and Souris.

Industries.—The agricultural exports in 1882 amounted to $1,021,344, of which $630,185 was oats, and $368,911 potatoes. Vegetables valued at $13,767, and hay at $6,320, make up the greater part of the remainder. These exports are nearly equally divided between the United States and Great Britain.

The export value of products of the fisheries was $541,585. Of this, $420,430 is on account of lobsters, shipped chiefly to Great Britain; $81,855 of mackerel, shipped to the United States, and $12,264 of codfish. The product of animals amounts to $181,931, of which $86,927 was eggs, to the United States; $14,409, sheep; $9,696, cattle; and $13,722, butter. Beef, pork, hides, and horses make up the remainder. The manufactures include ships, $107,867; leather, $4,256; and starch, $2,680. The entire exports of Prince Edward Island manufactures amounted only to $118,-930. The product of the forest exported amounted only to $20,098, chiefly lumber.

Education.—The schools are free. The education department has been under the control of a chief superintendent since 1877, and there is a Provincial Board of Education. The salaries of teachers are paid chiefly from provincial funds. They range, in the case of first-class teachers, from $300 to $1,000 for male teachers. Female teachers holding first-class certificates receive on an average $360 per annum. There were 468 teachers employed in the public schools in 1882—256 males and 212 females. The attendance in the same year was 21,269. The total expenditure for education in 1882 was $130,446.96, of which $98,476.48 was paid for teachers' salaries. There were 60 teachers in training in the normal department of the Prince of Wales College at the close of 1882, and 33 non-professional students. These institutions were united in 1879, in which year the college was also thrown open for ladies. The Roman Catholics maintain St. Dunstan's College for the higher education of members of that denomination.

PROHIBITION. The idea of prohibiting the use of or traffic in intoxicating liquor, in some form or to some degree, is as old almost as that kind of liquor itself.

Early History.—Intemperance, from the earliest days of history, has periodically required some check upon its progress, which religious or civil authority has duly presented. The Scriptures contain many proofs of the excessive use of wine, even among the chosen people. Confucius gave sage advice against a like use thereof in China, almost 500 years before Christ. Herodotus, writing about the same time, referred to a liquor drawn from barley, by fermentation, as in common use among the Egyptians. Pliny speaks of 195 kinds of wine used in Rome. Tacitus, describing the manners and customs of the Germans in his day, notices their drunken broils from the excessive use of beer. The ancient Britons produced from grain "a pleasant, warming, and strengthening beverage," which they called *curmi*, and of which they drank lavishly. Every people, of historical account, have had their favorite strong drink, fermented or distilled.

The earliest forms and applications of prohibition were ecclesiastical and personal, and were imposed mainly upon liquor-drinking rather than upon liquor-vending. Ancient Scripture tells of Nazarite and Rechabite, who were forbidden to use wine or strong drink. The Indian Vedas, though allowing wine as an oblation to the gods, forbade its use as a beverage; and Sukracharaga, a high-priest of the Assurus, declared the most rigid prohibitory law. Buddhist and Brahman monks were bound to abstain wholly from intoxicating drinks; and on all the followers of Buddha abstinence therefrom was rigidly enjoined. Intoxicating wine was forbidden in Egypt, both to priest and king; and from the accession of Menes to the reign of Psammetichus, 600 B. C., a period embracing twenty-five dynasties, total abstinence from intoxicants was taught and practiced by them. The Egyptian priests observed personal prohibition even down to the time of Nero. Mohammed said, "Of the fruit of the grape ye obtain an inebriating liquor, and also good nourishment"—the former he interdicted, the latter he allowed.

The first civil law against the manufacture of intoxicating liquor, of which there is any record, was promulgated in China, 1100 B. C. It was an imperial edict called "The Announcement against Drunkenness," and directed that "the people" who drank should be put to death. A little of the spirit of it abides in one of the present Chinese enactments, which says, "A man who, intoxicated with liquor, commits outrages against the laws, shall be exiled to a desert country, there to remain in servitude." Among the ancient Mexicans intemperance was accounted a grievous crime, and was punished with the severest penalties. Charlemagne tried by imperial edicts to stop the drinking habits of the early Germans. According to Lecky, one of the safeguards established to preserve female purity in Rome was an enactment forbidding women even to taste the juice of the grape; and this law, ingrafting itself upon early domestic education, became, by habit and tradition, so incorporated with the moral sense of the people, that its violation

was considered monstrous, and Cato could speak "of any shameful act" on the part of a wife, "such as drinking wine or committing adultery." Cato further says that his countrymen were accustomed to kiss their wives, for the purpose of discovering whether they had been drinking; and Pliny, who ascribes to Romulus the authorship of this prohibitory law as applied to women, mentions two instances in which offending wives were put to death for their transgressions. Later, Seneca made bitter complaint of the drinking habits of women; and the prohibition had grown quite obsolete in the time of Tertullian. In the early days of Rome, wine was also forbidden to men until their thirtieth year.

According to Hector Boëtius, the sellers of strong drink, in the earlier ages of Scottish history, were looked upon as public enemies, who, for profit, enticed men to a vicious life; and Argadus, administrator of the realm, A. D. 160, confiscated their goods, pulled down their houses, and banished them. At a later period, when the evils of drink had revived, Constantine II re-enacted this law (A. D. 861), adding the penalty of death, "in case the tavernier refused to depart, or resisted the execution of the decree." In the reign of Philip and Mary an act was passed suppressing in Ireland the traffic in *builcann*, a spirit distilled from fermented black oats, its manufacture being regarded as a sinful and dangerous destruction of the food of the people.

Between the fifth and the fifteenth centuries, when the Church of Rome bore absolute sway over England, Ireland, and Scotland, many laws, enactments, decrees, canons, and pastorals were leveled at intemperance. One of the canons enacted by the bishops, in synod assembled by St. David, A. D. 569, affirmed that "he who forces another to get drunk, out of hospitality, must do penance, as if he had got drunk himself." Under St. Dunstan it was ordered that no drinking should be allowed in the church. Soon after (A. D. 970) a canon was passed forbidding priests to drink in taverns like laymen. Still later (A. D. 1215) the clergy, both of England and Ireland, were strictly forbidden to frequent taverns.

The brewing and selling of ale and mead became a considerable business in Scotland and England at a very early day, but from the first it was regulated, restricted, or partially prohibited by Government. The earliest recorded excise was a tax of fourpence, paid in Scotland for a yearly license to brew and sell ale; and prohibition was linked with it by the one licensed being forbidden to carry the ale into another town for sale. All public officials were prohibited from brewing for sale; and public tasters were appointed, to test and appraise the ale sold, most of which was brewed by women. Any woman might brew who should pay the tax; but she must brew the whole year through or forfeit her permit; and she must "put her ale-wand outside her house, at her window or above her door," or be subject to fine. Ale-drinking increased rapidly, and in A. D. 728 public booths were erected, wherein to sell the popular drink. In the latter part of the tenth century King Edgar put down all ale-houses, except one in each borough or small town. The price of ale was regulated by the Norman kings, and by statute (A. D. 1272) it was ordered that a brewer should sell two gallons for one penny, in cities, and three or four for that price in the country. In the reign of Edward I (A. D. 1285) it was enacted that taverns should not be open for the sale of wine and beer after the tolling of the curfew; and in the reign of Edward III but three taverns were allowed in the metropolis. Hop plantations were established in 1552, and were accorded special privileges in the fifth year of Edward VI; and in 1649 the city of London petitioned Parliament against "hoppers," urging that "this wicked weed would spoil the drink and endanger the lives of the people." In 1552 power was given to justices of the peace to abolish ale-houses, and it was ordered that none should be opened without license; two years later taverns for the sale of wine were limited by act of Parliament to a certain number in the different cities, London being allowed forty, and none was permitted to be sold to be drunk on the premises; and in 1643 a tax was laid upon home-made ale and beer, which was then first called an excise-tax. The same statute imposed an excise of twopence a gallon upon *aqua vitæ*, or strong waters, distilled within the Commonwealth, which revenue was granted Charles II, and continued to his successors, with various modifications, until 1830, and since then upon nearly all alcoholic liquors. In 1689 the importation of spirits was prohibited, and distillation, not known in Europe until the thirteenth century, was thrown open to all English subjects. At once the increase of distilled liquors became enormous, their consumption kept equal pace, and within fifty years drunkenness was an acknowledged national curse. Gin took the place of ale everywhere, to an alarming extent; and a common advertisement among the retailers of it was, "Drunk for a penny—dead-drunk for twopence. Clean straw for nothing." Lecky says that this fact of gin-drinking, small as it appears in English history, was probably the most momentous of the eighteenth century. It brought on an era of frightful intemperance, which vigorous parliamentary measures did not terminate. Between 1684 and 1736 the distillation of spirits rose from half a million gallons to 5,394,000 gallons, and this increase was scarcely checked by imposing a duty of twenty shillings a gallon on all spirituous liquors, and by prohibiting their sale in less quantities than two gallons, without paying £50 a year tax, in the latter year named. The law was not enforced, but fearful riots followed its attempted enforcement. Crime and immorality of all descrip-

tions multiplied. In 1751 the consumption of spirits had reached over 11,000,000 gallons. Then more stringent measures were tried, with marked effect. Distillers were prohibited, under a penalty of £10, from either retailing spirituous liquors themselves, or selling them to unlicensed dealers; debts contracted for liquors, not amounting to twenty shillings at a time, were made irrecoverable by law; licenses were greatly limited; the penalties for unlicensed selling were much increased: for a second offense the offender might be imprisoned and whipped, and for the third he was liable to transportation. But in spite of all this the traffic did not remarkably diminish.

In the United States.—In this country, the worst forms of liquor-selling were prohibited in colonial times; and partial prohibition early prevailed. In the town records of East Hampton, Long Island, is an order of a town-meeting, "That no man shall sell any liquor but such as are deputed thereto by the town"; and in 1655 the authorities interfered between the neighboring Indians and their drink with prohibitory provisions. As given by Bancroft, the summary of a new Constitution for Virginia, under date of 1676, has a prohibitory clause as follows: "The sale of wines and ardent spirits was absolutely prohibited (if not in Jamestown, yet otherwise) throughout the whole country."

Distillation began in Boston in 1700, with the making of New England rum from West India molasses; and four years later whisky-making, from rye, began in Western Pennsylvania. In less than 100 years there were 40,000 distilleries in the United States, and the results thereof had excited sober concern. On Feb. 27, 1777, the following resolution was passed by the first Continental Congress, then sitting in Philadelphia:

> *Resolved*, That it be recommended to the several Legislatures in the United States immediately to pass laws the most effectual for putting an immediate stop to the pernicious practice of distilling grain, by which the most extensive evils are likely to be derived, if not quickly prevented.

There is no proof that this recommendation bore fruit, though in 1788 the Legislature of New York passed an act "to lay a duty on strong liquors, and for the better regulation of inns and taverns." It provided that the Commissioners of Excise should not grant permits to any person to sell strong drink and spirituous liquors, for the purpose of keeping a tavern, unless it should appear to them that such an inn or tavern was necessary for the accommodation of travelers. Good character, and a recognizance not to keep a disorderly house, were also required. April 7, 1801, a more stringent bill passed the same body, which prohibited the sale of spirituous liquors by retail, or to be drunk in the house of the seller; restrained and limited the power of Commissioners of Excise; and made each violation of its provisions a misdemeanor. In December, 1790, the College of Physicians in Philadelphia memorialized Congress, declaring "that the habitual use of distilled spirits, in any case whatever, is wholly unnecessary," and asking Congress "to impose such heavy duties upon all distilled spirits as shall be effectual to restrain their intemperate use in our country."

In 1794 Dr. Rush's "Medical Inquiries" attacked the common professional belief in the virtue of alcohol as diet, and in its prophylactic power as medicine; and, as a consequence of the agitation which followed, the first temperance society of modern times was organized April 13, 1808, in Moreau, Saratoga co., N. Y., entitled "The Union Temperate Society of Moreau and Northumberland." Like the Massachusetts Society for the Suppression of Intemperance, formed in 1813, it did not aim at total abstinence, but to discountenance "the too free use of ardent spirit." Feb. 13, 1826, the American Temperance Society was organized in Boston, and in a manifesto, issued the following month, its Executive Committee declared for the total prohibition of distilled liquors. Temperance societies were formed all over the country, numbering above 7,000 in five years, with a membership of 1,250,000. A Congressional Temperance Society was among these. Great enthusiasm prevailed everywhere, culminating in the Washington movement of 1840, which carried total abstinence on a strong tide of popular feeling from State to State. It was prohibition of the individual by the individual. No longer could it be said, as forty years before, that Americans were the most drunken people on the face of the globe, because of national revenue sought from spirits, to pay a national debt resulting from war.

The License Question.—But while thousands pledged themselves to abstain from strong drink, and pledged men were enthusiastically rallying into organizations, the dram-shop held place as a necessary evil, recognized as such, and legalized. No-license did not compel general consideration till 1832, and was adopted then but here and there. The city of New York largely reduced the number of retail licenses in 1819, and next year the mayor testified to an improved condition of morals there, and imputed the same "to the suppression of so many of these poison-shops, where a man might buy rum enough to make himself beastly drunk for six cents." The era of no-license fairly overlapped on the era of organization, the former beginning a decade before the latter may be said to have ended. Dr. Lyman Beecher, in his famous sermons on "The Nature and Remedy for Intemperance" (1826), had proclaimed a national remedy needful, "the banishment of ardent spirits from the list of lawful articles of commerce." Dr. Justin Edwards, in a report of the American Temperance Society (1833), had said, "The point to be decided is, shall the sale of ardent spirits, as a drink, be treated in legislation as a virtue, or a vice?" In 1833 the question was

publicly debated in the city of New York, "What right have legislators to pass laws which enable men legally to injure their fellow-men, to increase their taxes, and expose their children to temptation, drunkenness, and ruin?" "The law which licenses the sale of ardent spirits," said Judge Platt, in the same year, "is an impediment to the temperance reformation; . . . and when the public safety shall be thought to require it, dram-shops will be indictable, at common law, as public nuisances." No-license appears to have been successfully established in the old colony of Massachusetts in 1832; only two criminals were tried in Barnstable and Dukes counties throughout 1835, or the larger part of that year. Georgia took it up in 1834, and expelled the traffic from two counties. Massachusetts extended it through two additional counties, and in numerous towns of that State licenses were withheld. Connecticut caught the no-license enthusiasm in 1844, and elected commissioners accordingly in 200 out of 220 towns. A year later, four fifths of the towns of New York voted strongly for no-license; and it was recorded of Massachusetts that from more than 100 towns the traffic was entirely removed.

State Prohibition by Statute.—Local prohibition, by towns and municipalities, led naturally to the thought of State prohibition under general law. Maine began the agitation concerning it, and the first legislative attack on the liquor traffic was made in the Maine Legislature in 1837, when Gen. James Appleton presented a memorial demanding the abolition of all license laws, and the entire prohibition of liquor-selling "except for medicine and the arts." A prohibitory bill, according with this demand, was defeated. In 1838 Tennessee enacted a law which prohibited the retailing of drink in quantities less than one quart; and the same year a convention of 400 delegates, in Massachusetts, organized a total-abstinence State Temperance Society, and presented to the Legislature a petition asking: "Is it right to give authority to sell insanity and deal out sure destruction? If it is right, why should any be forbidden to do it? If not right, why should any be permitted to do it?" The Legislative committee recommended prohibition; and a bill was passed prohibiting the sale of spirits in less quantities than fifteen gallons. Mississippi enacted the one-gallon law in 1839; and Illinois granted power to towns and counties to suppress the retail traffic, on petition signed by a majority of the male inhabitants. The next five years might be called the local-option era, since many of the States made local prohibition possible by popular vote. As local option appeared democratic in idea, it met with comparatively little legislative opposition.

Maine, first to attack the liquor-traffic by legislative memorial, passed the first general prohibitory law in 1846, which year ended the local-option era. This law failed, as has been said, "because it was not as thorough in its apparatus as in its principle." Delaware followed with a similar law in 1847; but this was submitted to and ratified by the people, and was then declared unconstitutional by the Supreme Court, because of such submission. In 1849 the temperance men of Maine, under the leadership of Neal Dow, carried the elections, and on June 2, 1851, by a vote of two to one, the first prohibitory law was superseded by the "Maine law," as it was soon denominated, drafted by Mr. Dow. He declared confiscation of the liquor as the practical correlative of the principle of prohibition, and this law embodied "search and seizure" provisions which rendered it effective. Under it the first seizure was made at Bangor, July 4th of the year the law passed, and a second followed in Portland shortly after, where $2,000 worth of liquor was destroyed in presence of a great crowd of people. In May, 1855, the Maine law caused a mob in Portland, the military were called out, and one of the rioters was killed and several wounded. At the next election the Prohibition party failed to secure its necessary plurality of votes, and in 1856 a Democratic Legislature repealed the prohibitory law, and substituted a stringent license law in place of it; but after two years' experience with increased crime, pauperism, and disorder, Maine re-enacted prohibition by a legislative measure submitted to the people, and ratified by a majority vote of 22,952. The only subsequent change in that law has been to render it more rigorous.

Following the lead of Maine and partially patterning after the Maine law, prohibition was enacted in Minnesota (1852), Rhode Island (1852), Massachusetts (1852), Vermont (1852), Michigan (1853), Connecticut (1854), Indiana (1855), Delaware (re-enacted 1855), Iowa (1855), Nebraska (1855), New York (1855), New Hampshire (1855), and Illinois (1855). Of the fourteen Legislatures which thus enacted prohibition in four years, eight were Democratic, four Whig, and two American; two of the Democratic and one of the Whig having anti-Nebraska members on the dominant side. In only two of these States has the prohibitory law stood until now—Vermont and New Hampshire. In six it was declared unconstitutional—Delaware, Rhode Island, Massachusetts, Michigan, Indiana, and New York. In Connecticut it was repealed. In Iowa a "wine-and-beer clause" afterward rendered it largely inoperative. In Illinois it failed of approval by the people. It was announced in 1856 that prohibition had driven the open liquor-traffic out of three fourths of Massachusetts; and in the city of Lowell, in one year, it caused a diminution of 77 per cent. in the recorded cases of drunkenness. In Connecticut Gov. Dutton said, "The home of the peaceful citizen was never before so secure"; and the Mayor of Providence, after three months of the law in Rhode Island, published statistics showing that the commitments had been reduced nearly 60 per cent. In Vermont the State's

attorney of Chittenden county, writing from Burlington, said, "The law has put an end to drunkenness and crime almost entirely." In New Hampshire several counties reported (1856) their jails tenantless. In New York, where the opposition was greatest, the law was declared by Gov. Clark to have been generally obeyed outside the great cities; and in Albany, Syracuse, Auburn, Utica, and Rochester, the police committals for offenses other than drunkenness, in six months only, were decreased 1,910. New York had prohibition but a short time before its unconstitutionality was declared by the Supreme Court, not because of its principle, but because the act did "not express itself with sufficient specificness and discrimination"; and in 1857 a license law was enacted, prohibitory as to selling to Indians, minors, and habitual drunkards, also as to selling on Sunday. With some modifications, rendering it no less prohibitive in character but more easy of evasion, it has continued until now.

The prohibition era ended in 1856, when slavery came to the front, as a great moral and political question, and overshadowed temperance. Special work to secure the enactment of prohibitory laws ceased in 1855, and active effort to hold these laws and secure their enforcement lasted but a year or two longer in most of the States. Five years of anti-slavery agitation followed the decade of anti-liquor agitation, and four years of civil war spread the drink-habit disastrously. License had become the prevailing State policy, with such partial prohibition as the traffic would permit. The distilling and brewing interests had swelled to enormous proportions. During the last year of the war, the revenue to Government from distilled and fermented liquors multiplied almost fourfold. Intemperance was more general than at any time before in two generations. Anti-liquor agitation began again, both reformative and political, incited largely by the beer-brewers, who were resolved upon removing all restrictions from fermented liquors, and doing away in particular with Sunday prohibition. At the seventh Beer-Brewers' Congress, held in Chicago, June 5, 1867, they declared "the action and influence of the Temperance party" in "direct opposition to the principles of individual freedom and political equality," and—

Resolved, that we will use all means to stay the progress of this fanatical party, and to secure our individual rights as citizens, and that we will sustain no candidate, of whatever party, in any election, who is in any way disposed toward the total-abstinence cause.

There was at this time no Prohibition party, national or State; there had been none; and the "Temperance party" here referred to was but the unorganized mass of temperance voters, in both political parties, who carried their principles into the elections as opportunity offered. These men, represented in the Sixth National Temperance Convention, held in Cleveland, Ohio, July 29 and 30, 1868, accepted the issue, and resolved, "that temperance, having its political as well as moral aspects and duties, demands the persistent use of the ballot for its promotion," and the convention, in the same resolution, urged "the friends of the cause to refuse to vote for any candidate who denies the application of the just powers of the civil government to the suppression of the liquor-traffic," and exhorted "the friends of temperance, by every practical method in their several localities, to secure righteous political action for the advancement of the cause."

A National Movement.—The idea of a national Prohibition party was broached during the session of the Right Worthy Grand Lodge of Good Templars, held in Oswego, N. Y., May 25, 1869, and a committee was appointed to issue the call. Pursuant thereto, nearly 500 delegates, representing twenty States, assembled in Chicago, September 1st of the same year, organized the National Prohibition Reform party, and adopted an address by Gerrit Smith. The first nominating convention of that party was held at Columbus, Ohio, Feb. 22, 1872, adopted a comprehensive platform, and nominated for President, James Black, of Pennsylvania; for Vice-President, John Russell, of Michigan. State organizations auxiliary followed the Chicago Convention, beginning with Ohio, in 1869, and the nomination there of the first distinctively Prohibition ticket, for which 679 votes were cast. In 1870 the party's vote, in five States, was 17,401; a year later it reached 17,127 in six States; in 1872, the presidential ticket received 5,508 from six States; the next year six States gave 22,737; in 1874 ten States counted 46,025; and the next year twelve States gave 51,986, Pennsylvania leading with 13,244, followed by New York with 11,103, Rhode Island with 8,724, and Massachusetts with 9,124. The second national nominating convention of the party was held in Cleveland, Ohio, May 17, 1876, with an attendance of about 100 delegates, from twelve States. It nominated for President, Green Clay Smith, of Kentucky; for Vice-President, Gideon T. Stewart, of Ohio; and they received 9,757 votes in seventeen States, while the State tickets, in ten States, received 26,014. In 1877 seven States polled 55,779, considerably more than have been recorded since, with the exception of 1882, when the aggregate, in thirteen States, reached 98,768, New York leading with 25,763. The national ticket, in 1880—Neal Dow and Henry A. Thompson—had but 10,305. Twenty of the States have had Prohibition tickets, one year or more, since the party was first organized. The largest vote cast by any of them was that of New York in 1882. But, small as these figures appear, prohibition has entered largely into State and national politics since 1870. Both the Democratic and Republican parties have pronounced upon it. In their National

Convention of 1872, at Philadelphia, it was declared:

The Republican party proposes to respect the rights reserved by the people to themselves as carefully as the powers delegated by them to the State and to the Federal Government. It disapproves of a resort to unconstitutional laws for the purpose of removing evils by interference with rights not surrendered by the people to either State or national Government.

Mr. Herman Raster, who wrote this, avowed it to mean "the discountenancing of all so-called temperance (prohibitory) and Sunday laws." The Democratic party, nationally at St. Louis in 1876, and at Cincinnati in 1880, as also by State conventions in many States, declared its opposition to all "sumptuary laws." In 1875 a bill passed the Senate of the United States to provide for a commission of inquiry "in reference to the question of revenue from the manufacture and sale of alcoholic and fermented liquors, and the effect of the use of such liquors upon the morals and welfare of the people"; but it was defeated in the House of Representatives. The same measure has passed the Senate four times since, with uniform failure in the House; and the beer interest has kept an attorney in Washington to insure its defeat.

Prohibition by Constitutional Amendment.—On Dec. 27, 1876, Hon. Henry W. Blair, of New Hampshire, introduced in the House of Representatives a joint resolution to amend the Constitution of the United States by prohibiting, "from and after the year of our Lord 1900, the manufacture and sale of distilled alcoholic intoxicating liquors," providing that on the last day of December, 1890, the same should have been ratified by three fourths of the States, and supported the measure in a speech covering the entire question. Mr. Blair has since kept this national amendment before the Senate.

State constitutional prohibitory amendments came to be considered soon after the national amendment was first proposed. The Woman's Crusade (1873–'74), purely moral and spiritual in its agencies, persuasive in its efforts, and marvelous in its immediate results, had not permanently checked intemperance. The Reform Club movement, with all its blue-ribbon enthusiasm, did not close the saloons, or hold in total-abstinence ranks a large percentage of the men swept into it. The Woman's Christian Temperance Union, allied therewith, was almost powerless in presence of a legalized traffic, potent in politics and protected by law. The Prohibition party was ill organized where it existed, of meager membership, and only stood as a weak protest against a mighty power. How to apply the ballot, under existing political conditions, and make it effective for prohibition, was a problem which the amendment plan appeared to solve. It took the question out of party politics, and separated it from the entanglements of party necessities. It arrayed men on one side or the other of a direct issue. Kansas began the open fight for State constitutional prohibition. For five years previous the work of moral temperance reform had there been vigorously carried on, with prohibition as the ultimate end sought. The Governor, John P. St. John, was a Republican Prohibitionist. In 1879 many restrictive bills were before the Legislature, and these finally gave way to an amendment adding section 10 to Article XV, as follows:

The manufacture and sale of intoxicating liquors shall be forever prohibited in this State, except for medical, scientific, and mechanical purposes.

This was passed by the Legislature, March 5, 1880, with barely a two-third vote in the lower House, and went to the people for ratification on the 2d of November. Gov. St. John led the amendment campaign, and had the co-operation of many able and active workers, organizers, and lecturers, from other States. The liquor-manufacturers organized secretly, and used every means in their power to stay the temperance tides. Prohibition was adopted constitutionally by a majority of 7,998 in a total vote of 176,606, and enforcing statutes were enacted by the Legislature. The Republican party renominated Gov. St. John, in 1882, for a third gubernatorial term, by almost the entire vote of the nominating convention; but he was defeated at the polls by about the majority which prohibition had received, though his opponent, Gov. Glick, did not have so large a vote as had been recorded against prohibition. A prohibition Legislature was elected, which refused to submit the anti-prohibition amendment offered. The defeat of Gov. St. John was everywhere accounted the defeat of the principle he had advocated, and open organization went forward to nullify the law. In all the larger cities and towns it was for two years overridden, though partially successful through the State at large. But in the autumn of 1883 those officials who had favored the defiance of law were deposed, prosecutions against violators were pressed with unusual rigor, and both open and secret rebellion against the Constitution and laws of the State almost entirely ceased. This new impulse began with a monster temperance convention at Topeka, Jan. 9, 1883, where 1,241 delegates assembled, and was continued through the efforts of the Kansas State Temperance Union. At the election the next autumn the enforcement of prohibitory law was made an issue in three fourths of the counties of the State, and in nearly all of these sheriffs were chosen duly pledged to perform their entire duty. In Topeka, the capital city, was made the most bitter fight of the liquor interest. The city was proceeded against, and a decision of the Supreme Court said that the city could not derive a revenue from the saloons. A case being made against the mayor, the same court decided that the State must proceed against him by criminal information in the court below. He resigned on plea of

ill health, a prohibitionist was elected by 492 majority, and all the saloons were closed.

Iowa's Legislature finally submitted an amendment to popular vote, June 27, 1882, it having been proposed and approved by the Legislature previous. There was a prohibitory law on the statute-books of that State, but its "wine and beer" clause gave practical exemption to the entire traffic in spirituous liquors. On its face, however, the prohibitory amendment had sole reference to wine and beer; and about 33 per cent. of the voters in Iowa were foreign-born. The contest here was carried forward chiefly by the Woman's Christian Temperance Union, which perfected an organization in every county, made a thorough canvass of the State, introduced a constitutional catechism among the children, and in four months accomplished an educational work as effective in its influences as it was surprising in its extent. The ablest temperance speakers were on the platform, in the pulpit, and on street corners, night and day. The literature of prohibition was scattered broadcast, but with unusual discrimination. The total vote was 281,-113, and prohibition won by a majority of 29,759. A test case being made up against it, the amendment was declared unconstitutional by the Supreme Court, on the ground of a clerical error in the records of the Legislature, by which it was originally passed. (See Iowa, page 445.) Thus nullified in its constitutional embodiment, the principle was taken by those who supported it directly into the political canvass of 1883, the Republican party approving and the Democratic opposing, and was made the leading issue. "A school-house on every hill-top, and no saloon in the valleys," became the Republican rallying-cry, and again prohibition won. A bill rescinding the "wine and beer" exemption of the existing prohibitory law was promptly passed.

Ohio followed in the work for constitutional prohibition. After passing the Scott high-tax law, the Legislature of that State in 1883 adopted two forms of amendment, or two amendments, one for prohibition, the other for license. Under the Constitution as it stood, no license laws could be enacted, but there might be, or there was, free trade in liquors, except as covered by a tax, while there might also be prohibitory enactments if the Legislature so desired. Both amendments were submitted at the regular election ensuing, October 5th. They were confusing in their antagonistic provisions, and the temperance people appeared for a short time in doubt as to what position should be assumed. Then they organized for the second, or prohibitory amendment, and in opposition to the first. Here, as in Iowa, the Woman's Christian Temperance Union led the campaign; but a Constitutional Amendment Association, composed mainly of voters, helped to bear its burdens. Of necessity the question became more or less mixed up with the party struggle then in progress. The Democratic party had declared for license, but was chiefly antagonizing the high-tax law; the Republican party openly supported the Scott law, and gave no help to prohibition. Yet for the third time in thirty-three years the people of Ohio, through a majority of those voting upon it, declared themselves against license and in favor of prohibition; but the prohibitory amendment was lost. It received, as counted and returned, 323,188 votes, out of a total of 721,310 cast for the several State tickets, and a majority of this total was required for its passage. The license amendment had less than 100,000, and besides these only about 100,000 voted against the second amendment. Of the 88 counties in the State, 83 gave an aggregate majority for prohibition of 4,315, and 46 of these gave individual majorities.

In Indiana a prohibitory amendment passed the Legislature of 1882, but was defeated in the Senate of 1883, because of an alleged error in the legislative record. In Connecticut such an amendment passed the House in 1882 by 140 to 20, but was beaten in 1883 by 115 to 83. In Pennsylvania, in 1881, it passed the House by 109 to 59, but failed in the Senate; in 1883, being reintroduced, it was amended in committee by a compensation clause, for the benefit of all persons whose property-rights the amendment might impair, and was killed by a vote of 151 to 27. Wisconsin lost the amendment bill in 1881, by lack of the necessary two thirds, though the vote stood 51 for to 39 against in the House; in 1883 the House vote was against it. New Jersey's upper House adopted the amendment in 1883, by 11 to 10, but the lower House defeated it by 29 to 27. Michigan, in 1881, gave, in the House, 63 for, 33 against; in the Senate, 21 for, to 10 against; but in 1883 there was not the necessary two thirds in favor. Maine legislatively adopted the amendment last winter by 91 to 30, and 22 to 2, in the two houses; it is now (1884) before the people. Massachusetts defeated it by 115 to 83; New York (1883), by 54 to 42, and 18 to 13; Nebraska (1882), by lack of two thirds; Illinois (1882), by 21 to 16 in the Senate, 66 for to 51 against in the House; Missouri (1883), by 68 to 59; West Virginia, by lack of two thirds; Texas gave it a majority of both houses in 1881, but lost it the next year; the Arkansas House gave it 66 to 17 in 1881, but the Senate did not concur; Minnesota lost it by 49 to 38; and Oregon passed it in 1883 by 52 to 6 in the House and 18 to 10 in the Senate, thus remitting it to another Legislature. Prohibition by constitutional amendment is now the settled policy of temperance-workers in nearly all the States.

Local Option.—Local prohibition by local option exists in sixteen of the thirty-five towns in Rhode Island; in about half the towns of Connecticut; in portions of five counties in New Jersey and in one entire, as also in two or three large towns; in fourteen out of twenty-three counties of Maryland, where vigorous

local-option campaigns have been carried on; in large areas of Alabama and Mississippi; in about half of West Virginia; in many counties of Texas, of North Carolina and South Carolina; in forty-two counties of Georgia; and in several counties of Missouri, Illinois, and Kentucky. Tennessee has local prohibition very largely through her four-mile law, which forbids the sale of liquor within four miles of a chartered institution of learning, outside of incorporated towns, and about one hundred towns have surrendered their charters, so as to come under the operation of the law. Arkansas has a similar three-mile limitation, applied by a majority of the people, women also voting. Potter county, Pa., has had prohibition many years by special law. The towns of Vineland, N. J.; Greeley, Col.; Pullman, Ill.; Bavaria, Ill.; St. Johnsbury, Vt.; and Millville, N. J., have absolute prohibition, the first three by provision in title-deeds. The entire Indian Territory has it by authority of the United States Government (declared in 1834, in a law "for the protection of the Indian tribes"), and the Cherokee nation also by their own constitution and laws.

High License.—High-license laws, considered prohibitory in effect, prevail in several of the States. In Arkansas, besides the three-mile limitation, which refers to a church as well as a school-house, the State fee is $300, and most counties require from $300 to $500 additional. In Missouri the lowest fee is $550, and this may be indefinitely increased by any town. Illinois has a fee of $150 for ale and beer, and $500 for distilled liquors, and every city, county, town, or village may prohibit the sale of intoxicants entirely, by majority vote. Michigan levies $200 tax on each wholesale and retail dealer in malt-liquors, and $500 on each wholesale dealer in spirituous liquors. In Nebraska the fee is $1,000, and every man wanting license must have the approbation of thirty freeholders, his petition must be published two weeks in the newspaper of largest local circulation, and if any objection be made to him he is debarred; he must also give $5,000 bonds, and must support all paupers, widows, and orphans, and pay the expense of all prosecutions, civil and criminal, which may be justly attributable to the traffic. Minnesota has a law quite similar. Sunday prohibition exists by statute in every State where restrictive laws have been enacted, but in all the large cities of all the license States it is but spasmodically enforced, as a rule, though generally observed by dealers in the smaller towns.

Effects of Enforcement.—As to the general enforcement of prohibition law, opinions differ. Maine, where it has been longest in operation, is usually cited to prove its failure or success. From the State and Government records these figures are gleaned: There are no distilleries or breweries in Maine. In 1883 the United States tax of $25 was paid by 813 persons in the State, including nearly 200 druggists, and because of the vigilant Government-detective service it was believed that this number represented all who were in any manner engaged in the traffic. All these were secret dealers, save the druggists and the dealers in seventeen cities and large towns. Counting the druggists as dealers, there was one dealer to about 800 inhabitants; in New York there is one to every 180, and the average number in the Northern license States is one to 210. The internal revenue collected in 1882, on the manufacture and sale of liquors, was four cents and three mills *per capita;* throughout the entire Union it averaged $1.71 *per capita.* There were 156 dealers in Portland in 1883, most of them secret. In the 14 cities, with a population of 177,863, there were 496 persons, including druggists, who paid United States tax, or one to 300 inhabitants. In 60 license cities of other States there was one dealer to 155 inhabitants. In 470 towns and plantations in the State there were but 220 dealers, or one to about every 2,000 inhabitants. In 355 towns and plantations not a single dealer was found. In two cities and fifteen towns the law is not enforced, and these reported 179 dealers; while in 12 cities and 142 towns, where the law is enforced, 473 secret or suspected places were reported, making in these places, all told, one dealer to over 1,000 inhabitants. Actual arrests in 60 licensed cities show an average number of 27 to every thousand population; in the fourteen cities of Maine, during the municipal year ending in 1883, the average number was 17 to every 1,000; in all the cities, except Bangor and Portland, it was 10 per thousand; and in Lewiston and Auburn it was but three. The State at large has one high criminal to every 1,600 inhabitants; New York, one to 690.

A multitude of senators, governors, judges, and other officials have testified that the law is a success, despite its confessed non-enforcement in certain places. Said Judge Davis, "The Maine law even now is enforced far more than the license laws ever were." In a letter written in 1882, Hon. James G. Blaine said: "Intemperance has steadily decreased in this State, since the first enactment of the prohibitory law, until now it can be said with truth that there is no equal number of people in the Anglo-Saxon world, among whom so small an amount of intoxicating liquor is consumed as among the 650,000 inhabitants of Maine." Perhaps the most impartial testimony given was furnished in 1881, by two special reporters sent by the "Toronto Globe." One of these was a prohibitionist and the other was opposed to prohibition. The latter found that "in the cities the law has been a partial failure, so far as uprooting the traffic or even the suppression of open bars is concerned; that this failure has been greatly exaggerated by quoting exceptional places or periods as typical of the whole State, and by the ingenious perversion of statistics; that in the rural

portions of the State, the Maine law has suppressed open drinking, and reduced secret drinking to a minimum, and may, therefore, be considered as effective as any other measure on the statute-book; that the class of liquor-sellers who defy the law are the same class of men who, under a license system, would sell liquor without license."

Constitutionality.—The constitutionality of prohibition has been repeatedly considered by the courts. In January, 1847, the cases of Thurlow *vs.* Massachusetts, Fletcher *vs.* Rhode Island, and Pierce *vs.* New Hampshire came up for hearing before the United States Supreme bench. In these cases license had been denied, and the decision covered two points—the extent to which licenses might be conceded, and the right to prohibit unlicensed sale. Chief-Justice Taney, in delivering judgment, said: "Although a State is bound to receive and permit the sale, by the importer, of any article of merchandise which Congress authorizes to be imported, it is not bound to furnish a market for it, nor to abstain from the passage of any law which it may deem necessary or advisable to guard the health or morals of its citizens, although such law may discourage importation, or diminish the profits of the importer, or lessen the revenue of the Government. And if any State deem the retail and internal traffic in ardent spirits injurious to citizens, and calculated to produce idleness, vice, or debauchery, I see nothing in the Constitution of the United States to prevent it from regulating and restraining the traffic, or from prohibiting it altogether if it thinks proper." Justice McLean concurred, saying that "in the exercise of that great and comprehensive police power which lies at the foundation of its prosperity" the State may "prohibit the sale," and "everything prejudicial to the health or morals of a city may be removed." Justice Grier said, "Police laws for the prevention of crime and protection of public welfare must of necessity have full and free operation, according to the exigency that requires their interference." Said Justice Catron, also concurring, "I admit, as inevitable, that if the State has the power of restraint by license to any extent, she has the discretionary power to judge of its limit, and may go the length of prohibiting it altogether."

The State courts which have declared unconstitutional the prohibitory laws passed on by them, have done so, without exception, on some technical ground and not as regards the principle. In Kansas a plea was made that the amendment contravened the fourteenth amendment to the Constitution of the United States, which provided that no State should pass any law which would abridge the privileges and immunities of citizens of the United States; but the Supreme Court decided otherwise.

In Foreign Countries.—In Great Britain, prohibition has made considerable progress. Sales without license are punishable by fine or imprisonment; and all licensed places, in the metropolitan district of England, must be closed from midnight on Saturday until 1 P. M. Sunday, and from 3 till 6 that afternoon, then from 11 at night until 5 A. M. Monday.

Ireland has a similar Sunday-closing law, which first took effect in 1878, save in the cities of Dublin, Cork, Waterford, Belfast, and Limerick; yet, notwithstanding these are great centers of population, the law reduced by $15,000,000 per annum, for four years, the consumption of beer and spirits; and, contrasting 1877 with 1882, there was a diminution in the arrests for drunkenness, throughout Ireland, of over 20,000.

In the Dominion of Canada, under the act of 1878, every county or city may petition the Secretary of State, and have a vote of the electors taken as to whether the liquor-traffic shall be prohibited or not, and if the majority favors prohibition it must stand until that vote has been repealed. In Ontario all licensed places must be closed from 7 P. M. Saturday till 6 A. M. Monday; and the council of any municipality may pass a local prohibitory by-law, or thirty electors may propose such a by-law, and demand a poll to determine its adoption.

Sweden started a temperance movement in 1835, which resulted in the Gothenburg plan of license, in 1858, whereby every individual is prohibited from deriving any private gain from the sale of spirits, or having any interest in extending their consumption. Licenses are sold by auction to a company organized for the purpose, which pays over the profits of all sales to the town or provincial treasuries to apply in reduction of taxes. In ten years, it is claimed, this system reduced drunkenness 40 per cent. By a permissive bill, also in operation now in Sweden, the local authorities may prohibit the traffic altogether.

Russia has the Gothenburg plan for the nation at large, and limits the traffic to one dealer in each village, with privileges equally restricted; while any commune can enforce total prohibition at pleasure.

Several towns and counties in Great Britain maintain prohibition. Saltaire has not had a drinking-place in many years. Bessbrook, Ireland, has 4,000 inhabitants, with no poor-house, no pawn-shop, no police-station. In Tyrone county, Ireland, there are 61 square miles of land and 10,000 people, without a public-house or (in 1870) a policeman. In 1,456 parishes in the province of Canterbury, containing over 230,000 inhabitants, and in 80 in the province of York, no public-house or beer-shop is permitted. On numerous private estates prohibition prevails; and there are large areas in the new portions of Liverpool and London where, by title-deed provisions, the sale of liquor is forever prohibited. One of these tracts, in the south of Liverpool, is one and a half by two miles in extent, and has 50,000 people. The annual death-rate ranges there between 10 and 12 per 1,000, while Liverpool,

as a city, is reckoned as having the largest death-rate in the United Kingdom, ranging from 25 to 35 per 1,000 annually.

The Arguments.—Advocates of prohibition base their arguments on the greatest good of the greatest number; the duty of Government to conserve general welfare; the right of the State to exact obedience by the citizen; the known tendency of intoxicating liquors to produce immorality, vice, and crime; their certain source of taxation, and their enormous national waste. Human brotherhood, Christian sentiment, moral need, and progressive civilization, it is held, demand the suppression of a traffic which cares for none of these considerations, but debases manhood, debars Christianity, and defiles the State. With John Stuart Mill, prohibitionists believe that "to tax stimulants, for the sole purpose of making them more difficult to be obtained, is a measure differing only in degree from their entire prohibition"; and the claim of "personal liberty," as opposed to prohibitory law, they meet with a further declaration by Mr. Mill that "the liberty of one man ends, however profitable it may be to himself, when it interferes with the well-being of another."

PROTESTANT EPISCOPAL CHURCH IN THE UNITED STATES. This Church is in communion with the Church of England (whence it derives its origin), and with all the branches of the Anglican Church throughout the British Empire and elsewhere. Its position and growth in the United States are of more than ordinary interest at the present time, inasmuch as it counts just one hundred years of life, as a church existing of and by itself in the republic of the United States, and enjoying the privileges of our country's laws and regulations in regard to religious bodies of every description. The year 1883 is further noteworthy in Episcopal Church affairs, because of the earnest and zealous effort put forth and carried out to completion, in order to give greater flexibility in the use of the Book of Common Prayer, and greater enrichment and fullness to the public services of the Church. The sources of information from which this article is drawn are, the Journal of the General Convention of 1883, Pott's "Church Almanac," and Whittaker's "Protestant Episcopal Almanac." The following table presents a summary of statistics of Church progress from 1880 to 1883:

Number of dioceses	48
Number of missionary jurisdictions	15
Bishops	68
Candidates for orders	401
Deacons ordained	409
Priests ordained	359
Whole number of clergy	3,627
Number of parishes	2,749
Missions	1,307
Corner-stones laid	140
Churches consecrated	311
Number of churches and chapels	3,732
Free churches and chapels	1,337
Rectories	1,159
Families	129,961
Baptisms (infant and adult)	134,080
Confirmations	75,560
Marriages	39,268
Burials	77,585
Communicants	364,125
Sunday-school teachers	33,900
Sunday-school scholars	314,910
Church hospitals	45
Church orphan asylums	48
Church homes	32
Academic and collegiate institutions	116
Theological and other institutions	72
Communion alms	$515,485 54
Offerings for diocesan missions	$583,672 82
Offerings for domestic missions	$649,468 04
Offerings for foreign missions	$357,778 46
Total of charitable offerings and income	$9,487,490 04
Total offerings for religious purposes	$28,912,731 03

PROGRESS BY DIOCESES.

DIOCESES.	Clergy.	Parishes	Baptisms.	Confirmations	Communicants.
Alabama	27	48	847	681	3,734
Albany	128	144	4,905	2,822	13,018
Arkansas	15	18	350	223	1,138
California	60	45	1,881	1,200	4,600
Central New York	96	111	3,881	2,447	12,848
Central Pennsylvania	96	166	3,594	2,146	7,486
Connecticut	184	166	5,390	3,132	21,044
Delaware	29	36	811	344	2,101
Easton	36	59	1,168	429	2,653
Florida	30	48	960	347	1,642
Fond du Lac	26	38	925	430	2,390
Georgia	38	54	1,583	916	4,768
Illinois	63	81	2,710	1,483	7,418
Indiana	34	46	1,169	658	3,854
Iowa	59	70	1,356	649	4,247
Kansas	30	31	528	426	2,048
Kentucky	36	46	1,370	981	4,862
Long Island	107	100	5,984	3,336	16,327
Louisiana	33	51	1,827	1,197	3,946
Maine	27	35	868	454	2,360
Maryland	175	196	7,457	4,454	22,805
Massachusetts	172	142	6,898	3,238	19,282
Michigan	68	108	3,540	2,097	8,472
Minnesota	79	102	2,434	1,451	5,565
Mississippi	26	47	918	567	2,401
Missouri	60	85	1,685	1,105	5,885
Nebraska	36	35	972	495	2,040
New Hampshire	32	34	474	380	2,062
New Jersey	91	115	3,208	1,685	8,381
New York	318	202	15,808	8,982	36,675
North Carolina	76	119	2,297	1,188	6,323
North'n New Jersey	84	75	4,608	2,495	9,273
Ohio	74	100	2,410	1,519	7,559
Pennsylvania	200	147	10,000	5,583	27,744
Pittsburg	56	74	2,593	1,332	6,206
Quincy	28	45	731	436	1,926
Rhode Island	47	49	2,295	1,163	6,995
South Carolina	49	83	1,632	897	5,097
Southern Ohio	49	57	1,358	1,090	5,651
Springfield	48	41	1,118	786	2,129
Tennessee	39	57	1,203	898	3,247
Texas	18	32	1,058	450	2,400
Vermont	34	47	865	558	3,529
Virginia	151	252	4,745	2,797	14,158
West Virginia	24	33	667	586	2,135
Western Michigan	28	43	985	502	3,111
Western New York	106	104	3,698	2,111	10,652
Wisconsin	77	92	1,519	1,025	4,789
Missionary Jurisdictions.					
Colorado and Wyoming	32	30	1,227	407	2,111
Dakota	20	19	117	85	1,295
Idaho and Utah	12	9	595	181	728
Montana	7	14	380	171	656
Nevada	7	14	516	132	302
New Mexico and Arizona	7	7	71	54	239
Niobrara	14	27	1,329	301	794
Northern California	11	17	496	261	504
Northern Texas	10	15	498	216	1,134
Oregon	19	26	583	241	589
Washington	10	11	311	104	402
Western Texas	13	20	482	255	1,104
Cape Palmas	14	16	222	42	408
Japan	8	11	95	53	106
Shanghai	18	12	235	106	247
Total	3,627	2,933	134,080	75,560	364,125

GENERAL COMPARISON.

DATE.	Number of dioceses.	Number of clergy.	Number of communicants.	Population.
1790	7	190		3,929,214
1800	8	210, increase 10 per cent	11,978	5,308,483
1810	9	218, " 3 "		7,239,881
1820	13	331, " 50 "		9,638,322
1830	20	534, " 60 "		12,866,620
1840	25	1,069, " 100 "		17,069,453
1850	29	1,589, " 50 "	87,794	23,191,876
1860	38	2,156, " 30 "	146,583, increase 66 per cent	31,443,321
1870	40	2,888, " 40 "	220,000, " 50 "	38,558,371
1880	48	3,482, " 21 "	344,789, " 56 "	50,152,636

The General Convention.—This body, which is the supreme legislature in the Episcopal Church, meets triennially in the place appointed from time to time. It assembled this year in Philadelphia, October 3d, and continued in session until October 26th, inclusive. There were about fifty bishops present, and also clerical and lay deputies from forty-eight dioceses and two missionary jurisdictions. The Convention consists of two houses, which hold sessions as distinct bodies, viz., the House of Bishops and the House of Clerical and Lay Deputies; but concurrent action (as in the case of the Senate and House of Representatives at Washington) is necessary to valid legislation. In addition to regular business requiring attention, such as action on proposed amendments to the Constitution and Canons, reports of standing and special committees, the state of the church, etc., the chief feature of interest to church people at large was the very full and able report, and its free and careful discussion, of the joint committee on the Book of Common Prayer, appointed three years ago. The entire proceedings are presented in the "Journal of the General Convention," as a supplemental journal.

Domestic and Foreign Missions.—The Board of Missions consists of the bishops of the Church, of the members of the House of Deputies and of the Board of Managers. It holds its sessions at the same time and place as the General Convention. The Board of Managers consists of the bishops, the treasurer of the board, and fifteen laymen appointed triennially. This board is charged with all the powers of the Board of Missions during the interval between the triennial meetings, and divides its work between a Domestic Committee and a Foreign Committee, with headquarters in New York.

Domestic Missions.—Sept. 1, 1882, to Sept. 1, 1883. Missionaries (13 missionary jurisdictions and 25 dioceses); bishops, 14; other clergymen (white, colored, Indian), 425; teachers, other helpers, etc., 45; total, 484. The financial condition was as follows:

Collections, legacies, etc.	$272,082 61
Expenditures (thirteen missionary jurisdictions and twenty-nine dioceses)	165,326 16
Missions among Indians and colored	61,440 42
Office and other expenses	14,246 98
Cash in bank	31,069 10
Total	$272,082 61

Foreign Missions.—Sept. 1, 1882, to Sept. 1, 1883. Missionary bishops, 3; other clergy (white and native), 87; teachers, helpers, etc., 154; total, 194. The financial condition was as follows:

Collections, legacies, general fund	$142,571 95
Specials, etc.	16,358 55
Treasury overdrawn	3,711 34
Total	$162,641 84

The Woman's Auxiliary to the Board of Missions renders efficient aid in the work of all the departments, by means of parochial, city, county, and diocesan associations of ladies, formed for the purpose of raising money, preparing and forwarding boxes, and otherwise helping on the missions of the church.

Money raised for domestic, foreign, freedmen, and Indian missions	$47,627 75
Boxes for the same (1,540 in number), value	109,619 13
Total	$157,246 88

The American Church Missionary Society (also auxiliary to the Board of Missions) has employed during the year, in 17 dioceses and missionary jurisdictions, 40 missionaries. The financial condition was as follows:

Receipts from parishes, etc.	$12,644 23
Receipts for foreign missions	261 08
Balance in hand Sept. 1, 1883	2,894 10
Total	$15,799 41
Boxes of clothing sent to missionaries	28
Boxes of clothing, value	$3,933 88
The society has also in legacies, securities, etc., over	$31,000 00

The Mexican League, in aid of church work in Mexico, reports that during the past three years (Sept. 1, 1880, to Sept. 1, 1883) it has contributed, in both general and special, through the Foreign Committee, $54,968.39. The interest in this work is much abated, owing to various charges and ill rumors in regard to Bishop Riley's doings, as well as a general "muddle" in Mexican church affairs. The whole subject was brought up at the meeting of the Board of Missions in October, but no satisfactory result was reached.

The American Church Building Fund Commission, established in 1880, is doing a good work. The object proposed was to create a fund of $1,000,000 to aid in building new churches in any diocese or missionary jurisdiction, and, if possible, to gather this sum within three years. Although the commission has not been able to accomplish that grand result, it has gotten well under way, and looks forward with confidence as to ultimate success.

A large number of applications for loans and gifts was received, and to the extent of ability help was granted. The treasurer reports (from Jan. 1, 1881, to Sept. 1, 1883) that loans were made to eight churches, amounting to $8,400, and gifts amounting to $415.20. Receipts during the same period, $50,471.77.

The Society for promoting Christianity among the Jews (auxiliary to the Board of Missions) reports steady though not rapid progress. During the year eight new missionaries were appointed, and three new missionary schools and five new industrial schools were established. Three new mission-houses have been secured. Aid has been given to the parish clergy of towns and villages in local work among the Jews, through thirty-six dioceses and ten missionary jurisdictions. Total number of workers has been 223, the Jews being reached in 202 cities and towns.

Receipts, etc. (from April 1, 1882, to Sept. 1, 1883)	$29,909 20
Expenditures for schools, salaries, etc.	27,380 67
Balance to new account	2,528 53
Total	$29,909 20

General Condition of Church Affairs.—During the year 1883 two bishops have died, viz., Bishops Talbot and Pinkney (see OBITUARIES, AMERICAN), also sixty others of the clergy. Five of the clergy have been raised to the Episcopate, viz., H. M. Thompson, Assistant Bishop of Mississippi; D. B. Knickerbacker, Bishop of Indiana; H. C. Potter, Assistant Bishop of New York; A. M. Randolph, Assistant Bishop of Virginia; and W. D. Walker, Missionary Bishop for Northern Dakota. The Committee of the General Convention on the State of the Church note the great deficiency in numbers of candidates for orders, and attribute this deficiency to various causes, such as the length of time required and the great expense incurred in securing proper education for the ministry; the frequent parochial changes; and the lack of provision for old age and infirmity.

The Church Temperance Society is spoken of in high terms, and earnest hope is expressed that it may be an efficient helper in "checking the ravages of that sin which, while not so general in America as in some localities abroad, has, it can be averred without extravagance of speech, consigned more to premature graves than war, pestilence, and famine combined."

As illustrating the present spirit of the Church, the committee's report calls attention to the fact that "cathedrals, church schools and colleges, hospitals and homes, have grown apace in number and efficiency. Dioceses have been subdivided into districts for more effective missionary work in their own borders, bringing clergy and laity of common centers into more frequent counsel as fellow-helpers. Deaconesses and sisterhoods have been multiplied, to do what only holy women with a distinctive dress and under diocesan direction can do. Guilds, in many leading parishes, have set all their membership to active parochial work. Church music has made progress; so that what was ostentatious and unseemly in the house of God has given place to that which is classical, dignified, and churchly. And whereas, only forty years ago, there was but a single parish in all the land which had the Eucharist weekly, there are now some three hundred parishes where it is celebrated as the central act of divine worship, at least on every Lord's day. The enriched Book of Common Prayer, with the new Lectionary, is hailed with general delight, as not the least among the increased instrumentalities for pulling down the strongholds of sin, Satan, and death, and as commending our branch of the kingdom of our blessed Lord as pre-eminently adapted to the composite character of the American people."

PURCELL, John Baptist, a Roman Catholic prelate in the United States, born in Mallow, Ireland, Feb. 26, 1800; died in the Ursuline Convent at St. Martin's, Ohio, July 4, 1883. He received a fair education, and in his eighteenth year came to America. On examination by the faculty of Asbury College, Baltimore, he was granted a certificate, and he soon after obtained a place as private teacher in a family in Queen Anne county. In June, 1820, he entered Mount St. Mary's College at Emmittsburg, Md., and prosecuted his studies there for three years.

In the autumn of 1823 he received from Archbishop Marechal, of Baltimore, the four minor orders of the Roman Catholic Church. Early in 1824 Mr. Purcell sailed for France, to complete his studies in the seminary of St. Sulpice, at Paris and Issy. He was raised to the priesthood, in Notre Dame Church, with three hundred others, on May 21, 1826. On his return to the United States, the next year, he was appointed Professor of Moral Philosophy in Mount St. Mary's College. He also aided Dr. Bruté in teaching theology, and at the same time attended to the regular duties of priest in the neighboring congregation. In 1829 he became president of the college, which office he held for four years.

Father Purcell had been a priest for little more than seven years, when, by pontifical bull, in May, 1833, he was appointed Bishop of Cincinnati. He was consecrated to this office in Baltimore Cathedral, October 13th, and installed in the Cathedral Church in Cincinnati, Nov. 14, 1833. At this date there was only one church of his denomination in Cincinnati, and his diocese covered the whole State of Ohio. His labors, consequently, were arduous and incessant. He obtained relief as to episcopal work proper by having Cleveland diocese set off in 1847, and the diocese of Columbus in 1868. He was very active and industrious in founding churches in nearly every considerable town in the State, as well as in establishing an ecclesiastical seminary, orphan asylums, protectories, colleges, gymnasiums, convents, houses of education and religious houses, hospitals and free schools, and various religious orders. In Cincinnati and its

immediate suburbs there are now over thirty Roman Catholic churches.

In 1839 Bishop Purcell was made assistant prelate at the pontifical throne, and in 1850 he was promoted to the archbishopric of the province of Cincinnati. Being in Rome, in 1851, he received the pallium from the Pope's own hands. The Vatican Council was held in 1869–'70, and Archbishop Purcell was one of the American prelates who were present and took part in its discussions and proceedings. On the special point of the defining of the Pope's infallibility and making it an article of faith, he was constrained to record his vote against it. On two occasions the archbishop showed himself to be a very able debater and an effective public speaker. The one was in 1837, when he held a discussion for seven days with Alexander Campbell, founder of the sect of Disciples, or Campbellite Baptists. The discussion was published and widely circulated. The other occasion was later, when, at the age of threescore and ten, he encountered an infidel orator, named Vickers, and defended Christianity. This discussion also was published under the title, "The Roman Clergy and Free Thought" (1870). Other publications of Archbishop Purcell's were Lectures and Pastoral Letters; an introduction to the American edition of Kenelm H. Digby's "Mores Catholici, or Ages of Faith" (3 vols., 1847); Diocesan Statutes, Acts, and Decrees of Three Provincial Councils held in Cincinnati; and a series of school-books for use in Roman Catholic schools in his diocese.

The latter years of this prelate were much disturbed by financial difficulties. Like some other Catholic bishops and priests in America, Archbishop Purcell permitted his brother, the vicar-general, to receive money on deposit, at interest. Through bad management and carelessness, though with no purpose of dishonesty or fraud, his diocese was found to be a loser to the amount of $3,500,000. In December, 1878, the archbishop assumed the whole responsibility for these transactions and made a public statement, saying that he was very deeply in debt, and unable to meet the demands upon him. A large number of suits was brought against him, and he made an assignment of all his property, real and personal, to his brother, the Rev. Edward Purcell, who in turn assigned the property to John B. Mannix, an attorney, for the benefit of the creditors. The property assigned included the archbishop's residence, the old St. John's Hospital building, the cathedral school, and some land on the outskirts of the city. Most of the accounts with the depositors, it was found, had been kept on loose bits of paper, many of which were lost, and some, having been made over thirty years ago, were almost illegible from age. In the eight years 1871–'78 he had paid about $580,000 in interest, and before the beginning of that period he is supposed to have paid in the same way $1,500,000.

The former assignment having been unsatisfactory to some of the creditors, Archbishop Purcell made a personal assignment of his property, March 13, 1879. Three days later the trustees appointed to take charge of the property made their report. They found that there were 3,485 creditors, presenting claims to the amount of $3,672,371.57. Besides this, the Very Rev. Edward Purcell individually owed $117,000 and $85,000, the latter being secured by a mortgage on real estate. They were at a loss, they said, to ascertain the disposition of all this property. They saw no reason to suspect dishonesty or intentional fraud, but they thought that bad investments, shrinkages, misplaced confidence, and unbusiness-like management had caused the trouble. The archbishop thereupon published a letter, saying that the indebtedness of the diocese did not exceed $1,000,000 in equity. A large part of the debt, he affirmed, was accumulated through paying interest. For twenty years, he further declared, he had supported the Diocesan Seminary without taking a collection. He had bought a church library of 16,000 volumes, and had brought many priests from Europe. His brother Edward, he said, had never put a dollar of the church money to his own use. He freely acknowledged that he was honestly indebted to his 3,000 creditors, and thanked the people for their offers of assistance. Up to October, 1879, the amount collected toward defraying this vast debt was not more than $75,600—not enough, in fact, to pay the interest since the assignment. Early in 1883 the debt still amounted to $3,500,000. The litigation growing out of the receiving of moneys on deposit by Very Rev. Edward Purcell, vicar-general and brother of the archbishop, was at last decided by the court, which gave the case a long and patient hearing. The archbishop, having on his brother's insolvency, assumed his liabilities, the question arose, what property became liable by this assumption of the debt. The creditors claimed everything that stood in his name. The court (Smith, Justice) held that property acquired and improved by him as bishop, with means acquired by him in that capacity, was liable for such a debt; but that churches, schools, etc., erected by congregations from their own means, were not liable, although by a rule of the Church the legal title of the realty was in such bishop, and that such congregations were liable to the creditors only to the extent of loans or advances made to them by the bishop.

Q

QUEBEC, a province of the Dominion of Canada. Area, 188,000 square miles; population in 1881, 1,359,027.

The People. — The inhabitants are chiefly French Roman Catholics, though many English and Scotch Protestants occupy the counties east of the St. Lawrence along the United States border. These are termed "The Eastern Townships," and are much in advance of the districts farmed by the French. Many of the French inhabitants are descendants of Scottish soldiers, who, seeking service in the armies of France before and during the reigns of William III and Anne in England, were disbanded and settled in the province. Such names as De Ramsay, De Murray, D'Alexandre, and De Napier, are still common among the French of these districts. The prevailing language is French, though in Quebec and in Montreal both tongues are familiar to the people.

The original tenures, or large farms, which, as a rule, were located along the rivers, have been divided and subdivided for generations, each subdivision still retaining a frontage on the river or highway, until now it is not uncommon to see a farm only a few rods wide and over a mile long. As the French Canadian builds his cottage in the most picturesque spot along the river-bank, the scene presented is in many instances very animating, closely resembling one long, straggling village. In some of the more remote localities the parish priest is still the shepherd of the flock in more than spiritual matters. He directs their voting at elections, controls their conduct at fairs and on market-days, and even has the grain garnered in his barns. Tithes, in Quebec Province, or any rates levied by the authority of the Roman Catholic Church on the property of Roman Catholics, no matter whether leased by a Protestant or not, are collectable by law.

Soil and Climate.—On the whole, the soil of Quebec is not good. The Eastern Townships, and some districts north of the St. Lawrence and along the Ottawa, are good, especially for grazing; but as a grain-growing province it is not a success, compared with Ontario.

The cold currents from the Arctic regions, entering the Gulf of St. Lawrence through the strait of Belle Isle, preserve a continuous frigid temperature along the northern shore of the gulf. This influences the climate of the surrounding country to a considerable extent. A scheme is proposed to bridge or embank the strait of Belle Isle from Newfoundland to the mainland, and thus force the cold currents along the east coast of that island. By this plan, it is also claimed, winter navigation of the St. Lawrence gulf and river, as far as Quebec, would be rendered comparatively easy. At Quebec, in latitude 46° 49′, longitude 71° 16′, the mean annual temperature rarely exceeds 38°. It is not alone the general temperature that renders the northern and northeastern portions of the province comparatively worthless, but also the certainty of early and late frosts destroying the crops. The maximum summer heat is as great as Toronto's. The means for June, July, August, and September, respectively, are 58°, 68°, 61°, 55°.

Cities and Ports.—The important cities and towns of Quebec, with their population in round numbers, are: Montreal, 140,000; Quebec, 62,000; Three Rivers, 9,000; Levis, 8,000; Sherbrooke, 8,000; Hull, 8,000; St. Henri, 6,000; St. Jean Baptiste, 6,000; Sorel, 6,000; St. Hyacinthe, 5,000.

The ports are Quebec, Montreal, Three Rivers, Sorel, and Rimouski, all on the St. Lawrence, and accessible for ocean-vessels of all sizes. Gaspé and New Carlisle are on the shores of the St. Lawrence and Chaleur gulfs. The great bulk of the trade of the province is carried on from Montreal and Quebec.

Industries.—In Quebec, as in Ontario, the chief industry is farming. Unlike Ontario, the grazing products in Quebec are in excess of the agricultural; the exports of animals and their produce in 1882 being $10,694,531, and of agricultural products only $9,551,745. Of the former, $8,875,318 were shipped to Great Britain, and $1,723,602 to the United States; and of the latter, $6,445,440 went to British ports, and $2,021,847 to American. Peas, wheat, flour, oats, hay, rye, and potatoes are the chief agricultural products.

The products of the forest rank next in importance, the exports amounting to $9,280,238. Of this, $7,184,236 went to Great Britain, and $1,409,824 to the United States.

The exported manufactures amounted only to $1,247,147. These were chiefly leather, woolens, wooden-ware, ships, and soap. To Great Britain were sent $705,330; to the United States, $369,306; and to Newfoundland, $108,008.

The export value of the fisheries of Quebec was $773,785; but there is a large home consumption of Quebec fish. Indeed, very many residents along the lower part of the river and the gulf earn their livelihood in this manner, depending almost entirely on fish for food.

Mining is in its infancy in Quebec. The exports were valued at $519,200, chiefly gold-bearing quartz, copper-ore, and phosphates.

Education.—The educational department of Quebec is presided over by a superintendent, who is the executive officer of a Council of Public Instruction. This council is appointed by the Lieutenant-Governor, and is composed of sixteen Roman Catholics and eight Protestants. In all matters specially affecting their own schools, the Roman Catholic and Protestant commissioners act independently. Each municipality

selects a board of five commissioners, who appoint the teachers and have a general oversight. The schools are open to children from five to sixteen years of age, but the commissioners have power to charge a fee, if they deem it proper, between the ages of seven and fourteen. The estates of the Jesuits form a fund, which must be increased each year by a sufficient grant from public moneys to raise the amount to $88,000. The annual grant amounts to $155,394, and the total sum raised for educational purposes is $2,000,000. The value of the buildings used for superior education in the province, and the annual expenditure in connection with them, are:

INSTITUTIONS.	Value of buildings.	Annual expenditure.
Universities	$583,830	$104,978
Classical colleges	918,929	256,111
Industrial colleges	201,292	45,145
Academies for boys	237,389	74,144
Academies for girls	914,185	208,178
Model schools	864,309	309,848
Normal schools	.....	42,371

There are in the libraries of the institutions for superior education 259,318 volumes.

There are in the province 1,010 school municipalities and 4,039 school-houses, with a registered attendance of 235,574 pupils, and an average attendance of 180,370.

R

RAILWAYS, ELECTRIC. So long as we were confined to the direct generation of electric currents from chemical action in a battery, any attempt to utilize electricity in industrial operations involving large power would have been hopeless. But the development of the mechanical generation of electricity has rendered feasible the use of this agent as a motive power in a great variety of cases.

By means of the modern dynamo we can convert mechanical into electric energy upon the largest scale, and by reversing the process we can obtain from this electrical energy mechanical power. The dynamo supplies us with electric currents if we rotate its armature, or this will revolve if we pass electric currents into it. Since the generating dynamo may be at one place, and the motor which is operated by the currents supplied by it at another, we are not limited to using the power at or very near its place of production. As the distance between the two may be very considerable, and the loss in conveyance small, this arrangement gives us a means of transmitting and utilizing power not heretofore possessed, and one which can hardly fail of being of the utmost industrial importance. Among the applications of electricity as a motive power none promises to be more important than its use in the propulsion of railway-cars. Aside from the advantages due to the absence of smoke and cinders, this mode of propulsion possesses distinct advantages on the score of economy and greater safety. With the present system of railway-travel a number of cars linked together are drawn by a locomotive which must be heavy to obtain sufficient adhesion to the rails to move its load. In consequence of this great weight of the motor, the whole equipment of the road—rails, road-bed, bridges etc.—must be of great strength. In the case of electric propulsion it is not necessary to have anything corresponding to a locomotive; each car can be provided with its own electromotor, and all of these can be operated together from a cab at the head of the train with the same ease with which continuous brakes are now manipulated. All the wheels of a train can thus be utilized as drivers, and hence great weight is not necessary to give sufficient adhesion. The permanent way can therefore be much lighter, and consequently less costly, while the wear and tear would be greatly reduced. On account of the diminished weight of trains a collision would be a much less serious matter than at present. We may not only obtain with the electric railway lessened damage in case of collision, but we can by a proper construction, as we shall see further on, render collision impossible.

Electricity may be applied to the propulsion of cars in two quite different ways. In one case the current is supplied to the electromotors from storage-batteries carried by the cars. This method requires no change in the ordinary road-bed, and would not necessarily introduce new methods of operating railways. It is particularly well adapted to the operation of cars in the streets of cities, but its adoption is hardly feasible to-day, as the storage-battery upon which it depends has not yet reached a sufficiently perfect condition to make it economical. In the second case the current is supplied to the motors on moving trains from stations along the line of the road through properly placed conductors. This method requires a construction of the road throughout with reference to the electrical conditions which properly constitute it an electric railway. Several different forms of the electrical railway are possible, depending upon the method by which the current is conducted to the motors. By one method the two rails are used as conductors, the current going out by one rail and returning by the other. It passes to the electro-motors through the wheels of the train, those on opposite sides being insulated from each other. The chief difficulty with this construction is that of insulating the outgoing rail perfectly enough to avoid a large loss by leakage. It is impracticable in cities, on account of the danger arising from touching both rails at once, and thereby diverting a portion of the current through the person or

animal forming a cross-circuit to the conductors. As, for the economical working of an electric railway, currents of high tension are necessary, this danger would be too great in such situations to tolerate such a disposition of the conductors. In the ordinary railway this feature would be of little consequence, as the track is not exposed to the public except at the crossing of roads, and this can be readily provided for. The leakage would be, however, in this case prohibitory of the use of these rails in this way. Professsors Ayrton and Perry have modified the two-rail system in such a way as to overcome the difficulty from leakage, as we shall see below in considering their construction. Other inventors have essayed to overcome it by the use of a third rail or conductor for the outgoing current, utilizing both rails for its return. This conductor may be placed midway between the rails, but elevated above them, as used by Siemens, or sunk in a central trough, as in the Edison and Field system, or it may be placed on posts at one side of the rails, the connection then being made between it and the car by a flexible conductor. The contact between this latter and the suspended wire is made by means of a little traveling carriage or trolly. This method of receiving the current would evidently not do for rapidly moving trains, though perfectly feasible for street and suburban railways. Where high speeds are required, the third rail must be placed so that there may be rigid connection between it and the moving car, the current then being taken off by means of a rolling or other suitable metallic contact.

Siemens Railway.—The first electric railway was constructed by the firm of Siemens and Halske, of Berlin, at the exhibition in that city in 1879. The line was of two-foot gauge and 2,700 feet long. The current was conveyed to the car, which was of sufficient size to carry twenty passengers, by a third rail placed in the center of the track and supported upon insulating wooden blocks. The great success of this experimental line led these constructors to build soon afterward the Lichterfelde line, near Berlin, for actual traffic. This was constructed on the two-rail system, both rails being placed upon insulating sleepers. The gauge is three feet and the length about a mile and a half. It is worked by two dynamo-machines developing a total of 12 horse-power, and has been in operation since May, 1881. Another line of about the same length has also been built between Charlottenburg and Spandauer Bock, while a shorter one has been constructed in Kostverloren Park, near Amsterdam. A short line, something less than half a mile in length, has also been put in operation by the same firm at the Zankerode colliery in Saxony. The rails are not used in this

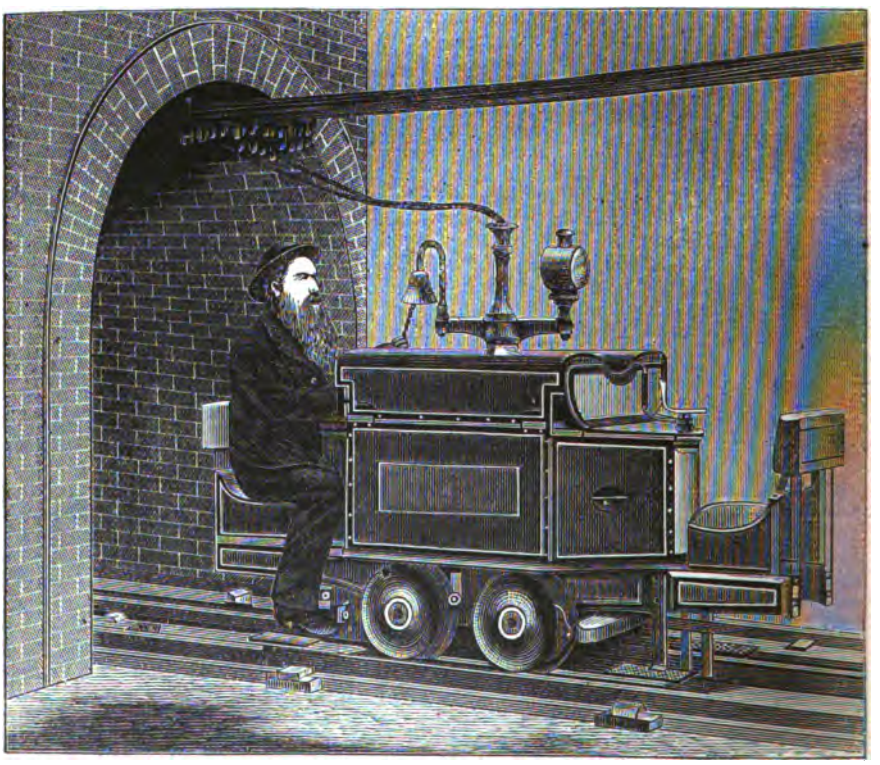

Fig. 1.—Siemens and Halske's Electric Engine.

case for the conduction of the current, as they are very roughly laid, and have to be shifted from time to time. The electric conductors are therefore placed along the roof of the mine. They consist of inverted T-iron rails, on which contact-carriages freely slide. These are connected with the motor by flexible wires. The engine, shown in Fig. 1, consists of a carriage eight feet long by two feet seven inches wide, which weighs one and one third tons. The electro-motor is placed on it lengthwise, the connection between it and the wheels being made through the medium of bevel-gearing. It is reversible, and handles for making and breaking the current, and the brake levers, are placed at each end, so that the driver always faces in the direction in which the engine is moving. The engine is capable of developing sufficient power to enable it to draw a load of eight tons at a rate of seven and a half miles an hour. This road has been in operation since October, 1882, and has fully realized the anticipation of the constructors and the owners of the mines. At the Paris Exposition of 1881, Sir William Siemens had in operation a road about 1,600 feet in length, and of the ordinary gauge, 4 feet 8½ inches. In this case the electric conductors were suspended overhead, and consisted of tubes provided with longitudinal slits, for the passage of flexible conductors, which were connected with metallic bolts sliding in the tubes. Fully 95,000 passengers were conveyed over this line in seven weeks. The longest electric railway which has yet been built is that constructed by the London firm of Siemens Brothers, in the north of Ireland, between Portrush and Bushmills, a distance of six miles. The line is a single-track one of three-foot gauge, and is laid at one side of the country road, following its grades, which are heavy, being in some parts as steep as 1 in 35, and curves which are often sharp. The system employed is the three-rail one, but the conductor, instead of being between the rails, is placed at the side of the road-bed, 22 inches from the inner rail, and 17 inches above the ground. It consists of a T-iron rail weighing 19 pounds to the yard, and is carried upon wooden posts boiled in pitch to render them better insulators. The current is taken by the car from the conductor by means of two steel springs, one at each end, and, as the rail is of iron, the wear is very slight. When the railway crosses roads, the conductor is carried underground. These gaps, when not too wide, are readily bridged over by the car, as the forward spring makes contact with the rail at the farther side of the cross-road before the rear spring leaves the rail. When the gap is too wide to allow this, the circuit is broken by the engineer, and the car is carried across it by its momentum. There are five points on the line at which the up and down cars pass each other. These are situated on inclines, and are arranged so that the car ascending the hill is in contact with the conductor, while the down car descends by gravity. The course of the current from the conducting rail through the car to the return rails is to a switch worked by a lever, by which resistance-coils can be placed in or out of circuit, then through the electro-motor to the wheels by which it reaches the rails. The direction of motion of the electro-motor is reversed by altering the position of the brushes on the commutator. The motor is placed in the center of the car, beneath the floor, and is connected with the axle of one pair of wheels by gearing. The reversing and brake levers are placed at each end of the car, so that it can be operated from either end. The rails of the permanent way are laid in the usual manner, and connected together by fish-plates, these being supplemented by strips of copper to insure good electrical contact. The lengths of the conducting rail are also joined in this manner. The resistance of the line, conductor, and return rails, is but ·23 ohm per mile. The loss due to resistance does not exceed 4 per cent. when four cars are running, each requiring four horse-power. The insulation is from 500 to 1,000 ohms per mile, and the loss from leakage is under 5 per cent. when four cars are running. It is intended to operate the generating dynamo by means of water-power, but at present an ordinary portable agricultural engine of 25 horse-power is used for this purpose. This is not particularly economical, but tests made have shown that even with it the road can be operated more economically than with a steam tramway-engine. The tests were for a travel of 812 miles, each train having the same passenger capacity. They showed that the cost of operating the road by means of the locomotive was something over £8 ($40), and that by electricity a little less than £6 ($30), giving a saving by the use of the latter of 25 per cent.

Edison and Field Railway.—Mr. Edison was one of the first to turn his attention to the electric railway. While still occupied in designing his system of incandescent electric lighting, he put in operation at Menlo Park an experimental line. On this the current was conveyed to the electro-motor through one rail, and returned by the other. The electro-motor was mounted upon a separate car, as in some of the Siemens roads. The use of the two-rail system was simply experimental, the design being in actual construction to use three rails, the conductor being placed between the two rails in a sunken trough. This is covered over, so as to leave only a narrow slit, through which the arm carrying the contact can move freely. In the early part of the year the interests of Mr. Edison were combined with those of Mr. Stephen D. Field, who has patented a number of features pertaining to an electric railway system, and the company controlling these combined interests exhibited their system at the Chicago Exhibition of Railway Appliances.

The track was laid in the gallery of the main exhibition building, and was of the form shown

in Fig. 2. The current was conveyed to the motor through a third rail placed between the two others, which was not, however, sunk, as it would have been in a permanent surface structure. The contact between this rail and the car was made by stiff wire brushes pressing on each side of the rail, which were on the end of a lever reaching down from the car.

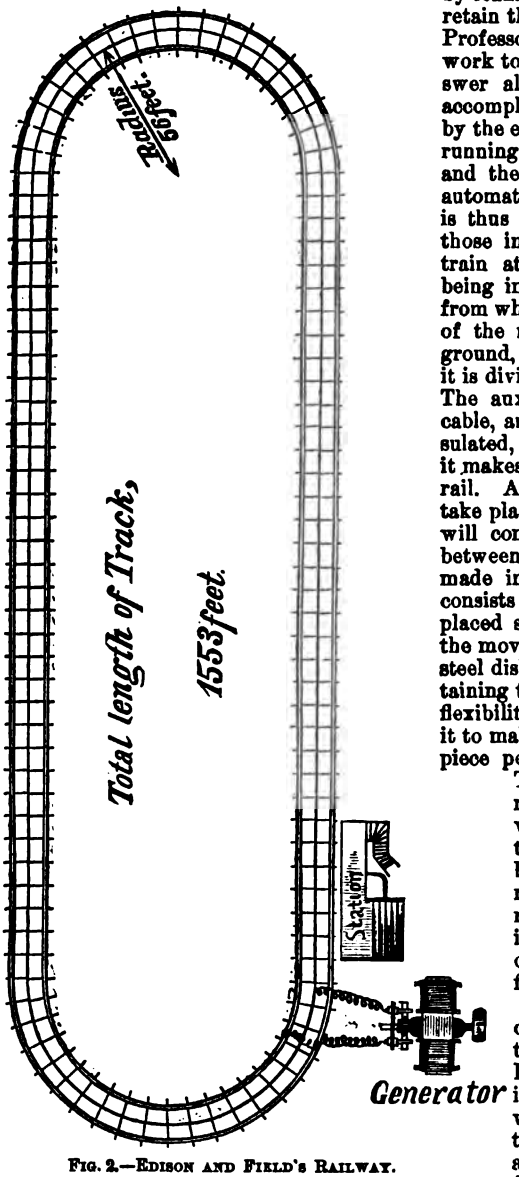

FIG. 2.—EDISON AND FIELD'S RAILWAY.

The road was in operation from the 9th to the 23d of June, and made in this time 1,588 trips, and carried 26,805 passengers. The speed at which the trains were run was eight miles an hour. This could easily be exceeded, but the insecurity of the gallery in which the track was laid prohibited anything above this.

Ayrton and Perry's Railway.—Realizing the difficulty of insulating the tread rails in a sufficiently perfect manner to prevent undue loss by leakage in long lines, and yet desiring to retain the advantages of the two-rail system, Professors Ayrton and Perry set themselves to work to modify the latter system so as to answer all the requirements. This they have accomplished in a remarkably simple manner, by the employment of an auxiliary conductor running along one of the rails, between which and the rail electric connection can be made automatically by the moving train. The road is thus divided electrically into sections, only those in the immediate neighborhood of the train at each moment, as it sweeps along, being in circuit. The whole of the tread-rail from which the current is taken by the wheels of the moving car is well insulated from the ground, and the successive sections into which it is divided are also insulated from each other. The auxiliary conductor is in the form of a cable, and can therefore be very perfectly insulated, as can also the connections by which it makes contact with the sections of the tread-rail. Any leakage that occurs can therefore take place only from these short sections, and will consequently be inconsiderable. Contact between the cable and the tread-rail may be made in a number of ways. One of these consists in providing a short length of rail, placed so as to be depressed by the wheels of the moving car, and resting upon a corrugated steel disk, which forms the top of the box containing the exposed contact of the cable. The flexibility of the disk allows a pin carried by it to make contact with a suitable conducting-piece permanently connected with the cable. The box, which may be of cast-iron, is made tight, so that it is always dry within, where the exposed portion of the conductor is. This box may be bolted to a sleeper at the side of the rail or sunk in the ground, as occasion may require. The cable may be simply insulated with gutta-percha or rubber, or it may be carried in a metal tube filled with paraffine.

The insulation obtained by this mode of construction is but one of its advantages, and that not the most important. Its great advantage lies in the fact that it provides an automatic block system, which absolutely prevents a following train from running into the one ahead—a block that is determined by the conditions of operation, and is not dependent upon the vigilance of engine-driver or signalman. To obtain this result the above-described arrangement is modified somewhat. The road is divided into a number of sections or blocks, a mile or more in length. By the movement of the train the current is put on the section

which it is entering and turned off from the one which it is leaving. The train thus always puts between itself and a following train a complete section, which can not be supplied with current until the forward train has entered the next section. Any following train entering this blocked section is quickly pulled up, both because it is deprived of current, and because it is powerfully braked by the electro-motor, which by the conditions of the block becomes at once a generator on a short circuit. In leaving this section the preceding train not only cuts off the supply of electricity to it in such a way that it can not be turned on again by any following train until the first is in the second section ahead, but it connects the two rails electrically together. There is therefore a complete metallic circuit, of practically no resistance, established between the terminals of the electro-motor of the following train when it runs on the blocked section. The motor, being in motion from the supply of current in the preceding section, is thus instantly converted into a dynamo working on a short circuit, and the current generated by it brings it to a stop. The great merit of this system of blocking is, that it depends upon the essential conditions of the working of the line, and not upon special mechanism, which may get out of order. So long as the line is in working order the sections will be successively blocked by the movement of a train, but when it is not in order trains can not move, and hence all danger of collision between following trains is absolutely prevented. Ayrton and Perry have also perfected, for use with their system, a motor which is automatically governed, so that the speed is constant whatever the load.

Telpherage.—The facility with which electric power can be divided and applied at any desired point, and the possibility it gives of controlling a line of moving vehicles from the point at which the current is generated instead of from the train, has led Prof. Fleeming Jenkin to design a system of aërial transportation to which he has given the name telpherage. The road consists of a light conducting rail, which may be a round steel rod, or a wire rope, strung along on poles at a sufficient distance above the ground to clear obstacles. The vehicles for this form of railway consist of suspended buckets, or "skips" as they are called, connected together by wooden strips.

A number of such vehicles, provided with an electro motor in a separate frame at the head of the string of carriages, constitute a train. As the load is distributed over a considerable distance, the supporting rail or cable can be light, and the whole structure may be comparatively inexpensive. There is no need of grading or of bridges, the line being strung across country with the same facility as an ordinary telegraph line, and with no more interference with the ordinary use of the ground. Prof. Jenkin has designed the road primarily for the transportation of freight, but it seems possible to adapt it to passenger service. He does not regard it as a substitute for the ordinary surface road, but as affording a means for the cheap transportation of freight through districts in which the traffic would not be sufficient to warrant the building of the more costly surface line. In conjunction with Professors Ayrton and Perry the system has been worked out in a practical form, and an experimental line has been built at Weston, England. The self-governing motors of these latter inventors as well as their automatic block system have been adopted. These motors are especially applicable to such a line, as they are of small weight in proportion to the power developed, a motor weighing only 96 pounds being capable of giving one and a half horse-power.

The cables are attached to the supporting posts, so as not to interfere with the passage of the trains, by means of saddles placed at the extremities of cross-arms. These saddles are curved in a vertical plane so as to avoid an abrupt change of direction or corners in the cable roadway.

Two modes of constructing such lines have been devised, depending upon the way in which the current is applied, which the inventors term the "series" and "cross-over parallel" systems. In the former the line is divided into a number of successive sections, the electric connection between which can be broken by a passing train, and restored again automatically as the train moves on. The trains must be slightly longer than a section, so as to avoid the possibility of their running on to a section and being deprived of power. With this construction, when a train is partly on one and partly on the succeeding section, the direct connection between the sections is broken, and the current has therefore to pass through the electro-motor. As the train moves on, it opens the connection between the section it is on and that immediately ahead, and closes the connection with the section just left. In this way the motor of the train is always supplied with current by the use of a single conductor. All the trains on the line are thus arranged on the line like a string of arc-lamps, the current going through the motor of each train in succession. One half of the length of the line constitutes the "up" and the other half the "down" line. The engraving, Fig. 3, shows this form of line, from which it will be seen that it is a very simple affair. In the other form, the "cross-over parallel," two conductors are used, but as one of them may be the up and the other the down line there is no disadvantage in the arrangement. The two conductors are arranged so that there are two circuits, one the outgoing, the other the return, only the first of which needs to be insulated.

These circuits are not, however, disposed so that each rail forms one circuit, but each of the two circuits crosses from one rail to the other, so that alternate sections of a rail are portions, the one of the outgoing, the other of the return

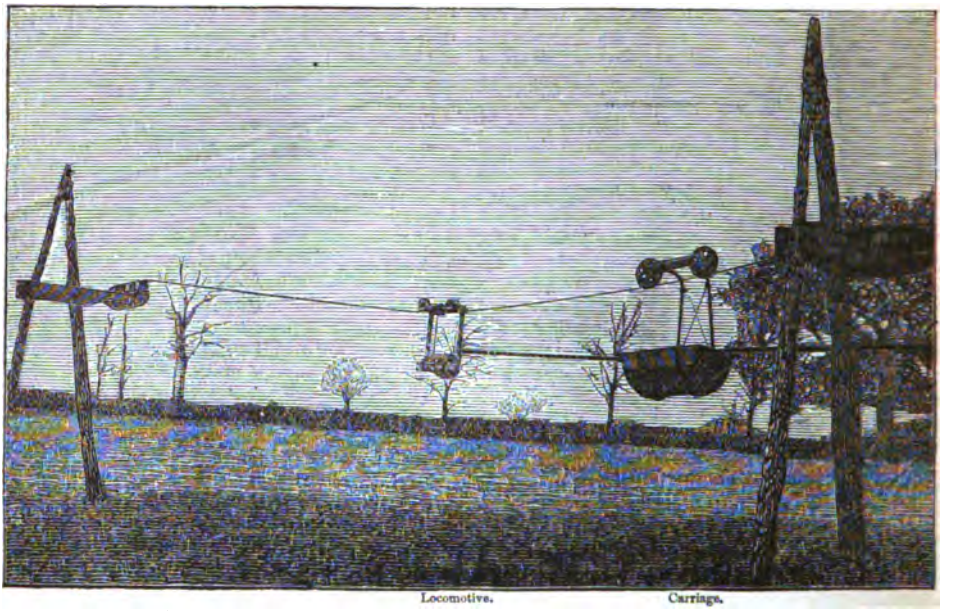

FIG. 3.—SERIES TELPHER LINE.

circuit. A train standing partly on each section would therefore form a bridge across a simple multiple-arc circuit, precisely as an incandescent lamp does. This crossing over from one side to the other is done at the supporting posts, at which points the outgoing conductor must be thoroughly insulated. A number of the details of the system have yet to be worked out, and very probably the final forms will not be reached without considerable experimenting with actually working lines. The experimental line which has been constructed at Weston is arranged on the multiple-arc system. Different forms of rail, square and round steel rods, and wire ropes, are being tried with a view of determining the best form. The line is supported on posts 60 feet apart, and divided electrically into sections of 120 feet, the alternate ones of each rail being insulated. The train is of the same length as a section, and consists of seven buckets, each of which weighs one half of a hundred-weight, and can carry a load of two and a half hundred-weight. The locomotive weighs the same as a loaded bucket, so the total weight of a train is a trifle over a gross ton. The motor is connected to the driving-wheels by gearing of a special kind which has very little friction. One pole of the motor is connected by a wire with the leading wheel and the other with the last wheel of the train, the other wheels being insulated from each other, so that the train always forms a bridge from an insulated to an uninsulated section, and the current passes through the motor. Exhaustive tests of the capability of such a road have not yet been made, but Prof. Jenkin says that the experience so far gained warrants him in stating that with a line having rails one inch in diameter there can be conveyed a useful load of 1,500 pounds on each alternate span of 120 feet, which is equivalent to 16½ tons per mile. Moving at five miles an hour, this corresponds to the conveyance of 92½ tons per hour, and, working 20 hours a day, to the transport of 1,850 tons a mile a day. The carriages, he says, run as smoothly as bicycles, the grip of the locomotive is entirely satisfactory, and there is no difficulty in insulation even with very high-tension currents. At present it is not proposed to work the lines from one station for a greater distance than five miles each way, so that a station will be required every ten miles. A large number of radiating lines can of course be worked from one station.

From the above it will be seen that the electric railway is sufficiently advanced to be ready for commercial development. While much, doubtless, remains to be done in working out the details of a thoroughly satisfactory equipment, the main features of a successful system have been determined. No new electrical discoveries are necessary to the practical realization of this mode of propulsion, and the problems which will be encountered in actual construction are not beyond the skill of the engineer. The essential pieces of apparatus which will have to be used in such a system—the steam-engine or water-wheel, the dynamo and electro-motor—are all in a commercial shape. The construction of a suitable roadway apparently presents no insurmountable difficulties. From an engineering point of view, therefore, the system is perfectly feasible,

but whether it is so on the basis of cost of operation is yet undetermined, though the experience had with the Siemens lines goes to show that it is. Prof. Ayrton claims that the cheapening of railway transportation is one of the chief recommendations of the electric system. If further experience shows that this belief is well founded, there can be no question of the great future which awaits this system of railway operation. It is universally applicable; as capable of doing the work of a great trunk line as that of city and suburban roads. Its first field of operation is of course the latter, but, if successful here, its extension to the general railroad system of a country is simply a matter of time.

REFORMED CHURCHES. I. Reformed Church in America.—The summary of the statistics of this church, as they were reported to the General Synod in June, 1883, is as follows: Number of particular synods, 4; of classes, 33; of churches, 516; of ministers, 569; of candidates, 3; of families, 44,506; of communicants, 80,156; of baptisms, 3,988 of infants and 940 of adults; of baptized non-communicants, 29,599; of catechumens, 28,595; of Sunday-schools, 697, with 84,595 scholars. Amount of contributions: For religious and benevolent purposes, $224,-144; for congregational purposes, $873,820.

The Board of Education reported to the General Synod that its receipts for the year, exclusive of interest from invested funds, had been $7,516; and that $7,522 had been paid into the Treasury of the General Synod for investment, and to found scholarships. The debt of the board was $6,165, having decreased $1,000. Sixty-six young men had been aided in preparing for the ministry, thirteen of whom had finished their studies and been licensed. Aid had also been given to parochial schools connected with seven of the churches.

The income of the Board of Domestic Missions, including interest from invested funds, had been $39,224, and its expenditures $25,-125. The board also reported the receipt of $6,329 on account of its church-building fund, with an expenditure of $15,210, or enough to absorb the balance to its credit on the general account, and leave it in debt $1,000. Seventy missionaries had been employed at 77 missions, with which were connected 4,459 members of the church; 88 Sunday-schools had been conducted, having an average attendance of 7,609 persons; and 445 persons had been received on confession of faith.

The receipts of the Board of Foreign Missions had been $66,206. The missions, which are in China (the Amoy mission), India (the Arcot mission), and Japan, returned 12 stations, 128 out-stations, 18 missionaries, 23 assistant missionaries, 18 native ministers, 166 catechists or preachers, assistant catechists, readers, schoolmasters, schoolmistresses, colporteurs, and Bible-women, 37 churches, 2,843 communicants, 5 academies with 144 scholars, 95 day-schools with 2,028 pupils, and 18 theological students. The contributions of the native churches amounted to $2,768; receipts of the Woman's Board of Missions, $10,919.

The General Synod of the Reformed Church in America met in its seventy-seventh annual session in Albany, N. Y., June 5th. The Rev. William R. Duryea, D. D., was chosen president. Certain changes in the form for the administration of baptism to adults were asked for by the Classis of Poughkeepsie, whose memorial on the subject had been before two previous sessions of the Synod, and had been referred by the former Synod to a special committee to consider and report upon. The memorial was supported by a petition from the elders of Trinity Church, in Plainfield, N. J., asking that "some action be taken looking toward the harmonization of the authorized forms for admission into church-membership of those not baptized in infancy, and of those who were then baptized," and "that if any changes be made, they be made in favor of the latter form (that for those baptized in infancy), which embodies the essential faith of the church." The action of the Synod on the subject was as follows:

Resolved, That after the sentence "You are sincerely to give answer before God and his Church," in "the form for the administration of holy baptism to adult persons," shall be inserted a mark of reference directing attention to the following foot-note:

"The questions and answers of the form for public reception into full communion of those who have been baptized in infancy may at the option of ministers and elders be used in place of those contained in this form." (The form for the admission to membership is, so far as doctrine is concerned, the acceptance of the Apostles' Creed.)

Resolved, That a mark of reference be inserted after the word "good" in the second question of the form for the administration of holy baptism to adult persons, referring to the following explanatory note:

That is, "incapable of any saving good." Canons, third and fourth heads of doctrine, Art. III, "only those works which proceed from a true faith and are performed according to the law of God and to his glory are *good*."—Heid. Cat., xxxiii, Lord's Day, quest. 91.

Resolved, That a mark of reference be inserted after the word "church" in the fourth question of the same form, referring to the following explanatory note:

The articles spoken of are the Articles of the Apostles' Creed. See Heid. Cat., vii, Lord's Day, quest. 22, and the forms for "the administration of the Lord's Supper," and "the public reception into full communion of those who have been baptized in infancy."

Resolved, That the Board of Publication be directed to have the plates of the revised Liturgy amended in accordance with this action, and to incorporate these explanations in the copies of the Liturgy hereafter issued.

The Synod had been repeatedly asked to adopt expressions disapproving the connection of members of the church with the Masonic or other secret, oath-bound societies, and in response to such requests had, at a previous meeting, declined to express any opinion on the subject, but recommended that the matter be relegated to the conscience of the individual church-member and to the spiritual governors of the individual church. This action was reaffirmed, with the suggestion to members of

the church that, "out of regard to the fact that membership in Masonic and similar orders gives offense to many Christian consciences, and has become a fruitful source of injurious agitation and division in the church, they, in accordance with the law of Christian love, refrain from connection with such societies." A few churches in the West which had withdrawn from connection with the Synod during the agitation of this subject, were invited, in view of the present action, to return. A resolution adopted by the Synod called attention to the fact that as the Sunday-school is one of the religious services of the church, it is under the same supervision of the consistory as are all the other religious services. The title of the "Adsessor" of the Synod was changed to "Vice-President," and that of "Quæstor" of the Classis to "Treasurer."

II. Reformed Church (German) in the United States.—The following is a summary of the statistics of this church, as they are given in the "Almanac of the Reformed Church in the United States" for 1884: Number of synods, 7; of classes, 51; of ministers, 767; of congregations, 1,432; of members, 166,578; of unconfirmed members, 101,309; of persons who communed, 133,435; of baptisms, 13,431 of infants and 1,163 of adults; of Sunday-schools, 1,344, with 107,356 scholars; of students for the ministry, 128. Amount of contributions: For benevolent purposes, $133,901; for congregational purposes, $745,749. The literary and theological institutions of the denomination comprise 17 colleges, collegiate institutes, seminaries, and academies. The periodicals include 15 weekly, semi-monthly, monthly, and quarterly periodicals in the English language, and 6 in the German language. Four orphan homes are supported. Home missions are conducted by the Joint Board of the Eastern, Pittsburg, and Potomac Synods, and by the separate boards of the German Synod of the East, the Ohio Synod, and the Synod of the Northwest. The general foreign mission is in Japan, with the principal station at Tokio, conducted by two missionaries and their wives.

REFORMED EPISCOPAL CHURCH. The ninth General Council of the Reformed Episcopal Church met in Baltimore, Md., May 23d. Bishop Latané presided. A statistical report was presented, showing that the number of communicants of the Church was 6,193; number of baptisms during the year, 923; number of confirmations, 519; number of Sunday-school pupils, 10,507; amount of collections, $132,538; value of church property, $614,500. The treasurer of the General Council reported that his receipts had been $26,857, and that he had a balance on hand of $687. Reports of the condition of the several Synods were made by Bishop Stevens, of the special jurisdiction of the South; Bishop Latané, of the Synod of the South; Bishop Cheney, Bishop Nicholson, Bishop Fallows, of the missionary jurisdiction of the West and Northwest; Bishop Cridge, of the missionary jurisdiction of the Pacific; Bishop Wilson, of the Synod of Canada; and Bishop Sugden, of the Synod of Great Britain. The Synod of Great Britain asked to be allowed an organization independent in administration and government, and this was granted. A gift of 160 acres of land near the city limits of Chicago, for a theological seminary, conditioned upon the Council raising $20,000, was accepted, and a Board of Regents for the proposed institution was organized. A report from the General Committee recommending a suspension of the publication of the amended Prayer-Book was approved, and a revision of the Prayer-Book was referred to the Committee on Doctrine and Worship.

The observance of Dec. 2, 1883, as the tenth anniversary of the organization of the Reformed Episcopal Church, was commended to the churches. The subject of restoring the use of the service for the fourth of July from the Prayer-Book of 1785 was referred to the Committee on Doctrine and Worship.

REFORM IN THE CIVIL SERVICE. An act "to regulate and improve the civil service of the United States," which had been prepared by the Civil-Service Reform League and introduced in the Senate by Mr. Pendleton, of Ohio, became a law on the 16th of January (see CONGRESS, page 183). The national example was followed by the Legislature of the State of New York, which in May passed a similar act applicable to the State service, with authority for its extension to municipal service in cities of 50,000 inhabitants or more, in the discretion of their mayors. (See NEW YORK, page 566.)

Commissioners were appointed under the national act, and confirmed by the Senate before the adjournment of Congress in March. They were Dorman B. Eaton, of New York; Leroy B. Thoman, of Ohio; and John M. Gregory, of Illinois. Their first meeting was held in Washington, March 9th. Silas W. Burt, of New York, who had lately been superseded in the office of naval officer of that port, was named for chief examiner some days before, but had declined the appointment; Edward O. Graves, Chief of the Redemption Bureau of the Treasury Department, also declined the place. Dr. B. Randolph Keim, of Pennsylvania, was afterward named by the President, on the recommendation of the commissioners, but the selection occasioned so much criticism that, after some delay and hesitation, Mr. Keim was induced to withdraw. Charles Lyman, a clerk in the Treasury Department, was then appointed to the office. W. Woods White was appointed secretary of the commission, on recommendation of Dr. Gregory, but a statement having been publicly made that the selection was influenced by the consideration that it would give Dr. Gregory's son a business advantage in connection with Mr. White's private affairs, the latter promptly resigned, with an indignant denial that his appointment and acceptance had been influenced by any such consideration.

On June 6th William S. Roulhac, of North Carolina, was appointed secretary of the commission. In the mean time the commission had prepared the rules for appointments in the civil service, which, after some slight modifications, were approved by the President on the 7th of May. They were as follow:

1. No person in said service shall use his official authority or influence to coerce the political action of any person or body, or to interfere with any election.

2. No person in the public service shall for that reason be under any obligation to contribute to any political fund or to render any political service, and he will not be removed or otherwise prejudiced for refusing to do so.

3. It shall be the duty of collectors, postmasters, assistant treasurers, naval officers, surveyors, appraisers, and custodians of public buildings, at places where examinations are to be held, to allow and arrange for the reasonable use of suitable rooms in the public buildings in their charge respectively, and for heating, lighting, and furnishing the same for the purposes of examinations, and all other executive officers shall, in all legal and proper ways, facilitate such examinations and the execution of these rules.

4.—I. All officials connected with any office where, or for which, any examination is to take place, will give the Civil-Service Commission and the chief examiner such information as may be reasonably requested to enable the commission to select competent and trustworthy examiners; and the examinations by those selected as examiners, and the work incident thereto, will be regarded as a part of the public business to be performed at every such office. II. It shall be the duty of every executive officer to promptly inform the commission in writing of the removal or discharge from the public service of any examiner in his office, or of the inability or refusal of any such examiner to longer act in that capacity.

5. There shall be three branches of the service, classified by the Civil-Service Act, not including laborers or workmen, nor officers required to be confirmed by the Senate, as follow: I. Those classified in the department at Washington shall be designated "The Departmental Service at Washington." II. Those classified under any collector, naval officer, surveyor, or appraiser in any customs district shall be designated "The Classified Customs Service." III. Those classified under any postmaster at any post-office, including that at Washington, shall be designated "The Classified Postal Service." IV. The several customs districts now having the classified service herein referred to, being those where the officials are as many as fifty, are the following: New York city, N. Y.; Boston, Mass.; Philadelphia, Pa.; San Francisco, Cal.; Baltimore, Md.; New Orleans, La.; Chicago, Ill.; Burlington, Vt.; Portland, Me.; Detroit, Mich.; Port Huron, Mich. V. The several post-offices now having the classified service herein referred to, being those where the officials are as many as fifty, are the following: Albany, N. Y.; Baltimore, Md.; Boston, Mass.; Brooklyn, N. Y.; Buffalo, N. Y.; Chicago, Ill.; Cincinnati, O.; Cleveland, O.; Detroit, Mich.; Indianapolis, Ind.; Kansas City, Mo.; Louisville, Ky.; Milwaukee, Wis.; Newark, N. J.; New Orleans, La.; New York city, N. Y.; Philadelphia, Pa.; Pittsburg, Pa.; Providence, R. I.; Rochester, N. Y.; St. Louis, Mo.; San Francisco, Cal.; Washington, D. C.

6.—I. There shall be open competitive examinations for testing the fitness of applicants for admission to the service, which examinations shall be practical in their character, and, so far as may be, shall relate to those matters which will fairly test the relative capacity and fitness of the persons examined to discharge the duties of the branch of the service which they seek to enter. II. There shall also be competitive examinations of a suitable character to test the fitness of persons for promotion in the service.

7.—I. The general examinations under the first cause of rule 6, for admission to the service, shall be limited to the following subjects: 1. Penmanship, copying, orthography, and letter-writing. 2. Arithmetic, fundamental rules, fractions, and percentage. 3. Interest, discount, and elements of book-keeping and of accounts. 4. Elements of the English language, and the proper construction of sentences. 5. Elements of the geography, history, and Government of the United States. II. Proficiency in each of these subjects shall be credited in grading the standing of the persons examined in proportion to the value of a knowledge of such subjects in the branch or part of the service which the applicant seeks to enter. III. But no one shall be entitled to be certified for appointment whose standing upon a just grading in the general examination shall be less than 65 per cent. of complete proficiency in the first three subjects, or less than 50 per cent. in the last two subjects mentioned in this rule, and that measure of proficiency shall be deemed adequate. IV. But for places in which a lower degree of education will suffice, the commission may limit the examination to—1. Penmanship, copying, and orthography. 2. The fundamental rules of arithmetic; but no person shall be certified under this examination of a less grading than 65 per cent. on each subject. V. And the commission may also hold examinations of a higher grade, or upon additional or special subjects, to test the capacity and fitness which may be needed in any special place or branch of the service.

8. No question in any examination, or proceeding by or under the commission or examiners, shall call for the expression or disclosure of any political or religious opinion or affiliation, nor, if known, shall any discrimination be made by reason thereof; and the commission and its examiners shall discountenance all disclosures before either of them of such opinion by or concerning any applicants for examination, or by or concerning any one whose name is on any register awaiting appointment.

9. All regular applications for the competitive examinations for admission to the classified service must be made on blanks in a form approved by the commission. All requests for such blanks and all applications for examination must be addressed as follows: I. If for the classified service in any department at Washington, to the United States Civil-Service Commission, Washington, D. C. II. If for the classified postal service, to the postmaster under whom service is sought. III. If for the classified customs service, to the head of either customs office in the customs district in which service is sought. All officers receiving such applications will indorse thereon the date of the reception thereof, and transmit the same to the proper examining board of the district or office where service is sought, or, if in Washington, to the Civil-Service Commission.

10. Every examining board shall keep such records, and such papers on file, and make such reports as the commission shall require, and any said paper or record, in the charge of any examining board, or any officer, shall at all times be open to examination, as the commission shall direct, and, upon its request, shall be forwarded to Washington for inspection and revision.

11. Every application, in order to entitle the applicant to appear for examination, or to be examined, must state under oath the facts on the following subjects, as may be required by the regulations of the commission: I. Name, residence, and post-office address. II. Citizenship. III. Age. IV. Place of birth. V. Health and capacity for the public service. VI. Right of preference by reason of military or naval service. VII. Previous employment in the public service. VIII. Business or employment and residence for the last five years. IX. Education and such other facts as the commission may reasonably require, as showing fitness for the public service. The applicant must also affirm his qualification under section 8 of the Civil-Service Act, which is as follows: "That no

person habitually using intoxicating beverages to excess shall be appointed to or retained in any office, appointment, or employment to which the provisions of this act are applicable."

12.—I. Every regular application must be supported by proper certificates of good moral character, health, and physical and mental capacity for doing the public work, the certificates to be in such form and number as the regulations of the commission shall provide for. But no certificate can be received which contains any language inconsistent with the tenth section of the Civil-Service Act. II. No one shall be entitled to be examined for the classified postal service if under sixteen or over thirty-five years of age, or for the classified customs service or for the classified service at Washington, if under eighteen or over forty-five years of age, and no one shall be examined for a clerk or messenger who is under twenty-one years of age. But these maximum limitations of age shall not apply to those who have been honorably discharged from the military or naval service during the last war and are otherwise duly qualified.

13.—I. The date of the reception of all regular applications for the service at Washington shall be entered of record by the commission, and of all other applications by the proper examining boards of the district or office for which they are made, and applicants, when in excess of the number that can be examined at a single examination, shall be notified to appear in their order on the respective records. But any applicants in the several States and Territories, for the service at Washington, may be notified to appear before examination, at any place at which an examination is to be held, whether in any State or in Washington, which shall be deemed most convenient for them. II. The commission is authorized, in aid of the apportionment among the States and Territories, to hold examinations at places convenient for applicants for several different States and Territories, or for those examination districts which it may designate and which the President shall approve.

14. Those examined shall be graded, and shall have their grade marked upon a register after those previously thereon, in the order of their excellence, as shown by their examination papers, except that those from any State or Territory may be entered upon the register together in the order of relative excellence to facilitate said apportionment. Separate registers may be kept of those seeking to enter any part of the service in which special qualifications are required.

15. The commission may give a certificate to any person examined, stating the grade which such person attained and the proficiency in the several subjects shown by the markings.

16.—I. Whenever any officer having the power of appointment or employment shall make request therefor, there shall be certified to him by the commission or the proper examining board four names for the vacancy specified, to be taken in order from the proper register of those in his branch of the service and remaining eligible, regard being had to the apportionment of appointment to States and Territories, and from said four a selection shall be made for the vacancy. II. These certifications for the service at Washington shall be made in such order as to apportion as nearly as may be practicable the original appointments thereto among the States and Territories and the District of Columbia upon the basis of population as ascertained at the last preceding census. III. In case the request for any such certification or any law or regulation shall call for those of either sex, the four highest in order of that sex shall be certified; otherwise sex shall be disregarded in such certification. IV. No person upon any register shall be certified more than three times to the same officer in the customs or postal service, or more than twice to any department at Washington, unless upon request of the appointing officer, nor shall any one remain eligible more than one year upon any register, and no person, while remaining eligible on any register, shall be admitted to a new examination of the same grade.

17.—I. Every original appointment or employment in said classified service shall be for the probationary period of six months, at the end of which time, if the conduct and capacity of the person appointed have been found satisfactory, the probationer shall be absolutely appointed or employed, but otherwise be deemed out of the service. II. Every officer under whom any probationer shall serve during any part of the probation provided for by these rules shall carefully observe the quality and value of the service rendered by such probationer, and shall report to the proper appointing officer in writing the facts observed by him, showing the character and qualifications of said probationer and of the service performed by him, and such reports shall be preserved on file. III. Every false statement knowingly made by any person in his application for examination, and every connivance by him at any false statement made in any certificate which may accompany his application, shall be regarded as good cause for the removal or discharge of such person during his probation.

18. It shall be the duty of every head of a department and office to notify the commission of the name of every person appointed to or employed in an official place in the classified service under him, giving the date thereof and the designation of the office or place from among those examined under said commission; and further, and in like manner, to inform said commission of the date of any rejection or final appointment of any said person after probation, and of every case of the promotion, removal, discharge, resignation, transfer, or death of any said person.

19. There are excepted from examination under these rules the following: I. The confidential clerk or secretary of any head of a department or office. II. Cashiers of collectors. III. Cashiers of postmasters. IV. Superintendents of money-order divisions in post-offices. V. The direct custodians of money for whose fidelity another officer is under official bonds, but these exceptions shall not extend to any official below the grade of assistant cashier or teller. VI. Persons employed exclusively in the secret service of the Government, or as translators or interpreters or stenographers. VII. Persons whose employment is exclusively professional, as doctors or lawyers, but no person so excepted shall be either transferred, appointed, or promoted, unless to some excepted place, without an examination under the commission. VIII. Heads of bureaus.

20. If the failure of competent persons to attend and be examined, or the prevalence of contagious disease or other sufficient cause, shall make it impracticable to supply in due season for any vacancy persons who have passed competitive examinations, such vacancy may be filled by any person who has passed a non-competitive examination, which the commission may provide for, but its next report shall give the reasons for every such resort to non-competitive examinations.

21. The Civil-Service Commission will make appropriate regulations for carrying these rules into effect.

22. Every violation by any officer in the executive civil service of these rules, or of the eleventh, twelfth, thirteenth, or fourteenth sections of the Civil-Service Act relating to political assessments, shall be good cause for removal.

These rules were not intended to cover examinations for promotions, those being left for later consideration. On the 16th of May the Civil-Service Commission adopted regulations for the conduct of examinations. They were as follow:

1. The chief examiner shall, as far as practicable, except when otherwise directed by the commission, attend the examinations held by the several Boards

of Examiners. He shall take care to secure accuracy, uniformity, and justice in all their proceedings, which shall at all times be open to him, but leaving the duty of the examiners for marking and grading those examined unimpaired. The commission will, in its discretion, designate one of its own members, or request the detail of a suitable person, to supervise examinations whenever deemed needful.

2. He shall prepare and submit to the approval of the commission proper forms and questions. He shall take care that the rules and regulations are complied with, and bring every case of injustice and irregularity observed by him to the attention of the commission. He shall take such part as the commission shall assign him in the work at Washington. It shall be his duty to confer, from time to time, with the heads of the postal and custom-offices which he officially visits concerning the regularity, sufficiency, and convenience of the examinations for the service under them.

Paragraph 3 relates to the duties of secretary.

4. The General Board of Examiners for the depart mental service shall consist of two persons from the Treasury Department, two from the Post-Office Department, two from the Interior Department, and one from each of the other departments. But any three members may be designated by the commission to constitute the acting Examining Board for any examination. The Secretary of the Board of Examiners for the departmental service shall keep a record of its proceedings and have charge of its papers.

5. A special Board of Examiners will be selected by the commissioners for the departmental service at Washington for holding any examination whenever, in the judgment of the commission, the technical information or skill to be tested seems to require it.

6. In case of examinations to be held at other places than those having the classified service, the commission may designate an Examining Board for that purpose.

7. For each post-office the Board of Examiners shall consist of three persons.

8. The examiners for each customs district shall consist of two persons selected from the office of the collector, and one from each of the other customs offices which are subject to the rules; but if there be no office subject thereto, except that of the collector, the three shall be selected from his office.

9. Three examiners may serve as a board for conducting any examination, and the examiners for any customs district will determine which three shall hold any examination, taking care that if an examination is wholly or mainly for any office, one or more of the examiners from that office shall be on the acting board. In case of a failure or disagreement as to which three shall be the board for any examination, the commission or chief examiner shall designate the local examiners who shall serve. In case of the disability or necessary absence of one of the three examiners selected, the other two may conduct the examination.

10. Each Examining Board in the postal and customs service shall select one of its members to serve as secretary, and it shall be his duty to keep a complete record of the proceedings of the board and of all examinations held. He shall also keep the record of applicants and examinations, and the register of persons eligible for appointment. He shall have charge of all books and papers belonging to the board. On application of the proper appointing officer, he shall certify to such officer the names of the four persons of the highest grade remaining on the register, in conformity to the rules. He shall also answer all proper requests for application-blanks, and send due notifications to applicants to be examined, and shall give all other notices required to be given by the board.

11. No examiner or officer serving under the commission must attempt to control or influence removals.

12. Care must be taken by the examiners not to allow such visitors as they may admit, nor any conversation or other cause, to obstruct or distract those being examined.

13. Examiners must not disclose for public information, unless by the consent of those examined, more than the general results of examinations, without the details of answers given.

14. Complaints which show injustice or unfairness on the part of any Examining Board, or any one acting under the commission, will be considered by the commission, and, if necessary, it will revise the marking and grading on the papers, or order a new examination, or otherwise do justice in the premises.

15. The head of each post-office and of each customs office, to which the rules are applicable, should inform the local Board of Examiners of probable vacancies, that examinations for filling them may be held in due season.

16. The Board of Examiners for each office or district must promptly notify the commission of the need of holding an examination in and for such office or district, and may appoint the time for the same, but subject to any change the commission may find it necessary to make for the more convenient and effective discharge of its duty to see that the examinations are accurate, uniform, and just. The notice must state under which clause or clauses of rule 7 the applicants are to be examined, and must, when practicable, be given at least twenty days before the time appointed therein for the examinations.

17. Notices in writing shall be mailed to applicants for examination in the postal and customs service at least eight days before the examination, and they shall clearly specify the place and the time, including the hour, of holding the same.

18. All competitive examinations for admission to the civil service shall be in writing, except that tests of physical qualities or expertness may be added as the commission shall approve.

19. All the questions on any subject in the examinations will be given on a single sheet. The sheets will be numbered, and will be given out in the order of their numbers, each, after the first, being given only when the applicant shall return to the examiners the last sheet given to him.

20. Not less than four nor more than ten questions shall be given in each subject of the examination, and, to facilitate the marking, the questions in the same subject shall, as far as practicable, be equal in difficulty. Care shall also be taken that the time allotted for the examination shall be reasonably sufficient for answering the questions.

21. In general, no competitive examination should occupy more than five hours, exclusive of any intermission; and in case the examination be divided into two sessions, no questions given out during the first session should be allowed to be answered in the second.

22. Every examiner will exercise all due diligence to secure fairness, and to prevent all collusion or fraud in the examination.

23. The examination papers of each applicant shall be marked only with a number; and his name, with his number, shall be placed in a sealed envelope, which shall not be opened till after his papers are marked.

24. The examination papers shall be reviewed by each examiner separately, and in every case of disagreement the average of the markings to be made on the papers by all shall be the final marking on each question, subject to the regulation as to revision.

25. The views of the heads of post-offices and customs offices as to whether applicants for the several parts of the service under them shall be examined in the five subjects under clause 1 of rule 1, or only in the two subjects under clause 4 of that rule, will be accepted by the commission so far as its duty to require uniformity and adequate tests of capacity for doing the public work will permit.

26. The marking on the examinations has three objects: First, to determine the standing in each subject; second, to determine the average standing upon the whole examination; third, to determine whether the applicant is admissible to the register.

27. To determine standing in any subject, mark its answer in proportion to its completeness and accuracy, the perfect answer counting 100. Divide the sum of the credits given to all the answers in a subject by the number of the questions; the quotient will be the proper standing in the subject.

28. To give to each of the five subjects named in clause 1 of rule 7 the value due to their respective importance in the service, it is determined that they shall be counted, in making up the general average, when perfect, as follows: 1. Orthography, penmanship, and copying, 100. 2. Arithmetic—fundamental rules, fractions, and percentage, 100. 3. Interest, discount, and elements of book-keeping and of accounts, 100. 4. Elements of the English language, letter-writing, and the proper construction of sentences, 50. 5. Elements of the history, geography, and Government of the United States, 50. It will be seen that the total credits for a perfect examination in the five subjects will amount to 400. Dividing this by 4, being the number of hundreds, will give 100, which is the highest attainable general average.

29. To determine the average standing of any applicant, add to his total standing in the first three subjects one half his standing in the other two, and divide the sum by 4; the quotient will be his average standing.

30. No applicant the average of whose credits on the first three subjects is less than 65 will be placed on the registers of persons eligible to appointment. All above that will be placed on the register in the order of their average standing.

31. The average standing of persons examined in the two subjects under clause 4, rule 7, will be found by dividing the sum of their credits by 2. The average standing must reach 65 to entitle the applicant to a place on the register.

Blank forms were prepared for the use of applicants for admission to the civil service. In filling out the form of application, the applicant was required to state his name and address, his residence and occupation, the place and date of his birth, his citizenship qualifications, his residence, and his principal occupation during the five years preceding the date of his examination. He must also, if he has ever before been examined for or in the civil service, state when and where he served, if ever, and how long, and why he left the service. If he claimed preference by reason of military or naval service, he must state when he served, under what commander, and whether he could produce an honorable discharge. The applicant must also tell what has been his education, and in what school, academy, or college it was obtained; also what special experience or capacity he has which he thinks may be useful in the public service, and whether he uses intoxicating liquors to excess, or has any physical disqualification for the service. All of these statements must be made under oath, and accompanied by vouchers as to character, signed by not less than three or more than five citizens of good character and standing. Applications must be sent by mail to the commission or to the local boards.

Examinations were conducted in the various cities during the summer, the chief examiner or one of the commissioners acting with the local board in each case. The first examination at Washington began on July 12th, when three hundred applications for places in the departmental service were on file. Examinations were held in other parts of the country by boards made up from the ranks of officials in the offices to which the law applied, the chief examiner or one of the commissioners supervising the work in all cases. Examinations were also held in different States for applicants for places in the service at Washington, under the rule that assigned a certain quota of places in the departments to the several States. The system was considered to be fairly in operation at the end of the year, but opposition to it had not wholly subsided, and there were intimations of an effort to be made for the repeal of the Civil-Service Act.

Under the act passed by the Legislature of the State of New York, commissioners were promptly appointed and confirmed, as follow: Andrew D. White, of Ithaca, President of Cornell University; Augustus Schoonmaker, of Kingston; and Henry A. Richmond, of Buffalo. Mr. White felt compelled to decline the office, and the Hon. John Jay, of New York, was appointed in his place, and was made President of the Board of Commissioners. At the first meeting, on May 31st, Silas W. Burt, of New York, was chosen for chief examiner. He promptly accepted the place, though he had declined a similar one under the National Commission. James A. Betts, of Kingston, was selected for secretary of the commission. The first work of that body was a general inquiry into the condition and requirements of the public service, with a view to the classification required by the act of May 4th. The classification was completed and approved by the Governor on September 3d. The commission decided to reorganize in the classification the special departments of the public service by bringing into a single class the clerks, wherever employed, into another the experts not attached to any great administrative institutions, and into another the non-experts not in such institutions. The last four classes represent all those other than the deputies and clerks employed on the public works and in the corrective and charitable institutions. The grades, particularly in the first subdivision of the first class, were arranged to provide for a systematic method of promotion. In the second division of the first class were assembled most of the positions which, presumptively, should be filled without examination:

Class I. All assistants and deputies of executive and administrative officers, and all officers and all clerks and other persons of whatever designation rendering services similar to those of clerks in any branch of the State service. Subdivision 1: First grade—clerks and like employés receiving an annual compensation of $1,000; second grade—clerks and like employés receiving an annual compensation of $1,000 or more, but less than $1,200; third grade—clerks and like employés receiving an annual compensation of $1,200 or more, but less than $1,500; fourth grade—clerks and like employés receiving an annual compensation of $1,500 or more, but less than $1,800; fifth grade—clerks and like employés receiving an annual compensation of $1,800 or more, but less than $2,000;

sixth grade—clerks and like employés receiving an annual compensation of $2,000 or more, but less than $2,500; seventh grade—clerks and like employés receiving an annual compensation of $2,500 or more. Subdivision 2. Deputies and assistants of principal officers or heads of departments, the clerk and reporter of the Court of Appeals, the secretaries of State boards and commissions (but not assistant secretaries, they being rated as clerks), the chief examiner of the civil service, treasurers of asylums, game and fish protectors, Superintendent of Public Buildings.

Class II. All persons of special qualifications (except those employed in the Department of Public Works, the salt-works, reformatories, asylums, and other charitable and corrective institutions), including directors or curators of museums, geologists, botanists, and entomologists and their respective assistants, librarians and their assistants, civil engineers and surveyors, chemists, sanitary experts, principals, professors, and teachers in normal schools, inspectors of quarantine hospitals, medical superintendent of emigrants.

Class III. All persons engaged in duties other than those of clerks in the courts and public offices and buildings at Albany and the State arsenals, except as laborers, and not included in the preceding classes. Subdivision 1. Court criers and attendants, court and other marshals. Subdivision 2. Superintendents and assistant superintendents in charge of public buildings under the General Superintendent. Subdivision 3. Keepers and janitors of public buildings, arsenals, bureaus, etc., office messengers, orderlies in public buildings, watchmen, firemen, porters, and porteresses. Subdivision 4. Steam-engineers and all other persons engaged in expert mechanical duties in public buildings or arsenals.

Class IV. All persons employed in the Department of Public Works other than the assistant superintendents, collectors of statistics, and clerks (who are included in Class I), and excepting laborers. Subdivision 1. Superintendents of repairs. Subdivision 2. Inspectors of boats and cargoes. Subdivision 3. First grade, rodmen and levelers; second grade, assistant engineers below the rank of residents; third grade, resident engineers; fourth grade, division engineers. Subdivision 4. All others employed in said department not otherwise classified; first grade, all those receiving an annual compensation of less than $500; second grade, all those receiving an annual compensation of $500 or more.

Class V. All persons employed in the Onondaga Salt-Works, except the deputy superintendent (Class I). Subdivision 1. First grade, engineers, except the chief engineer, overseers of pumps, and supervisors of aqueducts and reservoirs; second grade, chief engineer. Subdivision 2. First grade, assistant inspectors of salt or of barrels; second grade, receivers and inspectors of salt or of barrels; third grade, chief inspector of salt and chief inspector of barrels. Subdivision 3. All others employed and not otherwise classified.

Class VI. All persons employed in prisons and reformatories, except those included in Class I. Subdivision 1. Wardens and agents of prisons, superintendents of reformatories. Subdivision 2. Physicians, chaplains, principal matrons. Subdivision 3. First grade, guards in prisons; second grade, keepers in prisons receiving an annual compensation of $900 or less; third grade, keepers of prisons receiving an annual compensation greater than $900; fourth grade, the principal keepers. Subdivision 4. Steam-engineers and others employed as expert mechanics in prisons and reformatories. Subdivision 5. First grade, teachers in reformatories receiving an annual compensation of less than $500; second grade, teachers receiving an annual compensation of $500 or more, but less than $1,000; third grade, teachers receiving an annual compensation of $1,000 or more. Subdivision 6. All other persons employed in prisons and reformatories except laborers; first grade, such persons receiving an annual compensation of less than $500; second grade, such persons receiving an annual salary of $500 or more.

Class VII. All persons employed in asylums for idiots, the insane, the blind, and in deaf and dumb, and in other similar institutions, and by the Commissioners of Emigration, except those included in Class I and laborers. Subdivision 1. Superintendents of insane asylums. Subdivision 2. Superintendents of asylums other than those for the insane. Subdivision 3. Assistant physicians and pathologists in insane asylums. Subdivision 4. Physicians other than those in insane asylums. Subdivision 5. Stewards of asylums. Subdivision 6. Engineers and expert mechanics and tradesmen. Subdivision 7. First grade, teachers receiving an annual compensation of less than $500; second grade, teachers receiving an annual compensation of $500 or more. Subdivision 8. First grade, attendants, nurses, and orderlies; second grade, supervisors of asylums and wards. Subdivision 9. Superintendents employed in asylums and by the Commissioners of Emigration. First grade, all such persons receiving an annual compensation of less than $500; second grade, all such persons receiving an annual compensation of $500 or more.

In the above classification the inclusion of any specified official in any class, subdivision, or grade, shall not apply to any person acting as, or termed as, a deputy or assistant of such official, nor to any persons acting for such official, in case of absence, vacancy in office, or otherwise. The term "deputy" or "assistant" is not recognized in this classification unless such designation is authorized by law. Where any person receives a compensation rated, not by the year, but by the day, week, or month, the classification of such person, when dependent upon compensation, will be based on his or her equivalent annual compensation. This classification is not intended to determine nor suggest any method of appointment to, or examination for, any class, subdivision, or grade. The subdivisions are intended to mark the distinct kinds of qualification necessary in each class, and the grades in the subdivisions are designed as steps for advancement by formal promotion. The omission in the above classification of any official designation or appellation of a position in the service will not exclude such position from the classification, as it will be comprised in the class to which it belongs by the general specification of such class.

On submitting to the Governor the rules of the commission regulating admission to the service, December 6th, the commissioners said: "In the inauguration of a new system radically changing the methods of appointments to the civil service some features must necessarily be experimental. The commission has, therefore, deemed it prudent to make the application of the system in a measure progressive rather than final at the outset. Any modifications required can be made as they shall become apparent by experience." The rules do not in the general principles vary materially from those of the National Commission. They provide for appointments and promotions in the various grades of the service as established by the classification given above. These are arranged in five schedules, designated A, B, C, D, and E. The first includes the positions in subdivision 2 of Class I, and appointments may be made to these without examination, though examinations may be held at the request of the appointing officer, and the commission must be notified of all appointments within five days after they are made. Schedule B includes the

three grades of subdivision 1, Class I; office messengers and court orderlies in subdivision 3, Class III; subdivision 2 of Class IV; first grade of subdivision 3 and first grade of subdivision 5 of Class VI; and first grade of subdivision 7, Class VII. For these places appointments must be made by selection from those persons graded highest as the result of open competitive examinations. Methods of application and general directions as to examinations and appointments are given in the rules. Schedule C includes clerks in State-Prisons under Class I, persons of special qualifications in Class II; and a variety of positions requiring special training or technical knowledge as engineers, inspectors, superintendents, physicians, etc., under various classes. For these places the appointing officer may select in each case from the three persons graded highest as the result of a competitive examination, or the one graded highest of three persons named to the commission for competitive examination; or a person named by himself who upon a non-competitive examination shall be certified by the commission as qualified. Schedule D includes a variety of employments neither clerical nor requiring technical knowledge, such as janitors, steam-engineers, mechanics, etc., not including laborers. These are to be filled by persons designated as qualified after non-competitive examinations. Schedule E includes higher grades of clerks, inspectors, prison-keepers, teachers, etc., whose places when vacant are to be filled by promotion of those in lower grades after an examination similar to that which would be required for an original appointment to the same positions. Among the rules of the service are the following:

No person in the public service is, for that reason, under any obligation to contribute to any political fund or purpose, or to render any political service, and no person shall be removed or otherwise prejudiced for refusing so to do.

No person in the public service has the right to use his official authority or influence to coerce the political action of any person or body.

In the selection, nomination, or appointment of persons to fill positions in Schedules B, C, and D, or promotion of persons to positions in Schedule E, no regard shall be paid to the partisan political opinions, affiliation, or action of any person so selected, nominated, appointed, or promoted.

No question in any examination or proceeding, by or under the commission or examiners, shall call for the expression or disclosure of any partisan political opinion or affiliation of any person whatever, nor shall any discrimination be made by reason thereof; and the commission and its examiners shall discountenance all disclosure before either of them, of such partisan opinion or affiliation by or concerning any applicants for examination, or by or concerning any person on any register awaiting appointment or employment.

Every original appointment or employment in the civil service shall be for a probationary term of three months, at the end of which time, if the conduct and capacity of the person appointed or employed shall have been found satisfactory, the probationer shall be absolutely appointed or employed, but otherwise his employment shall cease.

Every officer under whom any probationer shall serve during any part of such probation shall carefully observe the quality and value of the service rendered by such probationer, and shall report in writing, to the proper appointing officer, the facts observed by him, showing the character and qualifications of such probationer and of the service performed by him; and such reports shall be preserved on file.

Complete regulations for the conduct of examinations and the making and grading of applicants were prepared. Subjects for examinations under the different schedules of the service were divided into obligatory and optional, and the relative weight of each was designated, so that a general average for all could be readily computed. The following schemes for open competitive examinations for places in Schedule B give an idea of the scope and application of the system:

Clerkships, positions as collectors of canal statistics (Class I, Subdivision I, Grades 1 and 2).

Clerkships, positions as inspectors of canal cargoes (Class IV, Subdivision II).

Age not less than twenty-one years, nor more than forty-five years.

OBLIGATORY SUBJECTS.	Relative weights.
1. Writing from dictation	1
2. Copying from manuscript	1
3. Handwriting	3
4. Spelling	2
5. Arithmetic, viz.: Numeration, addition of columns, fractions, reduction of weights and measures	3
Total	10

OPTIONAL SUBJECTS.

Elements of book-keeping.
Type-writing.
Special qualification for any department of the civil service specified by the applicant.

Clerkships and like positions (Class I, Subdivision I, Grade 3).

Age not less than twenty-one years nor more than forty-five years.

OBLIGATORY SUBJECTS.	Relative weights.
1. Writing from dictation	3
2. Copying from manuscript	2
3. Handwriting	4
4. Spelling	3
5. Arithmetic, addition in columns (perpendicular and horizontal); fractions, reduction, proportion, interest and discount	4
6. Geography and history of New York	1
7. Constitution of New York State	1
8. Giving abstracts from documents	2
Total	20

OPTIONAL SUBJECTS.

English composition or letter-writing.
Book-keeping.
Shorthand-writing.
Type-writing.
Foreign languages.
Special qualification for any department of the civil service specified by the applicant.

Office messengers and orderlies in public buildings (Class III, part of Subdivision III).

Age not less than twenty-one years nor more than forty-five years.

Guards in prisons (Class IV, Subdivision III, Grade 1).

Age not less than twenty-five years nor more than forty years.

OBLIGATORY SUBJECTS.	Relative weights.
1. Writing from dictation	2
2. Handwriting	4
3. Spelling	1
4. Arithmetic, numeration, simple addition, subtraction, multiplication, and division	3
Total	10

Candidates for the positions of office-messenger or orderly must be in approved physical condition for active duties. Applicants for position of prison-guard, in addition to the other requirements specifically named in Rule X, must furnish satisfactory vouchers that they are not irascible or passionate, and are of a kind and humane disposition. They must be not less than five feet nine inches in stature when unshod, and before being admitted to service must pass a physical examination by the prison physician.

The first Board of Examiners was appointed at Albany, on the 25th of December. It consisted of Hiram E. Sickles, official reporter of the Court of Appeals; James E. Morrison, Deputy Superintendent of Public Instruction; Willis E. Merriman, a clerk in the Comptroller's office; Richard G. Milks, a book-keeper in the Treasurer's office; and John G. Clifford, a clerk in the Insurance Department. The law respecting competitive examinations and the rules of the commission were to apply to appointments made after Jan. 4, 1884.

The application of the provisions of the law to cities of more than 50,000 inhabitants was left to the discretion of mayors, but before the close of the year steps had been taken in both New York and Brooklyn for the introduction of competitive examinations. Mayor Seth Low, of Brooklyn, was the first to take the matter up, and, after consultation with the commission, rules were formulated, the municipal service was classified, and examiners were appointed. Similar action was taken in New York, the mayor and heads of executive departments having first had a conference with the State Commission in September. The service was classified under four schedules, as follow:

Schedule A includes all deputies of officers and commissioners duly authorized to act for their principals, persons occupying a strictly confidential position, and stenographers.

Schedule B includes clerks, copyists, recorders, book-keepers, and others rendering clerical services not specially included in Schedule A.

Schedule C includes all persons not laborers or day-workmen who are not included in Schedules A and B.

Schedule D includes persons employed as laborers or day-workers.

Appointments to positions in Schedule A could be made without examination, but the appointing officer was required to file with the Examining Board, within five days after making such appointment, a formal notification setting forth the full name of such appointee, date and place of birth, length of residence in the city of New York, nature of previous employment, date of beginning of service and term for which appointed, salary, the name of the person in whose place the new man is appointed, and such other statistical information as the board may deem proper for registration.

Applications for appointments under the other schedules were to be filed with the Examining Board, accompanied by the following papers:

1. The affidavit of the applicant that he is eighteen years of age; that he is a citizen of the United States and a resident of the city of New York, stating the street and number of his residence, the extent, place, and nature of his education, and of his business training and experience.

2. A list of the optional subjects upon which he desires to be examined, if any; and a statement whether such application is limited to any particular office or offices in the service.

3. The certificate of not less than three nor more than five reputable citizens of the city of New York, that they have been personally acquainted with the applicant for at least one year, and believe him to be of good moral character, of temperate and industrious habits, and in all respects fit for the service he wishes to enter, and that each such citizen is willing that such certificate should be published for public information.

All examinations were to be in writing, on the following subjects:

OBLIGATORY.

1. Handwriting (as shown in next subject).
2. Copying from dictation.
3. English spelling (as shown in previous subject).
4. Arithmetic, viz.: Addition, subtraction, multiplication, and division, as applied to whole numbers and fractions.
5. Abstracting or digesting returns into summaries.
6. Questions relating to the city of New York.

OPTIONAL.

7. Copying from manuscript and indexing.
8. Arithmetic applied, viz.: Practical problems in proportion, percentage, interest, discount, and average.
9. Letter-writing on subjects connected with New York city affairs; grammatical correctness, clearness, and brevity of expression will be considered.
10. Book-keeping.

Every applicant must be examined in the six obligatory subjects, and may be examined further in such of the optional subjects as he may select.

The relative "weight" given to the obligatory subjects in making up the average standing will be as follows: Handwriting, 3; copying from dictation, 1; English spelling, 2; arithmetic, 2; digesting returns, 1; New York city data, 1.—Total, 10. Each subject will be marked upon a scale of 100, which represents the highest possible attainment.

The standing of a candidate on the optional subjects is to be marked according to the scale of 100, and is to be recorded in the same way. The aggregate results of each examination will be entered upon a register of eligible candidates. The name of no person can be entered upon the eligible list whose general standing on the obligatory subjects is less than 70.

The rules require that whenever the head of an office or department certifies a vacancy coming under the head of Schedule B to the Board of Examiners, he shall signify whether the position to be filled is a minor clerkship, or whether any of the special qualifications denoted by the optional subjects are essential, and if so, which ones. If a minor clerkship be certified, the names of the five persons having the highest standing on obligatory subjects will be returned by the board to the appointing officer, who shall fill the vacancy by appointing one of the five so certified to him, and shall notify the board of the appointment. If the appointing officer signifies that attainment in one or more of the optional subjects is essential, the Board of Examiners will return to him the names of the five candidates

whose standings on the subject in question are the highest (not being below the minimum of 70), and the vacancy shall be filled by the appointment of one of these five; but the Examining Board may at any time hold a competitive examination to fill a vacancy of this kind if in their judgment the eligible list does not contain five well qualified to fill the vacant position. No candidate on the eligible list shall be certified more than five times to the same appointing officer, except at the latter's request, nor shall the name of any person remain on the eligible list more than one year from the date of examination. In determining the special qualifications required for any position, the Board of Examiners will be required to consult the head of the department in which the position is to be filled.

The following are also among the regulations adopted by the mayor:

All original appointments to or employment in positions under Schedules B and C shall be provisional, and such provisional service shall not continue longer than six months, during which period the person so appointed or employed may at any time be peremptorily discharged from service. If, during that period, the conduct and character of the appointee are found satisfactory, he shall receive an absolute appointment, but otherwise his employment shall cease. Any one failing to receive permanent appointment at the end of six months shall be ineligible for one year for appointment upon the municipal service in any department.

No recommendation or question under the authority of these rules shall relate to the political opinions or affiliations of any persons whatever.

No one dismissed from the service for misconduct shall be eligible to appointment in any other capacity in any department of the municipal service within three years.

Directions were given by Mayor Edson that, as soon as practicable before Feb. 1, 1884, the service in the several departments shall be organized by the systematic classification by grades of the positions in each department, so that positions of the same responsibility, and requiring the same degrees of capacity, within certain limits, shall be placed at the same rate of compensation; "and the relative rates of compensation for the several grades of position shall be proportioned as near as may be to the relative responsibility and character of the duties properly devolved upon such positions, provided that in such adjustment a proper allowance may be made for previous length of service. Such classification will be considered in no sense as promoting or degrading the persons occupying such positions as may be increased or reduced in compensation, but as reorganization of the service with reference to the absolute importance of the duties in each position and its relation in such regard to other positions."

REVENUE AND TARIFF. See CONGRESS, p. 193.

RHODE ISLAND. State Government.—The following were the State officers during the year: Governor, Alfred H. Littlefield, succeeded, May 29th, by Augustus O. Bourn, Republicans; Lieutenant-Governor, Henry H. Fay, succeeded by Oscar J. Rathbun; Secretary of State, Joshua M. Addeman; General Treasurer, Samuel Clark; State Auditor and Insurance Commissioner, Samuel H. Cross; Railroad Commissioner, Henry Staples; Attorney-General, Samuel P. Colt; Adjutant-General, Elisha Dyer, Jr.; Commissioner of Public Schools, T. B. Stockwell. Judiciary, Supreme Court: Chief-Justice, Thomas Durfee; Associate Justices, Pardon E. Tillinghast, Charles Matteson, John H. Stiness, and George M. Carpenter, Jr.

Legislative Sessions.—The Legislature of 1882-'83, consisting of 30 Republicans and 6 Democrats in the Senate and 68 Republicans and 9 Democrats in the House, convened in Providence for its second session on the 30th of January and adjourned on the 13th of April. Among the bills passed were the following:

Amendments to the act for the suppression of intemperance; in relation to truant children, and of the attendance of children in the public schools; making appropriation of $15,000 for the completion of the State Reform School buildings and grounds; establishing the northern boundary-line of the State of Rhode Island, between Rhode Island and Massachusetts; in amendment of, and in addition to, chapter 158 of the Public Statutes, "Of Railroad Corporations"; in amendment of, and in addition to, chapter 37 of the Public Statutes, "Of the Election and Qualification of Town Officers"; in amendment of chapter 163 of the Public Statutes, "Of Marriage"; in amendment of chapter 27 of the Public Statutes, "Of the Revenue of the State": SECTION 1. A tax of twelve cents on each one hundred dollars of the ratable property of the several towns, as herein set forth, shall be annually assessed, collected, and paid by the several towns to the General Treasurer, one half thereof on or before the fifteenth day of June, and one half thereof on or before Dec. 15 in each year.

On March 30th the Judges of the Supreme Court gave their unanimous answer to a resolution of the Senate requesting their opinion in regard to the legal competency of the General Assembly to call a convention for the revision of the State Constitution. They are of opinion that such power does not exist, and that the only legal mode in which changes can be effected in the Constitution is the mode pointed out in the Constitution itself for its amendment. The provision for amendment in the Constitution is singularly explicit. The proposed amendment is first to pass the two houses of the General Assembly by a majority of the members elected. It is then to be published with the vote thereon in the newspapers, and otherwise brought to the attention of the people; it is then to pass the Assembly elected after such publication by a majority of both houses; and, finally, it is to be submitted to the approval of the electors, and, if it be approved by three fifths of the electors voting (and not otherwise), it is to become incorporated in the Constitution.

The Legislature of 1883-'84 convened in Newport on May 29th, and adjourned on June 1st, to meet in Providence on the last Tuesday of January, 1884. State and county officers were elected, and a few acts were passed.

Finances.—The receipts from all sources from

Jan. 1, 1883, to Dec. 31, 1883, were $930,433.-43; balance in the treasury Jan. 1, 1883, $324,919.44; payments for the fiscal year, $889,935.96; balance in the treasury Jan. 1, 1884, $365,416.91. The receipts were from the following sources:

State taxes and other taxes	$582,114 25
Liquor-licenses	71,877 33
Courts and jailers	38,706 83
Shell fisheries	10,757 00
State institutions, Cranston	52,563 50
School fund	12,058 50
Judgment against the city of Boston	129,981 41
Miscellaneous	32,379 61
Total	$930,433 43

The payments were for the following purposes:

Principal and interest of State debt and sinking fund	$330,321 02
Salaries	67,459 08
The courts, and the care and support of offenders and dependent persons	251,323 88
The military	22,992 97
Educational purposes	106,678 82
Purchase of land and erection of buildings	37,525 35
All other expenses	73,634 89
Total	$889,935 96

By a vote of the General Assembly at the May session, an additional sum of $129,981.41 was ordered to be paid to the sinking fund. The amount of the State debt Jan. 1, 1883, was $1,615,500. The bonds outstanding, Jan. 1, 1884, were as follow:

Bonds issued Oct. 1, 1861	$500 00
Bonds issued Sept. 1, 1862	30,000 00
Bonds issued April 1, 1863	11,000 00
Bonds issued July 1, 1863	631,000 00
Bonds issued Aug. 1, 1864	738,000 00
Total	$1,410,500 00

To provide for the payment of the outstanding bonds the General Treasurer is required to pay annually, in January, $100,000 into the sinking fund.

Education.—The Commissioner of Education reports the following statistics relating to schools:

Children from five to fifteen years enumerated	58,899
Children attending public schools	36,109
Children attending all other schools	7,680
Children not attending school	14,610
Children attending school less than the time required by law—viz., twelve weeks	2,241
Number of schools	842
Average length of schools	9 mos. 4 days
Number of different pupils enrolled	42,671
Average number belonging	31,579
Average attendance	28,558
Number of teachers regularly employed	929
Amount paid teachers	$412,008 76
Total receipts	674,395 52
Current expenditures	512,389 79
Permanent expenditures, buildings, apparatus, etc.	134,925 70

State Institutions.—The appropriation for the Board of Charities and Corrections for the year was $100,000, in addition to the amount received for labor, board of inmates, and sale of the product of the farm and workshop, which amounted to $52,563.50. An appropriation of $23,153.55 was also made to meet the deficiency of 1882. The board drew from the treasury the sum of $97,011.30 in addition to the amounts received by them as above. This sum of $97,011.30 represents the actual cost to the State of supporting the State-Prison, the Providence County Jail, the Sockanosset School for Boys, the Oaklawn School for Girls, the State Workhouse and House of Correction, the State Almshouse, and the State Asylum for the Incurable Insane.

The number of inmates in each of the departments, December 31st, was as follows: State-Prison, 95; Providence County Jail, 174; Sockanosset School for Boys, 173; Oaklawn School for Girls, 37; State Workhouse and House of Correction, 240; State Almshouse, 200; State Asylum for the Incurable Insane, 300. Total, 1,219.

According to the practice under the present statute, insane paupers not regarded as incurable are sent for treatment to the Butler Hospital, the State aiding in their support to the extent of $120 a year, whether they have or have not legal settlements in the town. During the year the State paid the Butler Hospital $3,091.71, and all the towns, $5,905.62.

The State School for the Deaf has satisfactorily continued its workings during the year. The number of pupils attending at any time was 33, the same as in the preceding year; but the average was 21·9, against 18 in 1882.

Institutions for Savings.—The amount of deposits and of profits on hand December 31st was $52,445,334.43, an increase of $1,787,457.-63. The number of depositors was 120,482, an increase of 8,010. The average amount due each depositor was $416.07. There has been a gratifying increase of the number of small depositors, as the number of those having less than $500 deposited has increased 6,796.

The sum of $15,000 was appropriated for the support of the insane poor at Butler Hospital and for the education of indigent deaf, dumb, idiotic, and blind persons, for the year 1883.

Divorce.—On this subject the Governor says:

The State of Rhode Island has acquired a reputation in regard to divorces as unenviable as it has in the matter of illiteracy. The proportion of divorces to marriages is constantly increasing. In 1882 there was one divorce to every 9·7 marriages. And when we consider that probably one third of our population are adherents of the Roman Catholic Church, in which divorces are not recognized for any cause, the proportion of divorces becomes absolutely startling. For the ten years ending Dec. 31, 1882, there were 2,824 applications for divorce in the State, of which 2,201 were granted. The large majority of these divorces were granted without opposition, and therefore upon *ex parte* depositions, which are practically only such depositions of interested parties as would make a *prima facie* case. Though the law provides that no divorce shall be granted if it shall appear that there is collusion between the parties, yet it is a well-known fact that in a large number of cases there is actual collusion, though it may not be brought to the attention of the court. About one fifth of the applications allege adultery as a cause for divorce, and yet I am informed by the Attorney-General that no prosecution for adultery was ever known to him based on evidence brought out in a divorce case. In fact, a divorce for this cause would be granted upon evidence that would not warrant for a moment the holding of a person upon a criminal charge for the commission of the crime. Our statute practically limits the causes of

divorce to the discretion of the court, and is so much more favorable to easy divorces that instances are not rare of persons coming to the State and remaining the time required to obtain standing in our courts.

Railroads.—The following are statistics of the railroads of the State for the year:

Whole number of corporations (including Apponaug, operated by the New York, Providence, and Boston, and no separate account kept)	18
Total amount of capital stock	$39,654,170 86
Total amount of indebtedness	30,773,463 23
Total receipts	13,094,812 58
Total expenses	12,254,886 46
Total net earnings	1,689,934 34
Total net surplus	2,665,962 34
Total number of passengers	32,671,430
Total tons of merchandise	4,550,814
Total miles of track in this State	305.[illegible]
Total number of locomotives	354
Total number of passenger-cars owned	585
Total number of all other cars owned	7,320[illegible]

Compared with previous year the result is:

Total capital stock, *increased*	$3,326,300 00
Total indebtedness, *increased*	4,643,713 95
Total receipts, *increased*	600,686 30
Total expenses, *increased*	1,316,900 32
Total net earnings, *decreased*	481,951 54
Total surplus, *decreased*	60,881 16
Total number of passengers, *increased*	2,836,889
Total tons of merchandise, *decreased*	698,977[illegible]
Total miles of track in this State, *increase*	6.[illegible]

Political.—The Republican State Convention met in Providence on March 15th, and nominated the following ticket: For Governor, Augustus O. Bourn, of Bristol; Lieutenant-Governor, Oscar J. Rathbun, of Woonsocket; Secretary of State, J. M. Addeman, of Providence; Attorney-General, S. P. Colt, of Bristol; General Treasurer, Samuel Clark, of Lincoln.

On the same day a convention of Independents in Providence nominated William Sprague for Governor, and appointed a committee of conference on the other nominations.

The Democratic State Convention met in the same city, on the 20th of March, and having nominated Mr. Sprague for Governor, in conference with the Independent committee, agreed upon the following ticket for State officers: For Lieutenant-Governor, Charles H. George, of Providence; Secretary of State, Warren R. Perce, of Providence; Attorney-General, Willard Sayles, of Providence; General Treasurer, James B. Cottrell, of Newport. Z. O. Slocum was substituted for Mr. George.

The election, on the 4th of April, resulted in the success of the Republican ticket. The following is the vote:

	Republican.	Democratic.	Independent Democratic.
Governor	13,068	10,201	726
Lieutenant-Governor	13,179	10,214	690
Secretary of State	13,257	10,166	678
Attorney-General	13,622	9,905	628
Treasurer	13,257	10,174	674

The Legislature chosen has 30 Republicans and 7 Democrats in the Senate, and 55 Republicans and 17 Democrats in the House.

RITUAL MURDER CASE. See AUSTRIA-HUNGARY, page 47.

ROMAN CATHOLIC CHURCH. Rome.—The most important event of the year was the seizure by the Italian Government of the property of the Congregation de Propaganda Fide. This body, one of the committees of cardinals to which the various departments of the Catholic Church are confided, controls funds and property given for missionary purposes in all countries. The Italian Government undertook to seize and sell this property, and give the Propaganda a credit for the amount in the Italian debt, paying a yearly interest. Against this the Propaganda appealed; the case was tried in the Italian courts, and finally carried to the Court of Cassation, which sustained the Government. The Congregation of the Propaganda has under its charge a great missionary college, and a printing-office established in 1626, in which religious works in a great number of languages are printed. It has also a museum, founded early in this century by Cardinal Stephen Borgia, and has a rich collection of early maps, and geographical, ethnological, and linguistic contributions from missions in all parts of the world. Cardinal Simeoni, Prefect of the Propaganda, by a circular to bishops in missionary countries, Oct. 20, 1882, appealed for further contributions to this great collection.

Among the other notable events was the opening of a college in Rome for Armenian theological students, under the direction of Cardinal Hassoun, who belongs to that rite. It had been established by Pope Leo XIII, by his brief of March 1.

On May 30, Pope Leo XIII issued a constitution in regard to the Third Order of St. Francis, a branch of the Franciscan order, embracing persons living in the world, even in the marriage state. The Pope revised and amended the rule of the order, and recommended it highly to the faithful.

On August 17 the Pope addressed a remarkable letter to Cardinals de Luca, Pitra, and Hergenroether, in which he announced that the Vatican Library would henceforth be at the service of those who were prosecuting historical labors. Under this policy, the Vatican archives had already been examined at the instance of the English Government, and copies obtained of documents supplementing what was already known of various important events.

On September 12 the Pope issued an encyclical to stimulate Catholics throughout the world to resort to the devotion of the Rosary, to which, in Catholic annals, the victories of Lepanto and Vienna, which saved Christendom, are especially ascribed.

On October 7 he received in St. Peter's a great pilgrimage from all parts of Italy, and replied to the address by Count Viancino.

The venerable Father Beckx, General of the Society of Jesus, feeling the infirmities of age, sought to retire, or be aided in his duties. For the first time in the history of the order, a coadjutor to the General was elected by the procurators of the various provinces assembled in

general congregation. The choice devolved on Father Anderledy, who had for a time been a missionary in the United States.

No new promotions of cardinals were made during 1883, and several members of the Sacred College died: Cardinal Ignatius Moraes Cardoso, Patriarch of Lisbon (Feb. 24); Cardinal Deschamps, Archbishop of Mechlin (Sept. 29); Cardinal Henry Mary Gaston de Bonnechose, Archbishop of Rouen (Oct. 28).

Ireland.—On the first day of the year 1883 Pope Leo XIII addressed to Cardinal McCabe, Archbishop of Dublin, an important brief in regard to the agitation in Ireland, in which he said:

The adherents of evil societies, as we have been grieved to observe during the past months, do not cease to put their trust in deeds of crime to excite the passions of the people, and, by seeking remedies worse than the disease, to adopt a course calculated to lead their fellow-countrymen, not to safety, but to destruction. Hence the faithful people should be firmly persuaded, as we have already reminded them, that the standard of utility and honesty is one and the same; that the national cause should be kept distinct from the aims, purposes, and deeds of unhallowed associations; that while it is just and lawful for those suffering oppression to seek their rights by lawful means, it is not allowable to make use of the protection which crime affords; and that Divine Providence allots to the virtuous the enjoyments of the fruits of patience and well-doing, but subjects the evil-disposed, after their fruitless labors, to heavy punishment from God and men. While we thus speak from our earnest desire for the relief, peace, and happiness of Ireland, we have no doubt that you, our beloved son, and your venerable colleagues in united counsels and brotherly love, will continue to keep your faithful people entirely apart from those who, led away blindly by their own passions, think that they can serve their country by steeping themselves in crime, by drawing others into the same depraved courses, and imprinting a foul stain upon their country's cause. We rejoice, beloved son, that you have lately so effectively discharged this priestly zeal when, in view of the snares and dangers prepared for the Catholic youth of Ireland, you issued a pastoral letter in which you publicly denounced these dangers, stirred up the faithful to vigilant care, and consulted at once for their salvation and for the interests of religion and your country. These grave duties of the pastoral office and the public interests of the Irish people imperatively demand that the clergy should give every assistance to their bishops, in calming the passions of their countrymen and checking public disturbances.

For the proper exercise of this salutary influence of the sacred ministry—especially when the question of popular meetings in which affairs are very warmly discussed and dissensions arise—we deem it a wise plan if, adhering strictly to the decrees you have already made regarding the junior clergy, you would give leave to attend such meetings only to those ecclesiastics in whose wisdom you have special confidence, whose mature age and experience have rendered them conspicuous for prudence, wisdom, and weight, and who are, therefore, best able to guide an excited assembly to what is right and honest, to meet the fallacies of the evil-disposed, to guard the cause of justice, and be the best defender of the most judicious courses.

The exhortations of the Holy See were renewed by the Archbishop of Tuam and other members of the Irish hierarchy in their pastoral letters. In the course of time the Parnell testimonial fund was started, and collections were made in some parts of Ireland in the Catholic churches. This elicited from Cardinal Simeoni a circular letter to the bishops, in which he said:

It is not forbidden to collect money to better the condition of the Irish people, but, according to the apostolic commands, collections are to be positively condemned which are avowedly intended to inflame still more the passions of men, so that leaders may easily abuse them to form wild plots against the laws. But most especially are they to keep aloof from such movements, when it distinctly appears that they tend to excite hatred, to assail the character of eminent men, and utter no condemnation of crimes and assassinations with which wicked men dishonor themselves; and most of all when it is put forth that real love of country is to be gauged by the amount of money contributed or refused, so that men are driven by a kind of force or fear to take part in them.

Germany.—The situation of the Catholic Church in Germany began to improve during 1883. Negotiations were carried on at Rome, and some concessions were made. A Catholic relief act, mitigating to some extent the severity of the Falk laws, passed the lower house of the Prussian Parliament, June 25, and became a law July 17. The condition of the Church had by this time become one of great distress: 8,000 priests were in exile; in the archdiocese of Posen, 171 parishes, containing 300,000 Catholics, were without parish priests, and 135 of them without clergy of any kind; in the archdiocese of Cologne, 286 parishes out of 813 were deprived of priests; in the diocese of Münster, 137 were vacant.

The Relief Act enabled bishops to perform episcopal acts, even out of their own dioceses, and to appoint vicars, chaplains, etc., in vacant parishes. The celebration of mass by priests not authorized by the Government was no longer a criminal offense, and the right of appeal to the Minister of Public Worship was granted.

The organization of the Catholics in Germany, called forth by the oppressive acts of the Government, continued active, as was shown by a general meeting of delegates at Düsseldorf, in Prussian Rhineland, in September.

France.—The course of the Government of the French Republic during 1883 was hostile to the Catholic Church, which was that of the vast majority of its citizens. Seminarians in their theological course were made subject to conscription, and compelled to serve in the ranks; clergy were made subject to be deprived of their stipends at will; religious instructions and emblems were removed from the schools, and books of morality, written by avowed infidels, were introduced. In the same spirit the Municipal Council in Paris suppressed the chaplaincies in the hospitals, closed the chapels, and forbade visits by the clergy, unless in cases where they were specially summoned by the patients. This was done against the protest of the Archbishop of Paris. In June Pope Leo XIII addressed a letter to President Grévy, personally urging him to exert his influence to secure a more just and equitable policy. The French Cabinet decided

that the President should answer the letter personally, not officially.

Belgium.—Belgium, imitating the policy of France, adopted a line of proceeding to diminish the influence of the Catholic Church. Religious teaching was suppressed in the schools, and (June 26, 1883) a law was passed making theological students liable to conscription. The Catholic party established schools of their own in which the pupils increased from 580,380 in 1880 to 622,437 in 1882.

A curious case in the Belgian and American courts resulted, August 14, in the acquittal of Canon Bernard, who had been arrested in America for embezzling the funds of the diocese of Tournai. The bishop of that see, Mgr. Dupont, becoming more or less insane, was removed by the Pope, who appointed Bishop Rousseaux to the management of the diocese. Bishop Dupont, however, endeavored to gain possession of the diocesan funds, and the Government claimed that the funds really belonged to the state. Canon Bernard, acting under orders to remove the funds, brought them to the United States. As there had been no misappropriation, his innocence was recognized.

Louise Lateau, the stigmatica of Bois d'Haine, died there on August 24. She was born Jan. 30, 1850, and from childhood was noted for her piety and charity, especially in the cholera-season of 1866. She was prostrated by a lingering malady the following year, and the stigmata, or wounds like those of Christ, began to appear in 1868, that in the side being the first. She was also declared to have lived without food from 1871. Her case excited much attention, and for a considerable period her symptoms were examined by medical men of all opinions. By Catholics generally the facts were accepted as well established, and she was regarded as one of those recorded to have received the stigmata, St. Francis of Assisi being the first. Others, however, impeached the evidence and denied the facts.

A congress, theological and devotional, was held at Liége, Belgium, June 5–10, 1883, called the Congress of Eucharistical Works.

Switzerland.—Early in the year an attempt was made to give the Catholic cantons representation in the Federal Council, from which they had been excluded for thirty years, but the project failed. The position of the Catholic Church, however, was improving; Mgr. Mermillod, Bishop of Lausanne and Geneva, who had long been in exile, was permitted to return. The Old Catholic body, though supported by the Government, had not gained ground, and was unable to retain the Church of St. Joseph, which had been taken from the Catholics, who accordingly recovered it.

Austria-Hungary.—The year was marked by a great national pilgrimage to the tomb of St. John Nepomucene, at Prague, in May, and by the religious and national celebration in Austrian Poland of John Sobieski's victory over the Turks at Vienna in 1683. During the year the laws making seminarians amenable to military service were to some extent a dead letter.

Russia.—The negotiations which Pope Leo XIII had conducted with the Emperor led, early in 1883, to a greater prosperity for the Catholic Church in the Russian dominions than it had enjoyed for many years. With the consent of the Russian Government, the Pope appointed twelve bishops to sees which had long been vacant. Numbers of priests were allowed to return from exile. The Catholic Metropolitan of Russia, Mgr. Fialkowtski, Archbishop of Mohilev, died on Feb. 11.

United States.—The Catholic Church in the United States, at the close of 1883, had 13 archbishops, 57 bishops, 6,885 priests, and 6,613 churches—an increase of 289 priests and 372 churches since 1882. The total number of Catholics is uncertain, the estimates being, as far as statistics can be depended on, below the real population, which, judging by the ratio of births and deaths, must exceed 7,500,000. In Vermont, of 7,350 children born, 2,037 were baptized in Catholic churches; the ratio of births to population is 1 to 45·2, but the Catholic population is estimated at only 36,000, when probably 50,000 would be nearer the truth. Of 90,980 births in Ohio, 16,216 were baptized in Catholic churches.

A provincial council, called at New York, met on September 23. Besides the cardinal, who presided as Archbishop of New York, it was attended by seven bishops of New York and New Jersey, and the Coadjutor Archbishop of New York. The decrees of the Council were transmitted to Rome for approval. About the same time the Pope called the various archbishops of the United States to Rome to discuss the matters to be treated in a Plenary Council of the whole Church in the United States, to be held in Baltimore in 1884. As several of the archbishops were unable from ill health to go, bishops from the provinces represented them and vacant sees. Many sessions of the American archbishops and bishops were held, and various points relating to the adaptation of the law governing the Church in the United States to the general law of the Church, and to the position of affairs in this country, were finally settled upon.

The celebrations in the year showed a strange contrast. The Jesuits celebrated April 17, the 250th anniversary of the founding of a mission of their order in Maryland, at the very outset of its colonization; and Chicago, now the see of an archbishop, celebrated the 50th anniversary of the erection of the first Catholic church, May 27; and the first resident priest at Chicago, Rev. J. M. J. St. Cyr, almost witnessed the celebration, dying Feb. 21.

Several cases touching the Catholic Church were before the courts in 1883. In March, Chief-Justice Morton, of the Supreme Court of Massachusetts, decided that a bequest of money to have masses said for the soul of the

testator was valid; but in another case in New York in June, Judge Freeman, of an inferior court, held such a bequest invalid.

Churches for colored Catholics were dedicated during the year in Baltimore and New York, and a Colored Home for the Aged at Louisville, Ky.

Canada.—The Catholic Church in Canada, and adjacent provinces, in 1883, had 5 archbishops, 25 bishops, 2,032 priests, and 1,699 churches, with a population of 2,082,895.

The pilgrimage to St. Anne at Beaupré was increased greatly from all parts of Canada.

A difficulty arose in connection with the establishment of a branch of the University Laval, of Quebec, in Montreal. Bishop Conroy, at the time of his death, had made progress in adjusting the questions regarding the succursal Medical College of Laval University and the Hôtel Dieu, Montreal, but new difficulties arose, which even injunctions from Cardinal Simeoni failed to remove. A new apostolic delegate, Mgr. Henry Smeulder, was sent out and made his solemn entry into the Basilica, Quebec, Oct. 22, 1883. The questions at issue were still undecided.

Chili. — The Spanish-American republics claim the right of patronage granted by Pope Julius II to Philip II, and under it assume the right of nominating bishops. This has led to frequent vacancies, as the candidates presented are not always such as any Pope can conscientiously appoint. In Chili the Government nominated Mgr. Tafaro for the archbishopric of Santiago; the Pope declined to appoint him, and finally sent Mgr. del Mate as delegate to Chili, to endeavor to adjust the difficulty; but the Chilian Cabinet almost immediately sent him his passports.

Australia.—The Catholic Church in Australia sustained a great loss in the death of Archbishop Roger Bede Vaughan, of Sydney, who died suddenly while in England, Aug. 18, 1883.

Foreign Missions.—The Catholic missions in Anam and China were involved in great danger by the French operations in Anam, as they led to a general exasperation against all Christians supposed to be connected with France. The Rev. M. Béchet, of the Seminary of the Foreign Missions, Paris, was decapitated, May 1st, in the province of Thang Hoa, Tonquin. The Abbé Terrasse was put to death at Yunnansen, China, and about 70 native Christians were driven from their homes and put to death. The church in Anam contained six vicariates apostolic, with 396 priests and 501,223 Christians, exclusive of the part under French rule, which contained 98 priests and 65,242 Christians.

In Madagascar Father Gaston de Batz and Brother Martin Brutail were starved to death at Mananzary, July 28 and 29.

The revolt of El Mahdi in the Soudan broke up all the Catholic missions, and the clergy fell into his hands, but no details of their fate have been obtained.

At Colombo, in Ceylon, on Easter-day, the Buddhists, at the instigation of a fanatic bonze, got up a procession near the Catholic cathedral, bearing a crucified monkey, grotesque figures in derision of the Virgin Mary, and other emblems intended to provoke the Christians. A bloody riot ensued. The trouble spread, and several Catholic churches in the rural districts were burned or pulled down.

ROUMANIA, a kingdom of Eastern Europe, formerly a province of Turkey. Absolute independence was proclaimed May 22, 1877, and was recognized by the powers at the Congress of Berlin, June 13, 1878. The principality of Roumania was erected into a kingdom March 26, 1881. The Constitution was elaborated by a Constituent Assembly in 1866. It delegates the legislative power to the Senate, of 70 members, and the Chamber of Deputies, of 145 members. Every citizen who pays taxes is a voter. The electoral colleges are four in number, corresponding to four classes of voters.

The King, Carol I, the son of Prince Hohenzollern-Sigmaringen, was born April 20, 1839. He was elected Prince of Roumania in 1866, after the abdication of Couza, who was elected Hospodar of Moldavia and Wallachia in 1859, and assumed the title of Prince Alexander John I upon their union into the Principality of Roumania in 1861. The executive authority is exercised by a council of seven.

Area and Population.—The area, as fixed by the Treaty of Berlin, is about 49,979 square miles. The population of the kingdom is known only by estimates. The official estimate of the total population in 1882 was 5,376,000. In Roumania, as it was before the Treaty of Berlin, the estimated population of 5,073,000 souls included 772,700 strangers.

About 4,529,000 of the inhabitants of Roumania proper belong to the Greek Orthodox Church, 114,200 are Roman Catholics, 400,000 Hebrews, 13,800 Protestants, 8,000 Armenians, and 2,000 Mohammedans. The capital, Bucharest, contains 221,000 inhabitants; Jassy, 90,000; Galatz, 80,000. The number of marriages in 1882 was, exclusive of the Dobrudja, 44,242; births, 191,653; deaths, 134,627.

Commerce.—The imports increased from 82,927,228 lei (the leu is the equivalent of a franc) in 1871 to 255,336,415 lei in 1880, 274,757,458 in 1881, and 268,850,921 lei in 1882; the exports from 177,682,783 lei in 1871 to 218,918,878 in 1880, 206,518,317 in 1881, and 244,730,199 lei in 1882. The commerce with the principal foreign countries in 1881 was in round numbers as follows, in lei:

COUNTRIES.	Imports.	Exports.
Austria-Hungary	185,000,000	73,100,000
Great Britain	50,500,000	82,200,000
Germany	31,800,000	1,600,000
France	22,700,000	19,300,000
Turkey	16,400,000	11,400,000
Other countries	18,300,000	19,900,000
Total	274,700,000	206,000,000

The values of the principal classes of imports and exports were as follow:

CLASSES OF MERCHANDISE.	Imports.	Exports.
Cereals	5,600,000	157,200,000
Animals	5,000,000	16,600,000
Hides, leather, and manufactures.	36,500,000	1,800,000
Timber and manufactures of wood	13,900,000	5,200,000
Textile materials and manufactures	98,400,000	7,100,000
Metals and manufactures thereof.	48,600,000	700,000
Vegetable oils	6,300,000	.....
All other articles	60,400,000	17,400,000
Total	274,400,000	206,000,000

The number of vessels entered at Danubian ports in 1880 was 19,875, of 2,969,848 tons; number cleared, 18,564—tonnage, 8,174,131.

Communications.—Railroads have contributed greatly to the development of Roumanian commerce and industry. The first line was built in 1869, to connect Bucharest with the Danube at Giurgevo. On July 1, 1882, there were 914 miles completed and 568 miles in the course of construction. Nearly the entire network was constructed by the state. The cost was 376,450,000 lei; gross receipts in 1881, 22,800,745 lei; expenses, 16,854,441 lei.

The length of telegraph lines in 1882 was 4,622 kilometres; length of wires, 9,640 kilometres; messages sent in 1882, 1,213,908; receipts, 4,076,921 lei; expenses, 3,659,549 lei.

The post-office forwarded 15,432,128 letters, newspapers, and packets, in 1882.

The Army.—By the law of 1868, last modified by the act of June 8, 1882, the military forces are composed of the permanent army and its reserve and the territorial army and its reserve, constituting the active army, the militia, and the civic guard in the urban, and the levy in mass for the rural communes. All Roumanians are obliged to serve three years in the active and five in the reserve permanent army, or the same period in the territorial army; or, if legally exempt, are enrolled in the militia, together with those who have completed their term of service, until they have passed the thirty-sixth year of their age, from which time of life they are inscribed for ten more years in the civic guard, or *levée en masse*. The effective of the permanent army in time of peace is 19,812 officers and men, with 2,945 horses and 180 pieces of artillery. The strength of the territorial army is about 100,000 men, with 90 cannon. There is a naval force of four dispatch-boats, three gunboats, a torpedo-boat, and eight launches for the Danube police.

Finances.—The capitation-tax of nine lei, or francs, with a higher rate for merchants, was reduced to three francs per head of the peasant population on the 1st of January, 1882. The state derives the chief part of its revenue from this source, from its valuable domains and salt-mines, and from tobacco and salt monopolies.

The budget for 1882–'83 states the revenues as follow:

RECEIPTS.	Lei.
Direct taxes	25,190,000
Indirect taxes	51,836,000
Domains	18,481,000
Ministries	17,282,522
Miscellaneous	7,317,922
Tithe of direct taxes for collection	2,519,000
Total revenue	122,627,044

The following were the main heads of the budget of expenditures:

EXPENDITURES.	Lei.
Public debt	45,456,431
War Ministry	26,404,533
Ministry of Finance	13,735,997
Ministry of the Interior	9,705,959
Worship and Instruction	11,831,800
Public Works	8,705,959
Ministry of Justice	4,276,496
Foreign Affairs	1,550,001
Council of Ministers	63,540
Reserve fund	1,374,680
Total	122,627,044

The public debt has been contracted since 1864. Two thirds of the borrowed sums have been employed in the construction of railways. A sinking fund exists for the redemption of all loans between 1888 and 1968. The principal loans bear interest at 5 and 6 per cent. The nominal amount of the debt, April 1, 1883, was 593,191,006 lei. About one third was held in the country, and the rest mainly in Germany.

The Danube Question.—The form in which the jurisdiction of the Danubian Commission was prolonged was an infringement on the independence of Roumania. In the Berlin Treaty, as well as in the previous ones, the principle of the equal rights of all the sovereign riverain states was not denied. International law furthermore universally intrusts to the immediate riparian states the administration of regulations for international rivers. Yet at the London conference which, in February, extended the powers of the commission for the minimum term of eighteen years, and extended its jurisdiction to Galatz, Roumania was offered only a deliberative voice, while Austria was by a fiction granted the privileges of a riverain state for a stretch of 1,221 kilometres where it is none. This result, compromising the rights of Roumania and humiliating to national feeling, she has striven for years to prevent. When it was finally accomplished, the anti-German feeling in Roumania rose to a dangerous pitch. Gen. Brialmont, the distinguished Belgian engineer officer, was summoned to Roumania to plan a system of fortifications for the frontier and the capital. Senator Gradisteano, on the occasion of the unveiling of a monument of Stephen the Great at Jassy, uttered belligerent threats against Austria. The difficulties of this young and striving nation, situated within the circle of the Eastern maelstrom, and in danger of being swept away by one or the other of the mighty powers on either side, suggests in critical emergencies desperate action, to which the hot and eager temperament of the Roumanian people is prone. Obliged to maintain an army in a constant state of preparation for war,

an army whose efficiency and bravery is proved, and which taxes the resources of the country severely—although they have thus far expanded since the Russian war under this burden and that of a heavy debt for railroads which do not yet pay interest and expenses—the Roumanians have a chance of not only maintaining, but of improving, their position by precipitating the conflict between Russia and Austria. Whichever side they aid with their formidable military resources, there is a large piece of "unredeemed" Roumanian soil to be annexed as the fruit of victory. There are between 3,000,000 and 4,000,000 Roumanians in the adjacent portions of Hungary and Russia. The district which could be claimed on the ground of nationality in Transylvania and Northwestern Hungary is the most extensive and valuable. The Roumanians of Bes sarabia, however, are related to the country by a closer tie. They were faithful subjects of King Carol until separated by the Treaty of Berlin. That experience stands in the way of an alliance with Russia. When no power would aid Roumania in maintaining the neutrality of her soil, she was obliged to become the partner of Russia in a costly war. The important services rendered by the Roumanian troops at Plevna helped to turn the scale of victory. Yet they were requited by the annexation to Russia of the province of Bessarabia. The Dobrudja and its ports, and the decree of independence, are not considered in Roumania sufficient compensation for the loss of Bessarabia. Of the two ports, Kustendje alone will be utilized, and to render that one available, five years more of time and the expenditure of 20,000,000 francs in the construction of a bridge and harbor will be required. The withdrawal of the Kilia branch of the Danube from the jurisdiction of the International Commission was a fresh warning of the danger from the side of Russia. (See DANUBE, EUROPEAN COMMISSION OF THE.)

More sleepless and constant, however, than jealousy of Russia, is the mistrust of German influence and Austria, because the policy of the King and of the present Government lays them open to attacks, on the ground of subservience to German interests. The King, as a Hohenzollern, had difficulty in winning the confidence of the people. He maintained his position by sinking his nationality, and taking the lead in Roumanian national tendencies and aspirations. His present advisers have gained the confidence of the country by the tact and devotion with which they have served the cause of national independence, but their attitude toward the German powers is sometimes called in question. French political influence has vanished from Roumania, but French thought is not extinct. The Germans have pursued their commercial expansion in Roumania more actively than in any other part of the East, attracted by the richness of the country, and by its social and political conditions. Their economical dependence upon German capital is a source of uneasiness and fear to the Roumanians. A sign of this feeling is the recent action of the legislature in enhancing the disabilities of foreigners to hold land, etc., instead of sweeping them away, so as to promote the inflow of German capital. Their sensitiveness, on account of the expansion of German energy and culture, is as great as that of any of the Slav *peuplades* of the Balkans. A Roumanian Government could not venture to show too great complaisance to Austria. To the Germans an independent Roumania is a bastion to shield the "civilizing mission" of the German race in the Orient, a dam against the "Slavic deluge"; while to the Russians it is an obstacle in their path to Constantinople, to be eventually erased from the map.

Political Parties. — The Red, or Democratic party, which has guided the state during a period of remarkable development and progress, has governed for many years without an organized and permanent political opposition. Rosetti's electoral reform project raises the old class conflict, and produces dissension in the dominant party. The Reds, inspired with the ideas of French liberalism, emancipated the serfs and expropriated the landlords. The Whites, or Conservatives, overthrew the Government, drove out the reforming Hospodar, Colonel Couza, and set a German prince on the throne; but, as they could not undo the great reform, they had to resign the helm again into the hands of the Reds. They only succeeded in making a better bargain for their lands. Rosetti was the man of ideas, but Bratiano and other practical statesmen took the direction of the Government. The Boyar families were many of them won over, while Cogelniceano and the men who were identified with Prince Couza's revolutionary reforms were left out. The Reds thus became merged in the National-Liberal party. The excluded Radicals were an insignificant group. The Conservative Opposition, though few in number, were politically powerful until they melted away to a small remnant. The qualified acceptance by the Government of Rosetti's project, revived the conflict between democratic and oligarchic elements. His plan is to abolish the distinct electoral colleges, and have the great proprietors with incomes of over 300 ducats net, the intermediate class, with 100 ducats of income from real property, and the indirect peasant voters, elect their candidates to the Chamber together. The question was not decided by the general election to a Constituent Assembly, which took place in May. The regular Opposition won only 13 of the 145 seats in the Chamber, while the Government obtained more than the necessary two-third majority in the Senate. This and the other internal reforms which the Constituent Assembly have to consider, were obscured by the conflicts and intrigues to which the understanding arrived at between the

Austrian and Roumanian cabinets gave rise. The Old Conservatives, who lean toward a Russian connection as the means of preserving the class privileges of the great families, uttered covert threats of revolution and dethronement. A pretender, Prince Bibesco, has laid plans to contest the succession to the throne with the King's brother or nephew, who are his constitutional successors, as he has no male issue. The Young Conservatives approved the foreign policy of the Government. The group which calls itself the Pure Liberals, accused the ministers of reducing the country to vassalage under Austria and Germany, and submitting to the dictation of Prince Bismarck.

Reform Legislation.—The Legislature which reassembled in November, is intrusted with the revision of three articles of the Constitution. One of the projected reforms is an alteration in the militia system, which provokes no opposition. On Rosetti's scheme to extend suffrage and unite the three classes of electors, the Government party is divided. The third change is reactionary. It is to extend to thirty-two years the period during which the peasantry are not allowed to sell their lands. The Liberal opponents of the Government, who receive support and encouragement from Russia as well as the Conservatives, make this obnoxious proposal the ground of a popular agitation. The people are invited to compare their condition with that of the Servians and Bulgarians, who enjoy more political liberty and individual rights than the Government is ready to accord to them. The emancipated serfs are taught to believe that they should have received their farms as a gift, instead of paying a heavy price to the former serf-proprietors. The idea of a natural ownership in the soil is a logical outgrowth of the condition of being bound to the land. Personal liberty without land, therefore, seems to them a delusion, particularly since the quantity of land apportioned to them, and the conditions of payment and amount of the remuneration exacted by the proprietors, were such as to deprive their liberation of its virtue to a considerable extent. The peasantry, therefore, now clamor against the sale of the public lands, and demand that they should be restored to their rightful owners. The agitation reached such a height in the autumn that whole communes refused to pay to the Government the annual quota of the purchase-money for their farms.

RUSSIA, an empire in eastern Europe. The law-making, executive, and judicial authority is concentrated in the person of the Emperor, who is also the spiritual head of the Church. The government of the country is under the supreme direction of the Emperor's private Cabinet. Subordinated to the Imperial Cabinet is the Council of the Emperor, divided into a legislative, an administrative, and a financial department, the functions of which are to superintend the administration of the laws, and to suggest alterations and amendments. A second great council is the directing Senate, which is the highest court of judicature, besides exercising a control over the other tribunals of the empire. It is divided into eight sections, each of which acts as the court of final resort in a particular branch of the law. A third great governing body is the Holy Synod, directing ecclesiastical affairs. All its decisions must be ratified by the Emperor.

The Imperial Cabinet is divided into eleven departments. The Minister of the Imperial Household is Gen. Count Vorontzoff Dashkoff, who succeeded Count Adlerberg in 1871. The Minister of Foreign Affairs is Nicholas de Giers, who was the practical head of the department for some years before the retirement of Prince Gortchakoff in March, 1882. The Minister of War is Gen. Vannovski, appointed in March, 1881. The Minister of the Interior is Count Tolstoy, who succeeded Gen. Ignatieff in June, 1882. Baron Nicolai took the place of Count Tolstoy as Minister of Public Instruction. The Minister of Finance is M. Bunge, successor to Count Abaza. The Minister of Domains is M. Ostrovski. The Minister of the Navy, which is under the command of the Admiral-General, the Grand Duke Alexis, is Vice-Admiral Chestakoff. The Minister of Public Works is Vice-Admiral C. Possiet, appointed in 1874. All the ministers and chiefs of superior administrations are members of the Committee of Ministers, which is presided over by Secretary of State Reutern.

The Lieutenant of the Emperor in the Caucasus is Prince Dondoukoff-Korsakoff. The chief of the first section of the Privy Council is Secretary of State Taneieff; of the second, Marcus. The adjunct in charge of the third section is Secretary of State Delianoff. The President of the Council of the Empire is the Grand Duke Michael; the heads of the three departments are Prince Ourousoff, M. Titoff, and Admiral Metline. The head of the Ministry of Justice is Secretary of State Nabokoff. The President of the Holy Synod is Isidore, Metropolitan of Novgorod, St. Petersburg, and Finland; the Procurator-General, M. Pobedonostzeff. The Comptroller-General of the Empire is Secretary of State Solski.

Area and Population.—The area of the Russian Empire is 21,702,230 square kilometres, or 8,387,816 square miles. The total population, according to the latest estimates, is 100,372,562. The following table gives the area and population of the main political divisions of the empire:

DOMINIONS.	Square kilometres.	Population.
Russia in Europe	4,888,713	75,731,898 ('80)
Kingdom of Poland	127,810	7,245,419 ('80)
Grand Duchy of Finland	373,608	2,081,612 ('81)
Caucasus	472,666	5,087,589 ('80)
Transcaspian territory	327,068	208,000
Siberia	12,495,109	3,947,906 ('80)
Central Asia	3,017,760	5,075,696 ('80)
Russian Empire	21,702,230	100,372,562

European Russia is divided politically into fourteen general governments, or viceroyalties, and fifty-one governments. The governors-general have discretionary powers in all affairs, civil and military. Geographically and ethnographically it is divided into Great Russia, containing 880,798 square miles and a population in 1879 of 26,364,757 souls; Little Russia, containing 80,226 square miles and 8,806,895 inhabitants; Eastern Russia, containing 546,470 square miles and 17,213,607 inhabitants; South Russia, containing 168,381 square miles and 6,857,949 inhabitants; Western Russia, containing 161,897 square miles and 11,508,243 inhabitants; and the Baltic provinces, containing 57,267 square miles and 3,743,356 inhabitants. The government of Poland, which was formerly separate, was finally merged in that of Russia by a ukase issued Feb. 23, 1868. Various provinces have their peculiar institutions and customs. The Baltic provinces enjoy particular rights, but these have been much modified lately. The Grand Duchy of Finland preserves its separate government and representative institutions.

The average density of the population of Russia in Europe, including Poland and Finland, is forty persons to the square mile; that of Asiatic Russia two to the square mile; that of the entire empire twelve to the square mile. According to official returns for 1867–'70 the natural increment of the population of the empire is about 781,000 per annum.

The Slav population of European Russia is divided into three groups—the Great Russians, or Veliko-Russ; the Little Russians, or Malo-Russ; and the White Russians, or Bélo-Russ. The Great Russians, inhabiting the central provinces, number about 35,000,000 souls. The Little Russians, some 11,000,000 in number, constitute the bulk of the population of Poltava, Kharkov, Chernigov, Kiev, Volhynia, Podolsk, Ekaterinoslav, and Taurida. The White Russians, numbering about 3.000,000, are distributed over the provinces of Mohilev, Minsk, Vitebsk, and Grodno.

The area in square kilometres and estimated population of the provinces of Central Asia in 1880 were as follow:

GOVERNMENTS.	Area.	Population.
Uralsk	366,402	525,332
Turgai	523,656	320,075
Akmolinsk	545,339	456,325
Semipalatinsk	487,678	526,380
New territory on the Black Irtysh	24,167	.....
Semiretchensk	402,202	685,945
Russian part of Ili	11,288	70,000
Fergana	72,634	808,000
Zarafshan	50,980	351,897
Syr Daria	429,980	1,109,542
Amu Daria	108,585	222,200
Central Asia	3,017,760	5,075,696

The number of crown peasants liberated by the late Emperor was 22,225,075. The number of serfs belonging to nobles and other private owners who were emancipated according to the decree of March 3, 1861, was estimated to be 22,000,000. The number of owners was 109,340. The peasants paid for the lands allotted to them on a scale by which the value of their previous labor was capitalized at 6 per cent. interest. Of the capital sum 20 per cent. was paid down by the peasant and 80 per cent. advanced by the Government, to be repaid with interest by the peasant in forty-nine annual installments. Of the cultivable land of Russia proper about 5 per cent. is held by former serfs, and 15½ per cent. by crown peasants, while 34½ per cent. belongs to the state, 20 per cent. to nobles and other great proprietors, and 20 per cent. is the property of other owners or is unsurveyed, and the remaining 5 per cent. town lands and mining property.

The movement of population is reported for 1880 in Russia, Poland, and Siberia, and for 1881 in Finland, as follows:

DOMINIONS.	Marriages.	Births.	Deaths.	Excess of births.
European Russia	725,427	3,678,071	2,684,828	993,243
Poland	62,771	294,021	189,514	104,507
Finland	14,288	74,469	53,777	20,692
Siberia	32,952	180,802	131,793	49,009

The following is a list of the cities which contained at the latest returns more than 100,000 inhabitants:

CITIES.	Population.
St. Petersburg (1880)	861,920
Moscow (1882)	750,867
Warsaw (1882)	406,261
Odessa (1882)	217,000
Riga (1881)	168,844
Kichinev (1880)	180,000
Kiev (1874)	127,251
Saratov (1880)	109,588
Kharkov (1879)	102,059

Roman Catholics are most numerous in the formerly Polish provinces, Lutherans in the provinces of the Baltic, and Mohammedans in Southern Russia, while the Jews are almost entirely settled in the towns and larger villages of the western and southwestern frontier districts.

Education.—The empire is divided into nine educational districts, over each of which a curator is appointed. There are nine universities, attended in 1878 by 6,250 students. There were in 1876 24,456 elementary schools, with 1,019,488 pupils. The number of pupils in the normal schools in 1877 was 4,596; the number in the lyceums, gymnasia, and other secondary schools was 88,400. In the budget for 1882, 18,030,867 rubles were appropriated for public education. In 1860 only 2 per cent. of the recruits for the army could read and write; in 1870, 11 per cent. In Finland all of the population who are of adult age are able to read, if not to write.

Commerce.—The following table shows the growth of the export commerce in ten years, giving the value of the merchandise exported each year to Europe and the West, to Finland, and to Asiatic countries, in millions of rubles and tenths of millions:

YEAR.	Europe.	Finland.	Asia.	Total.
1872	311·6	6·2	9·3	327·1
1873	345·9	8·8	9·8	364·5
1874	411·2	10·3	10·3	431·8
1875	360·6	11·8	9·6	382·0
1876	379·3	12·0	9·4	400·7
1877	508·3	12·8	6·9	528·0
1878	596·5	12·3	9·3	618·1
1879	606·4	10·8	10·5	627·7
1880	476·4	9·6	12·7	498·7
1881	481·3	12·0	13·1	506·4

The following table, corresponding with the above, shows the development of the import commerce during the same period:

YEAR.	Europe.	Finland.	Asia.	Total.
1872	407·7	8·3	19·2	435·2
1873	412·5	9·5	21·0	443·0
1874	440·2	10·7	20·5	471·4
1875	298·9	11·3	20·8	531·0
1876	442·8	10·3	24·5	477·6
1877	291·5	9·0	20·5	321·0
1878	557·7	9·8	28·1	595·6
1879	548·2	9·2	30·3	587·7
1880	578·3	11·4	33·0	622·7
1881	476·1	10·4	31·2	517·7

The following table shows the extent of the commerce in 1881 with each of the principal foreign countries:

COUNTRIES.	Imports.	Exports.
Germany	219,901,000	148,881,000
Great Britain	108,441,000	155,795,000
France	19,546,000	53,484,000
Austria-Hungary	23,091,000	28,105,000
Belgium	27,692,000	23,857,000
Netherlands	4,737,000	28,389,000
Turkey	22,307,000	9,534,000
Italy	9,585,000	4,718,000
Sweden and Norway	6,217,000	13,288,000
Denmark	721,000	2,353,000
Greece	2,567,000	1,943,000
Roumania	945,000	8,160,000
United States	18,315,000	381,000
South America	14,681,000	.....
China	20,247,000	2,631,000
Persia	7,636,000	3,869,000
Other countries	23,643,000	9,015,000
Total commerce	530,222,000	494,433,000

The gold-mining industry, which produces about 40,000,000 rubles a year, is believed to be capable of great improvement. Alluvial mines in the Altai mountains produced 6,739,-825 rubles of gold in 1883. It was formerly necessary to import the sulphur from abroad, but rich sulphur-mines have been discovered on Lake Baskunjak, and near Kazan. Valuable zinc-mines have been found near Khodjent, in Turkistan. The notion that the gold production of Russia is diminishing is contrary to the facts. The aggregate product of the crown works for fifty years, from the time of the introduction of quartz-mining down to 1869, was 84,960 kilogrammes, of the value of 100,-000,000 rubles, of which the cost of working was 56,000,000 rubles, leaving a net profit of 44,000,000. In the private works 146,912 kilogrammes were taken out, yielding 23,000,000 rubles in royalties to the Government, and 78,-000,000 rubles in net profits to the private owners. The production has steadily increased, particularly since the transfer of Government works to private individuals. In 1868 the number of mines and diggings in Siberia was 993, the number of persons employed 56,260, the output 26,376 kilogrammes. In 1877 the quantity got out was 39,000 kilogrammes, and the number of persons employed 66,127. The mining industry in the Altai is on the decline, although the deposits of gold and argentiferous lead-ore are as far from being exhausted as they are in the Ural. In the course of the hundred years from 1745 to 1845 there were mined 1,232,000 kilogrammes of silver, and 34,856 of gold, of the total value of 138,000,000 rubles. Now most of the mines are flooded with water, and the mining authorities recoil from the expense of placing them again in working order. The platinum product of the Ural is comparatively small, amounting in the year 1876 to 1,550 kilogrammes. The greater part of the platinum is exported, since the Government gave up minting coins of this metal. Rich silver, lead, and copper mines have been discovered in the Kirghiz Steppe, near Bajanaul, but, for the lack of capital and communications, they remain almost entirely unworked. In the iron-furnaces of the Ural the product has increased in ten years. About 1870 it already amounted to 220,000,000 kilogrammes, or two thirds of the total product of Russia, valued at 50,000,000 rubles. The copper-mines of the Ural are exceedingly productive. The graphite mines of the Sayan mountains are becoming exhausted, and the most valuable deposits have already given out. The demand for this substance is greater since its employment for crucibles. Rich beds were discovered near the lower Yenisei, between 1859 and 1862. By the sea-route, discovered by Nordenskiöld, the product of the new mines, which has heretofore been transported by land through West Siberia to the mouth of the Petchora, can now be conveniently got to market. The product of Siberian furs of the more valuable sorts has greatly declined. The number of ermine-pelts offered at the annual fair at Irbit declined from 108,000 in 1850 to 56,000 in 1860, and 24,000 in 1870. Sable-pelts decreased in like proportion from 43,600 to 10,200 and 5,150. Squirrel-skins, on the other hand, increased from 8,490,000 in 1850 to 4,175,000 in 1870. The cause of the decline of the Russian fur-trade is supposed to be the imperfect manner of preparing and coloring the fur. The skins of Siberian water-fowl are exported in large numbers. Siberia has become the chief source of the ivory-supply. The tusks of the mammoth are twice as heavy as those of the African elephant. There have been exhumed altogether about 22,000 mammoth-skeletons. The carved and polished objects in diorite, porphyry, and other metal-colored stones, are manufactured at Kolivan in the Altai, and Ekaterinenburg in the Ural, where very low wages are paid, but their cost is greatly enhanced by the transport in sledges over the Ural mountains.

The rock-oil of the Caucasus has already be-

gun to compete with the American. In 1882 the new industry suffered from a crisis through overproduction. The quantity of naphtha produced in the Baku district during that year was 53,000,000 poods (1 pood = 36 pounds). There were shipped by sea 12,663,645 poods of petroleum, and 500,000 poods went by rail to Tiflis and Batoum. There were exported, besides naphtha, residuum to the extent of 17,842,946 poods, 1,267,580 poods of crude naphtha, 483,027 poods of lubricating oil, and 7,242 poods of benzine. In 1883 the yield of the wells reached an unprecedented figure, and a great quantity went to waste for lack of reservoirs. The producers, crippled by speculation, place their chief hope in the railroad recently begun between Baku and Tiflis, although the heavy grade rising to the Suram pass, 4,000 feet above the sea, precludes extensive shipments and low rates. The present mode of transportation is tedious and costly. The oil is loaded in vessels in the excellent harbor of Baku; but, within 120 miles of Astrakhan, it is transshipped to lighters, and again reloaded in the river-boats of the Volga at Astrakhan. The town of Baku, which before 1872 was only known as the place where the worshipers of the "eternal fire" assembled, has grown into an important place, although the country around is absolutely sterile, the water is saline and bitter, and the protracted heat of summer and the rude storms of winter render it unwholesome and uncomfortable.

Deposits of phosphorite, about a foot in depth, extend over 20,000 square versts in Smolensk, Orel, Kursk, Voroneje, Tambov, Penza, Nijni-Novgorod, and Simbirsk. The existence of this valuable manure has been known for twenty years, but it has only recently been exploited to satisfy a demand for export to England and other countries. It then came into use in Russia, and is found to have valuable qualities, especially in the cultivation of the beet-root.

Navigation.—The number of vessels entered at Russian ports in 1881 was 12,801, of which 7,859 were with cargoes; the total number cleared was 12,313, of which 10,442 were with cargoes. Among those entered there were 5,515 steamers, among those cleared 5,593. The number entered at the ports of the Baltic was 6,209; at southern ports, 4,973; at the White Sea ports, 763; at Caspian ports, 856. Of the total number entered, 2,322 carried the Russian flag, 2,509 the English, 1,883 the German, 1,483 the Swedish or Norwegian, 1,384 the Turkish, 881 the Greek, 586 the Danish, 691 the Austrian, and 576 the Dutch. The entries of coasting vessels numbered 46,604, of which 17,806 were of steamers.

The mercantile marine consisted in 1878 of 3,643 sailing-vessels, of 308,230 tons, and 259 steamers, of about 74,324 tons.

Railroads.—The total length of railways on the 1st of January, 1878, was reported as 20,417 versts, or 13,611 miles. The length on January 1, 1883, is reported as 21,457 versts, or 14,304 miles. The aggregate capital of the railroads amounted in 1878 to 1,450,288,196 rubles, about two thirds in bonds and one third in stock. Over two thirds of the bonds are held by the Government, representing nearly one half of the whole railroad property of the country.

The project of a great Siberian railroad was declared most urgent by a special commission which sat in 1870. Seven lines are projected in the coal-fields of the Don to connect them with the Black Sea, the Sea of Azof, and the existing trunk lines. Their total length is 1,734 miles.

In 1880–'81 a military railroad was built from Michaelovsk, on the Caspian Sea, to Kizil-Arvat, and a tramway from that point to Beurma, near Bami, within 200 miles of Astrabad and 260 of Sarakhs, on the northwest frontier of Afghanistan. The Russian Government has long entertained the scheme of building a railroad through Central Asia, to compete with the sea-route for a part of the India traffic, as well as to develop the commerce of the countries it will traverse. The route from Orenburg *via* Tashkend, Samarcand, and Cabul to Peshawer, on the Indus, was given up, on account of the unproductive nature of the country, in favor of a line through the Caucasus. Gen. Anenkoff's project of a mixed land and water line with a ferry for railroad-trains across the Caspian, from Baku to Kizil-Arvat, was preferred to the route from Tiflis through Persia, passing through Tiflis, Tabreez, Teheran, and Candahar, and ending at Thikarpur, on the Indus. The length of the route chosen from Paris, *via* Warsaw, Moscow, Vladikavkas, Baku, Kizil-Arvat, Herat, and Candahar, to Shikarpur, is 8,000 kilometres; the time required for the journey sixteen, and eventually twelve days. The length of railroad to be constructed to connect the European with the Indian net-work by this route is only 2,000 kilometres. The line already constructed from Michaelovsk to Kizil-Arvat passes through the most difficult and inhospitable portion of the region. To extend the line to Astrabad, Sarakhs, and Cabul, or to Herat and Candahar, and join the Indian system of railroads, involves no question but that of the political susceptibilities of Great Britain.

Posts and Telegraphs.—The number of letters, newspapers, and parcels forwarded through the post-office in 1881 was 221,992,520 by the internal service, and 25,016,496 by the international service. The number of post-offices in 1881 was 4,521; of employés, 15,405.

The length of the state telegraph lines in 1881 was 56,340 miles; length of wires, 168,880 miles; the length of other lines, 4,855 miles; the number of domestic paid dispatches in 1881, 7,202,930; the number of international dispatches sent, 534,133; the receipts in 1881, 33,513,218 francs; expenditures for service, 15,059,333 francs; for maintenance and

materials, 9,619,523 francs; for the construction of new lines, 3,437,432 francs. The annual surplus of receipts is by imperial decree devoted to the extension of the lines.

The Army.—The military forces of the empire are divided into the active and the territorial armies. The active army is composed of the regular troops, recruited by annual conscription; the reserve, consisting of men on furlough, who are destined to complete the army on a war footing; the Cossack irregular cavalry; and troops made up of foreign elements. The territorial army is recruited from all the rest of the male population capable of bearing arms, between twenty and forty years of age. It is divided into two classes. The first comprises the men who have escaped the conscription after four drawings, and of those who have completed their time of service in the active army and its reserve. This class can be turned into the active army if the reserve is insufficient. The second class is to be called out solely for the defense of the country. Service in the regular army lasts six years, and in the reserve nine years. There is no immunity from service by substitution. Young men of a certain degree of education are accepted as volunteers at the age of sixteen or upward, and after a short service undergo an examination which releases them for service except in the reserve, or pass a higher examination as candidates for officers' commissions. The Cossack levies are regulated by special treaties. Many tribes of diminutive stature and unwarlike disposition are excused. An average levy of one in 250 males makes a force of about 100,000 men. The Don Cossacks and some of the other tribes, numbering from 600,000 to 700,000 souls, are all bound to render military service, and to furnish their own horses and equipments, and provision themselves while remaining within the borders of their own country. In return they are exempt from all taxes, and receive an annual tribute from the Emperor, paid to the tribe.

The strength of the regular army on the peace footing is 660,025 men, with 67,951 horses; on the war footing, 1,970,208 men, with 224,788 horses. The Cossacks number 51,946 men, with 38,707 horses, on the peace footing, and 145,325 men, with 138,036 horses, on the war footing. The other irregular troops number 5,776 men on the peace footing, and 6,331 on the war footing. Other bodies bring the peace effective of the active army up to about 770,000, and the war effective to 2,200,000 men. With the territorial militia the full strength of the military forces of the empire in time of war is about 3,000,000 men.

Fortification works, strategic railroad construction, and the massing of detached regiments on the German frontier, excited the suspicions of the Germans in 1883. A semicircle of six forts along the left bank of the river, seven kilometres from the city, was begun for the protection of Warsaw, which has hitherto possessed no fortifications. Another line of four large forts is planned seven kilometres from Praga, the suburb on the right bank of the river. Ivangorod, on the Weichsel railway line, is to be fortified. Fortifications at Kovno on the river Niemen, and on the Königsberg and Wilna railroad, are in process of rapid construction. The irritation caused by stationing cavalry regiments in Poland led to their recall later in the year, in earnest of the pacific assurances of M. de Giers.

The Navy.—Russia maintains a fleet in the Baltic, one in the Black Sea, and smaller naval forces in the Caspian Sea, in the Sea of Aral, and in the waters of Siberia. The Baltic division comprised, in 1882, 27 ironclads, including the two under construction, carrying 282 guns; 33 other steamers, carrying 275 guns; 59 transports, 8 sail-ships, and 95 torpedo-vessels. The Black Sea division consisted of 4 ironclads, with 14 guns; 27 armed steamers, with 105 guns; 59 unarmed steamers, and 14 torpedo-vessels. The Caspian fleet comprised 12 armed and 4 unarmed steamers; the Aral fleet, 6 steamers, with 13 guns; the Siberian fleet, 8 armed steamers, with 42 guns; 13 other steamers, and 6 torpedo-vessels. The ironclad navy consists of 1 mastless double-turret vessel, the Peter the Great, with 14-inch armor and 4 40-ton guns of 12-inch calibre; 12 sea-going cruisers, plated with from 4½ to 7 inches of metal; 16 battery-ships and monitors for coast-defense; and 2 circular monitors of the type designed by Admiral Popoff. The crews are recruited by conscription, but partly by enlistment also. The period of service is nine years, seven active and two in the reserve.

Finances.—The Russian budget is modeled after the financial accounts of the French Empire. The revenues are classified as ordinary receipts, extraordinary receipts, and *recettes d'ordre*. The latter are the proceeds of certain sources of revenue, and are balanced by equal sums on the other side of the accounts. The extraordinary receipts consist principally of sums borrowed for the purpose of subsidizing railroads and for other works of general utility. There have occurred large annual deficits for more than half a century, occasioned partly by the construction of railroads, but mainly by war expenditures. The war expenditures for the four years 1876–'80 were 1,075,396,653 rubles. (The silver ruble is the legal unit of account, and is worth 73·4 cents; the circulating medium is paper money, which is exchanged at a discount of from 10 to 20 per cent. and over.) The closed accounts for 1881 state the amount of the ordinary receipts as 651,754,009 rubles, and the ordinary expenditures as 732,413,150 rubles, supplemented by extraordinary military expenditures of the amount of 29,980,687 rubles; leaving a deficiency of 110,639,828 rubles. To cover this, the proceeds of various loans, to the amount of 112,679,027 rubles, were applied, leaving a balance in the treasury of 2,039,199 rubles. The

receipts in 1881 from the various sources were of the following amounts:

SOURCES OF REVENUE.	Rubles.
Land and poll taxes	114,469,000
Trading licenses	22,466,000
Liquor	224,389,000
Tobacco	12,256,000
Beet-root sugar	8,695,000
Customs	84,626,000
Stamps	14,969,000
Registration	9,710,000
Passports	3,237,000
Navigation dues	727,000
Quick-transit taxes	7,788,000
Highways	171,000
Miscellaneous imposts	5,852,000
Mining royalties	865,000
Mint	2,637,000
Post-Office	14,184,000
Telegraphs	8,339,000
Railroads of the state	3,796,000
Forests	14,492,000
State mines	4,491,000
Farmed domains	6,992,000
Sales of domains	4,745,000
Other state property	661,000
Special funds	13,442,000
Receipts applicable to railroad debt	15,622,000
Repayments	3,748,000
Revenue of Transcaucasia	8,507,000
State institutions	1,336,000
Sales	3,226,000
Fines	2,102,000
Temporary receipts	42,000
Accidental receipts	13,856,000
Budget d'ordre	24,869,000
Total	651,754,000

The expenditures in 1881 under the various heads were as follow:

EXPENDITURES.	Rubles.
Public debt	195,600,000
Imperial Chancery	2,171,000
Holy Synod	10,171,000
Imperial household	10,342,000
Foreign Affairs	4,211,000
War	253,671,000
Marine	32,138,000
Finances	108,379,000
Domains	19,837,000
Interior	67,462,000
Public Instruction	17,413,000
Communications	12,168,000
Justice	16,847,000
Control	2,438,000
Stud	904,000
Transcaucasia	8,641,000
Total	762,398,000

The budget for 1882 gives the total ordinary revenue as 656,717,870 rubles, the *recettes d'ordre* as 22,165,068 rubles, and the extraordinary receipts as 83,121,574 rubles; total, 762,004,512 rubles. The ordinary expenditures are set down as 658,595,151 rubles, the *dépenses d'ordre* as 22,165,068 rubles, the anticipated deficiency in the receipts as 8,500,000 rubles, and the extraordinary expenditures as 72,744,-293 rubles; total, 762,004,512 rubles.

In the budget for 1883 the ordinary receipts are estimated at 707,573,007 rubles, the *recettes d'ordre* at 5,974,581, the extraordinary receipts at 62,457,835 rubles, and the balance in the treasury at 2,500,000 rubles; total, 778,505,423 rubles. The ordinary expenditures are estimated at 702,371,492 rubles, the *dépenses d'ordre* at 5,974,581, the extraordinary expenditures at 63,659,350 rubles, and the anticipated deficits in the receipts at 6,500,000; total, 778,-505,423 rubles.

The public debt has accumulated since 1850. The loans were contracted in England, Holland, France, and Germany, and the proceeds applied partly to cover the annual deficits and partly in the construction of railroads. Before that year the interest-bearing debt was small, although large amounts of inconvertible paper currency were in forced circulation since the time of Catharine II. A loan of £6,400,000 was issued in 1850 for the railroad between St. Petersburg and Moscow; a loan of £12,000,000 sterling in 1859, one of £8,000,000 sterling in 1860, and a fourth for £15,000,000 sterling in 1862. These were followed by other foreign loans. Large sums were raised also by domestic loans. The total amount of the debt in September, 1878, was estimated to be 2,450,-000,000 rubles, including two internal loans, called the Eastern loans, issued after the commencement of the Turkish War. The total amount on Jan. 1, 1882, was stated to be 3,-051,180,190 rubles, including 545,042,630 rubles of paper notes. This sum did not include railroad bonds and the debt repayable by the peasantry for their lands, amounting together to 630,555,049 rubles. The amount of paper money in circulation was reported to be 716,-515,125 rubles, of which 171,472,495 rubles were protected by a reserve. A new foreign loan of 50,000,000 rubles was raised in 1883.

One of the objects of the latest loans was to withdraw from circulation 50,000,000 paper rubles. On the ground that it would disturb commercial values, the Finance Minister reduced the sum to 30,000,000 rubles. By a ukase, dated Nov. 23, 1883, 30,000,000 rubles were devoted to railroad construction.

Finland.—The Constitution of the Grand Duchy of Finland was confirmed at the Diet of Borga, and by proclamations issued by each successive Emperor.

The Governor-General is General Count Heiden, appointed in June, 1881; the Minister for Finland, at St. Petersburg, is Baron T. Bruun.

The population on Dec. 31, 1880, was 2,081,-612, of whom 1,019,187 were of the male and 1,062,425 of the female sex. In respect of religion it was divided into 2,040,535 Lutherans, 38,757 Greek Orthodox, and 2,320 Roman Catholics. The population of Helsingfors, the capital, was 44,584 in 1881.

The total foreign commerce in 1882 was in value 167,100,000 gold marks of imports and 119,800,000 marks of exports (the Finnish mark is equivalent to a franc, or 19·3 cents). The imports from Russia amounted to 71,700,000 marks, the exports to Russia to 54,500,000 marks; the imports from Germany to 42,600,-000 marks, the exports to Germany to 8,300,-000 marks; the imports from Great Britain to 15,900,000 marks, exports to Great Britain to 24,400,000; the imports from Sweden and Norway to 13,700,000 marks, exports to Sweden and Norway, 7,800,000. The United States received none of the exports, but furnished 2,-200,000 marks of the imports.

The length of railroads in operation in 1882 was 732 miles, all except 20 miles the property of the state.

The number of letters transmitted through the post-office in 1881 was 6,249,932, of newspapers 7,790,439. The receipts were 687,400 marks; expenditures, 585,486 marks.

The revenue of the Government is set down in the budget for 1883 as 38,019,135 marks.

The public debt on the 1st of January, 1883, amounted to 70,085,739 marks, including a loan of 8,100,000 German marks issued in December, 1882, through the Bank of Finland and Rothschild & Son, of Frankfort, at 4 per cent. interest.

The Senate of the Grand Duchy of Finland has lately received the additional powers to make over land to purchasers who are not Finns, to establish all kinds of economical, scientific, and literary associations, to raise public buildings, to grant concessions for tramways, etc., and to reduce the customs tariff of the duchy. The central authority does not, however, give the Finnish state the right to issue passports to Finns for going abroad or to naturalize foreigners.

Coronation of the Emperor.—From the beginning of the year the approaching ceremony of the coronation engrossed the thoughts of official circles and of the general public, to the exclusion of all other subjects. It was a subject of anxiety to the loyal classes, among whom the feeling of gratification over the end of the anarchic interregnum, which would be signalized by the appearance of the Emperor duly crowned and anointed as the head of the nation, was tempered by dread of the threatened blow of the Nihilists. Such was the fear of regicidal plots, that the date of the ceremony was not publicly announced until a short time before the event. On New-Year's day the Emperor expressed the intention of assuming the imperial crown at an early date. In February he issued a proclamation announcing that the ceremony would take place in the month of May. He declared that he had postponed the rite so long because it was not a fitting time while feelings of grief and horror overwhelmed the hearts of his subjects, and that he had therefore determined to wait until the sentiments excited by the crime, of which his father, the benefactor of his people, fell a victim, had time to subside.

On April 11th the imperial regalia were carried in state from St. Petersburg to Moscow. The preparations in the Kremlin and cathedral and in the city of Moscow occupied several months. The festival was planned on a scale of unusual splendor and magnificence, but the most elaborate part of the preparations was the unwonted and ominous police precautions. Every nook and crevice was searched for explosives, the underground cavities and passages were explored, and every spot of earth sounded. Every person had a spy to watch his coming and going. Each gang of workmen was guarded by an armed sentry. It was forbidden to use the windows and balconies in the streets through which the Emperor would pass, to view the procession. The owners and occupants were required to give guarantees that they would not let them out for the purpose, or admit any person into their houses.

The sum appropriated from the imperial treasury for the festivities was six millions and a half of rubles. The Moscow authorities also voted large sums for the purpose. Besides the gorgeous ceremonies of the coronation and the courtly entertainments, popular pageants were prepared and arrangements made for feasting a million people on the Khodynsky plain. The collection of booths and barracks and of theatres in which free exhibitions were given, erected there, resembled a city. Electric lights, arc and incandescent, were placed on the public buildings of Moscow, and so disposed as to bring out their architectural outlines in a grand illumination. More than 12,000 men from regiments whose loyalty was unquestioned were in the city, and 40,000 were encamped in the vicinity.

The Czar and Czarina left St. Petersburg on the 20th of May. Their formal entry into Moscow took place on the 22d. It was not until the middle of the month that the date of the coronation, May 27th, was officially announced. Every country was represented by some royal personage or dignitary of state: England by the Duke and Duchess of Edinburgh; Germany by Prince Albrecht Hohenzollern; Austria by the Archduke Carl Ludwig; Italy by Prince Amadeus; France by M. Waddington; Spain by the Duke of Montpensier; Denmark and Greece by Prince Waldemar and Queen Olga, brother and sister to the Czarina; and Norway and Sweden by Prince Charles. Prince Nicholas of Montenegro and Prince Alexander of Bulgaria were present in person. The Khan of Khiva came from that distant dependency, while the Ameer of Bokhara sent his son. The Shah of Persia was represented by his brother.

The official entry was a striking spectacle, from the great variety of races and costumes seen in the procession, a picture of the ethnic conglomeration which constitutes the empire of the White Czar. The Emperor, mounted on a white charger, was clothed in the sheepskin caftan and other features of the old Muscovite garb which he has revived in the uniform of his army. Ceremonious adorations at the various shrines of the Holy City characterized this pageant. The next day the imperial standard, which is renewed every successive reign, was consecrated. Then the Czar and Czarina retired to the Neskotchenaya summer palace, to pass the three days before the coronation in fasting and prayer. The approaching solemnity was proclaimed by heralds to the people. On the 26th devotional exercises were gone through in the Church of the Redeemer.

The ceremony of the coronation was performed on Sunday, the 27th of May, in the

Church of the Assumption, which could only accommodate the court and the state guests. The coronation, attended by long and complicated observances, was performed by the Czar himself, who received the crown from the Metropolitan of Novgorod, placed it on his head, and was anointed with holy oil by the bishop. After crowning the Czarina, the Czar entered the sanctuary and partook of the sacrament, in token of entering upon his functions as the head of the Russian Orthodox Church. The couple then displayed themselves in robes and crowns before the people. A mystical incident, which was prepared to work upon the superstition of the people, was the appearance of a white dove hovering over the Czar at the moment of the coronation.

The festivities which followed the coronation lasted a week. The spectacles provided for the people embraced the national drama, military pantomimes, fairy extravaganzas, and harlequinades, performed in four great open-air theatres, besides circus-feats and displays in an enormous hippodrome, and a great variety of minor shows. The mujiks assembled from many miles around. On the day of the popular *fête* there were nearly a million persons on the grounds. Baskets of meat-pies, cakes, and sweetmeats were distributed, and beer was served out without stint. About 400,000 people partook of the lavish feast. The two hundredth anniversary of the formation of the Preobrajensky Guard by Peter the Great was made the occasion of a grand feast, presided over by the Emperor, at which the two oldest regiments of the Russian army which composed the Guard, deputations from all the other regiments, and the select society of Moscow and the visiting guests were regaled in the village of Preobrajensk.

Although the glories of the coronation festival were designed to outshine if possible the display and munificence of former occasions of the kind, the essential character of the great national feast was lacking. The citizens of the loyal city and the faithful Muscovite peasantry were not wanting in devotion, but their enthusiasm was chilled by the precautions which were taken to prevent them from approaching the Czar. Wherever the imperial *cortège* passed a wide space was cleared by the military. The mujiks were forbidden to toss their caps in the air, lest they should contain bombs. Every one felt the restraint of the police regulations, which spread a gloom over the whole occasion. There was not the slightest attempt at riot or disturbance in Moscow. It was intended to have the return of the Czar to St. Petersburg celebrated by an illumination and popular festivities, but the plan was abandoned and all demonstrations interdicted. A report of the death of the German Emperor was fabricated, to excuse the omission of the projected state entry. A demonstration of disloyal sentiment occurred on the evening of the coronation, when an immense mob of workmen rushed through the Nevsky Prospect and the principal streets. The disturbances were renewed the following day, when the police forbade illuminations and out-of-door festivities on the return of the Czar. The royal couple arrived secretly and returned to their seclusion in the Peterhof palace.

Foreign Policy.—The Russian Government was constrained by the firmness and strength of the European league, formed by Prince Bismarck to preserve the *status quo* and uphold the decisions of the Berlin Congress, to abandon any design it had of reopening the Eastern question. The prospect of a Russo-French alliance faded from the range of probabilities. In the Balkan lands the influence of the Austro-German alliance, at least among the governing circles, was supreme. The Muscovite war party in Russia, which stood nearest to Alexander III at the time of his accession, showed signs of activity and influence before the coronation, but after M. de Giers had tested the consistency of the peace league the chances of an aggressive policy disappeared. The journey of Minister de Giers to the European capitals was in itself an indication that the Czar refused to be ruled by his Panslavistic advisers, and desired to cultivate peaceful relations with the Central European powers. M. de Giers arrived in Vienna in the latter part of January, and also conferred with the German Chancellor at Varzin. An imperial message to M. de Giers after the coronation was designed to allay the distrust of European governments. "The great glory and power," he wrote, "which, thanks to Providence, have been acquired by Russia, the extent of her empire, and her numerous population, leave no room for any idea whatever of further conquests. My solicitude is exclusively devoted to the peaceable development of the country and its prosperity, to the preservation of its friendly relations with the powers on the basis of existing treaties, and to the maintenance of the dignity of the empire." In another circular the Czar expressed appreciation of the representation of foreign powers at the coronation as "fresh pledges of concord which agree with his own pacific intentions." The Panslavist party did not cease their efforts in the Balkan lands, but they met with no popular response. The question of the union of Eastern Roumelia with Bulgaria was agitated. Later in the year the Bulgarians themselves evinced impatience at the interference of Russia in their affairs, and administered a severe rebuff. Panslavistic agitations are awkward for the Russian Government, for domestic reasons, since the confirmation of the autocratic principle, because the Russian people in asking for political freedom are apt to cast up to the Czar and his Government the constitutions to which they have helped the Servians and the Bulgarians. The visits of King Carol of Roumania, King Milan of Servia, Prince Alexander of Bulgaria, as well as King George of Greece and King Alfonso of Spain, to Berlin

and Vienna were a counter-check to the Panslavistic agitations and warlike preparations in Russia. The only advantage in the Orient gained by Russia during the year was the recognition of her sovereignty over the Kilia branch of the Danube at the London Conference, which point was gained through the support afforded by the English Government.

Asiatic Expansion.—Checked on the European side, the Russians showed the more activity in Asia. The new commercial route across the Hyrcanian steppe from the Caspian to Kungrad, is still more important as a military route. The preoccupation of England with Egypt offered the opportunity for the annexation of the oasis of Merv, an act which was only delayed because the late British Government was prepared to make it a *casus belli*. The way was made smooth by the Merv Turkomans themselves, who were prompted to send a deputation to Gen. Tchernaieff, begging that a Russian governor be appointed over them, as the only way to put an end to constant quarrels between factions among the tribes.

Internal Politics.—The coronation was looked forward to by the upholders of the autocratic principle as a token of the resurgent power and glory of the czardom—a signal for a triumphant outburst of loyalty, temporarily eclipsed by revolutionary delusions. Not less disappointed than they were the party, composed of the bulk of the educated class, who long for the beginning of constitutional life in Russia. The most ominous and disturbing sign in the Nihilistic developments is the malicious satisfaction with which the majority of the middle and upper classes regard the acts of the terrorists. It was confidently expected that the Emperor would signalize the formal inauguration of his reign by proclaiming the liberties which his father had made up his mind to grant. Even in Moscow, the stronghold of autocracy, the Czar was greeted with an expression of the universal desire in the address of the mayor, Prof. Tchicherin, who boldly called upon him to admit the people to participation in the work of government. A manifesto was issued granting amnesty to criminals of various classes, but not to Nihilist convicts. Polish exiles who had not seen their homes for twenty years were given permission to return under police surveillance. Taxes which people were unable to pay were remitted. But in the manifesto there was no inkling or promise of a charter of political liberties. The peasantry, who have been encouraged to expect special favor and protection, were also grievously disappointed when the Czar, in answer to a deputation, declared that there would be no further derangement of the vested rights of property for the benefit of the peasant. The fate of the Kacanoff Commission, appointed to consider the question of local self-government and other important reforms, indicates the reluctance of Alexander III to inaugurate political reforms. Their report was met by a reactionary project from Count Tolstoy, and then the whole subject was suffered to drop. One of the few progressive measures of the year was the introduction in the northwest provinces of the new judicial system, which has been in operation in the rest of Russia for twenty years.

The Russian press was shackled in 1883 as it never had been before. The papers were allowed to publish neither information nor comments on important events, several influential papers were suppressed, and others ceased their issues. Political thought and party life were thus crushed out to a great extent, and society was pervaded by dread, gloom, and uncertainty. The Liberal party, which is far more numerous than the Conservative, is divided into two sections. The more numerous one demands simply political freedom and the introduction of representative institutions. The other group, called Friends of the People, think that education and the improvement of the economical condition of the people should go before. The Conservatives are also divided. The bulk of the party follow Katkoff as their journalistic exponent, and have for political leaders Count Tolstoy, the Ministers of Instruction and Justice, and Procurator Pobodonostzeff, and thus control the policy of the Government. The other group is the Slavophile party, led by Aksakoff, which has a strong democratic tendency, and wishes to return to the conditions existing before Peter the Great, and extirpate European "civilization" and liberalism.

Agrarian Measures.—Many concluded from words uttered by the Czar at Moscow that the noble class would be taken into special favor, a policy advocated by the Minister of the Interior. Yet the predilection of the Czar for the peasant class was evinced by fresh enactments for their benefit. The fidelity of the peasantry is the surest prop of the autocracy, while the revolutionary and opposition parties are recruited exclusively from the nobility and other educated classes. The redemption payments which have weighed down the liberated peasants since the abolition of serfage were reduced. The poll-tax was partially removed. Another measure intended for the improvement of their circumstances was the creation of a state land-bank.

Commercial Policy.—Schemes of ambition or improvement are a necessity to the enthusiastic and visionary Russian mind. Since the extension of Russian influence and power to the southwest was effectually resisted by the German powers, attention was directed to expansion in Asia, to which the present English Government opposes no decided objections. The extension of Russian manufactures is a correlative of Asiatic conquest. The Government was the more inclined to favor the idea of encouraging industry and commerce, because the promises held out to the peasantry of im-

proving their condition were doomed to disappointment. The merchants and manufacturers were called upon to contribute heavily to the hopeless attempt to lift up the agricultural class to a satisfactory economical condition. To take the place of the remitted arrears of taxes and the abolished poll-tax, an impost of 3 per cent. on the net income of all commercial concerns was proposed, whereas hitherto the only special tax resting upon them was the annual fee for their guild papers, or trading license. This proposition, coming at the time of a commercial crisis, caused partly by the depreciation of the paper ruble, prompted the mercantile class to demand that a separate Ministry of Commerce and Manufactures be created, to look after their interests, instead of trusting them to the Minister of Finance, whose chief concern is to fill the coffers of the state. They had a candidate ready in Gen. Ignatieff, who, when Minister of the Interior, set on foot the movement for the encouragement of the national industries. Under his protection members of the Panslavist party started an association for the advancement of national labor and industry, with local councils all over the country, sending delegates to a general council, which assembled in the capital. After his retirement from office, Count Ignatieff was elected president of this industrial association. A fever of commercial enterprise has prevailed for a year or two past. The merchants and manufacturers of Moscow have insisted on the recognition of the destiny of Russia as a manufacturing country. A great industrial exhibition was held at Moscow in 1882, followed by a series of exhibitions in many other places. While American and Indian competition is likely to deprive Russia of her importance as the granary of Europe, the young industries of Moscow and Central Russia are capable of indefinite expansion, because with the Volga and Caspian route they possess the key to the trade of all Central Asia. The first stimulus to industrial production on a large scale was given when English manufactures began to be imported into Persia through India. Moscow, where the capital and the intelligence existed, became the manufacturing center. The Russians have traded with the Asiatics for centuries, and consequently best understand how to suit their requirements, besides possessing the readiest means of access and political control and preponderance. For these reasons a renewal of Russian activity in Asia suggests the development of the manufacturing interests. The new German tariff, and more recently the prohibition of the export of Russian raw spirits through Germany to Spain, which Prince Bismarck inserted in the new Hispano-German commercial treaty, impelled the industrialists to call for fresh protective and retaliatory measures. But the Russian tariff is already so highly protective that the Government could find hardly any article on which the duty could be increased, to suit the various clamoring interests, without hindering other industries by enhancing the cost of materials or implements. A duty on coal was no sooner imposed, than it was found to act in this way, and was again removed. While attention was directed to the East as the proper field for Russian trade, the notion of ousting the Austrians from the Bulgarian market was entertained, although Austrian trade there is more than twelve times greater than that of Russia. A lower tariff for Russian products entering Bulgaria, and other privileges were obtained. A line of steamers was started by Prince Gagarine to ply between the Black Sea and Bulgarian ports on the Danube. Political motives and military concomitants are frequently connected with Russian commercial schemes. This steamship company, which is subsidized by the Government, has permission to take its officers and physicians from the imperial navy. A volunteer fleet of cruisers has lately been established, which in time of peace are to carry on trade between the Black Sea and the ports of the Orient.

The way in which the Russian Government can best further the commerce between Central Russia and Asia is by improving the means of communication. The withdrawal in 1883 of the right of free transit across the Caucasus, will have the effect of excluding some foreign goods from Persia, but it was scarcely needed, since Russian products command the market. The extent and importance of the Russian trade are little known. The transactions at the annual fair of Nijni-Novgorod have declined since the development of Russian manufacturing industry. While the average number of annual visitors since 1869 was 250,000, the number in 1882 was only 180,000. The fair of 1883 was particularly unsatisfactory. Gen. Tchernaieff, the Governor-General of Turkistan, has established a new trade route to Turkistan, Bokhara, and Khiva. Two principal caravan routes have heretofore been used to communicate with Russian Central Asia and the khanates. The eastern route, 2,700 miles long, starts at Ekaterinenburg, traverses southwest Siberia to Omsk, follows in a southeast direction the right bank of the Irtish to Semipalatinsk, and thence by a long bend reaches Chemkent, lying directly southwest. The western and more frequented route, though more difficult and dangerous from robbers, goes from Orenburg through Orsk to Kazalinsk on the Syr Daria, and follows the right bank to Chemkent and Tashkend. The journey requires about 112 days. The new route is only 300 miles long, and will take not more than 33 days. It starts at the Mertvi, or Dead Bay, on the Caspian, opposite Astrakhan, and crosses the Ust Yurt Steppe to Kungrad, at the delta of the Oxus, whence the journey is made by water to Charjui or Ilchig. The route across the plateau has the advantage over the Orenburg route of a firm soil,

which permits of wagon transport, without the tramway projected by Gen. Tchernaieff, and that of abundant and succulent grass at certain seasons, but the disadvantage of precarious wells of brackish water. This does not apply to the last third of the road, which passes through a part of the oasis of Khiva. One of the causes which led to a search for a direct route to Central Asia, was the improvement of steam navigation on the Caspian Sea. Formerly navigation was retarded by the want of coal, but an excellent fuel has been found in the refuse of petroleum-refineries.

Religious Legislation.—A relaxation of the decrees against the Raskolniks, or sectaries, contrasts with the general reactionary tendency of the Emperor's policy. He has need of the good-will of this great class, powerful in wealth, intelligence, and numbers, which has flourished under persecution. While numbers of Old Believers have embraced the Orthodox creed, the partly or wholly rationalistic sects have gained thousands of recruits annually among the peasantry. The present number of dissenters is estimated at 12,000,000. The official estimates divide them into 3,000,000 with priests, 8,000,000 without priests, about 1,000,000 Spiritual Christians, and 65,000 enthusiasts. The latter category, comprising the Chlistli, or flagellants, the Skopze, or eunuch sect, etc., is on the decline. The "heretics" possess a rich literature. Education among them is almost universal. The tendency of the priestless sects is toward rationalism and indifferentism in religious belief. This makes them cling the more earnestly to the principle of intellectual liberty and the ideas of the ancient Slav democracy, corrupted through Tartar rule and aristocratic institutions imported from Europe. They constitute, therefore, a power in the state which can not be won over to the support of the existing order, and which has many points of contact with Nihilism. The Mennonites, who refuse to perform military service, are forced to emigrate. The Khan of Bokhara has declined to allow them to settle in his territory. Small colonies went to China and other parts of Asia during the year.

Of a progressive nature also were measures taken to conciliate the Poles, especially the arrangement of a *modus vivendi* with the Vatican. The terms of a convention were settled with the Curia in the early part of 1888. The subject was first broached in 1880 by M. d'Oubril, then embassador at Vienna, who discussed it with Cardinal Jacobini, Papal nuncio to that court. The negotiations were continued by M. Mossoloff, Director of Foreign Creeds, but were interrupted in consequence of the murder of the Czar. The Russian Government expressed a desire to terminate the period of ecclesiastical pressure by a practical arrangement, without going into questions of principle. The details were arranged by M. Mossoloff and M. de Giers at the Vatican. The exiled Bishops of Wilna and Jitomir and the Archbishop of Warsaw were pardoned. The vacant sees were filled, the seminaries placed under the control of the bishops, sermons and pastorals were exempted from censorship, and the rights of the bishops enlarged in other respects. In return, the Vatican promised to bind the clergy to a loyal demeanor, to secure the state interests of Russia, and to have Russian taught in the seminaries. The language of the pulpit is to be that of the majority of the parishioners. A Polish Catholic, Gen. Gurko, was appointed Governor-General of Poland.

Russification of the German Provinces.—The confirmation of the autocratic system, and the adoption of a stationary internal policy, contributed not less than the anti-Russian political combinations of Prince Bismarck to the eclipse of Russian influence and the Panslavistic idea among the South Slavs, and left the Balkan Peninsula open to the intellectual activity and commercial facilities of the Germans. Within the confines of the Russian Empire under Alexander III, Muscovite ideas have every chance of prevailing in the conflict between Teutonic and Slav civilization. German placemen, of the class which since Peter the Great has battened in the public service, and with arrogant pride developed an oppressive and alien method of government, have made way for Russians who understand the people and can talk to them in their own language. The Russification of the Baltic provinces presents practical problems which are difficult of solution. The autonomous institutions of this German corner of Russia work well, and disclosed few abuses to the commission appointed to examine into them. The agrarian question is a still more delicate one. Any measure to relieve the Esth and Lett peasantry from their economical subjugation would be a weapon in the hands of the Socialists. The agitation in Livonia, Esthonia, and Courland continued through 1888, and in some places degenerated into agrarian murder and arson. One symptom of the movement is the wholesale conversion of the peasantry from the Lutheran to the Greek Catholic confession. The course of the Government authorities would be simpler if the disaffected people were Muscovites, but they hesitate to aid and countenance the national Ruthenian movement, which was formerly rigorously suppressed with the assistance of the German barons. Here, as in Austria, the conflict of nationalities takes the form of a battle of languages. The Little Russian language is a pure Slavic idiom, while the Muscovite dialect, which has been imposed by the power of the autocracy upon the Western Slavs, is the product resulting from the imposition in former centuries of the Russian language upon the Finno-Tartar population of Great Russia.*

* Nestor, who wrote in the eleventh century, distinguishes the Turanian race, which inhabited Muscovy, from the Aryan people of Kiev. Olearius, a German traveler, who wrote in the latter part of the seventeenth century, says the inhabitants of the eastern part of the land of Moscow spoke Finnish. The Abbé Chappe found the same radical difference

In 1859 permission for the literary use of Little Russian was granted. A luxuriant growth of literature in the ancient tongue and an enthusiastic revival of philological studies resulted. This movement was hemmed, but not checked, by the recall of the permission in 1876. The idiom, banished from the church, the school, the theatre, and the book-shop, and persecuted in the land of its origin, took refuge in the eastern districts of the Austrian province of Galicia. Among the Ruthenians of Galicia the Russians set agencies to work to encourage the national sentiment which they endeavor to crush out in Esthonia and Livonia.

Educational Measures.—The reform of university education is under consideration. The indications are that the changes will be reactionary. It is proposed to reintroduce bodily punishment in the gymnasia. An order of Delyanoff, issued in 1882, allows students to be transferred from one university to another at the discretion of the curators. The ecclesiastical censorship over scientific books has ceased, and the jurisdiction of the censors is confined to political works. The universities gave the authorities much trouble in the spring. First occurred an outbreak of the students at Nova Alexandria, on the Polish border, resulting in the closing of the college and the expulsion of 143 students. Subsequently the students at Kazan revolted against the university authorities, and then those at St. Petersburg.

Nihilism.—Numerous arrests, made under the administration of Count Tolstoy, reduced the number of daring and desperate conspirators. The coronation passed off without any terroristic act, though various plots were frustrated by the police, to whose vigilance it was due that, for a long time after, no political crime occurred. Yet the issue of proclamations from the secret press showed the vitality of the revolutionary party, and by many evidences, kept from the knowledge of the public as far as possible, the Government perceived that it was not less numerous or dangerous than before. Arrests were made in great numbers, particularly among the students. The old prefecture of police was re-established. The Holy League, formed to combat the Nihilists by means of their own system of secret organization, was not approved of by the Government, and accomplished no results of importance. In April a great Nihilist trial took place at St. Petersburg. Bogdanovich, who was accused of laying the mine under the Little Garden street, made a noteworthy declaration of the aims and principles of the Party of Terror, which were not to overthrow all authority, but to establish a just system of administration. The seventeen prisoners belonged to all ranks of society, from the peasantry to the nobility. All but one were convicted, and six of them sentenced to death, including Bogdanovich, Telahoff, who was implicated in the attempt to blow up the imperial train at Alexandroffsky in 1879, and Gracheffsky, who was charged with being one of the assassins of Alexander II. Soon after the trial a number of officers of the army were said to have been arrested. At the very end of the year, Lieut.-Col. Sudeikin, of the St. Petersburg gendarmerie, the most efficient officer engaged in the detective work against the Nihilists, was murdered by subordinates, who enticed him into an empty building, on the pretext of arresting a female Nihilist. The perpetrator was Degajeff, *alias* Jablonsky, formerly a captain on the artillery staff, who was known to have been a member of the revolutionary party, and was employed by Sudeikin as a spy.

Anti-Semitic Disturbances.—Spasmodic outbreaks of anti-Jewish feeling occurred during the year, and serious disturbances in Ekaterinoslav, the district of Southern Russia which is most notorious for such excesses. In May occurred anti-Semitic disturbances in Rostov, where one hundred and thirty houses were wrecked by rioters, fifteen of whom were shot down by the police. In July the Jewish burial-ground at Ostrog was violated and the attendants murdered. In August grievous excesses were committed in Ekaterinoslav. They began on the 2d with the destruction of the shop of a Jewish merchant who struck a peasant-woman. The riot then took the usual course. The mob broke into one house after another, and with knives and hammers demolished everything. The Jews who did not escape in time to the woods were beaten and maltreated. Some of them died of their injuries. The military arrived immediately and fired into the mob, killing fourteen and wounding twenty-eight, but without stopping the work of demolition. This disturbance in Ekaterinoslav was characterized by a new and portentous feature. The Jews were not the only objects of the rage of the mob, but the houses of Christians were attacked as well, indicating the prevalence of communistic sentiments, and the dangerous discontent caused by the economic distress which exists in many parts of Russia, particularly in the south. In November a riot, in which Jewish dram-shops and houses, and houses of Christians as well, were plundered, broke out in Krivorog, a town in the government of Ekaterinoslav.

A Jewish commission, presided over by Count Pahlen, formerly Minister of Justice, proposed in their report methods for abating the evil practices to which the Jews are ad-

between the Slavs and the Muscovites in the middle of the eighteenth century. The process of Slavification is still going on in the eastern governments, where Finnish, with only an admixture of Slavic words, is spoken; while, in the western and northern parts of the same region, the lower classes still speak a compound language. The number of Slavified Tartars in European Russia is estimated at 40,000,000, against only 15,000,000 pure Russo-Slavs. After the time of Peter the Great, the Government began to conceal and deny the Asiatic origin of the Great Russians. A protest of Catharine the Great provoked the remark of Mirabeau that "the Russians are Europeans only by virtue of a declaratory definition of their sovereign."

dicted. Chief of these are smuggling at the German and Austrian frontiers, and the abuses connected with the liquor-traffic. They are accused of seducing the peasantry to drink, and getting away their earnings. A third complaint is the avoidance of military service. The greater portion of Jewish conscripts are detailed as musicians or attached to the departments. Extremely few distinguish themselves by bravery, or rise to the grade of officer.

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SALVADOR, a republic of Central America. Area, 18,720 square kilometres; population, 954,785. The President is Dr. R. Zaldivar y Lazo (elected in May, 1876). The Cabinet is composed of the following ministers: Foreign Affairs and Justice, Señor S. Gallegos; War and Finance, P. Melendez; Public Instruction, D. Lopez. The President of the Senate was J. Moreno, and of the Chamber of Deputies, J. Avila. Capital, San Salvador.

Finance.—The revenue in 1881 was $3,952,000; the outlay, $3,827,000.

In the budget for 1882 the revenue and expenditure were estimated as follow:

INCOME.

From customs	$1,847,000
Spirit and powder monopolies	988,000
Stamp-tax	73,000
Post-Office and telegraphs	82,000
Sundry items of revenue	1,012,000
Total	$3,952,000

OUTLAY.

Civil-list of President	$15,000
Assembly	26,000
Foreign Department	40,000
Department of Justice	92,000
" the Interior	55,000
" Public Instruction	152,000
" Finance and War	112,000
Army	900,000
Public Works	265,000
Public debt	352,000
Subsidy to Pacific Mail steamers	65,000
Post-Office and telegraphs	88,000
Customs	35,000
Tax collection (monopolies)	323,000
Other expenditure	1,307,000
Total	$3,827,000

The national debt amounted, on Oct. 1, 1881, to $566,505; the floating debt, $1,668,124.

Railroads.—The first line of railway, between Acajutla and Sonsonate, went into operation in July, 1882; the line between Sonsonate and Santa Ana (La Libertad, the port) is being built. Engineers are surveying the line for the railroad from La Libertad to San Salvador, which is about to be constructed by English capitalists under a concession from the state.

Telegraphs.—There were in operation, in 1881, about 2,100 miles of wire, the service being carried on in 48 offices. Number of telegrams sent in the same year, 138,869; 83,894 were private dispatches and 54,975 Government.

Commerce.—There entered the ports of Salvador, in 1881, altogether 334 vessels, of an aggregate tonnage of 413,988, 245 being steamers, including eleven men-of-war.

The imports in 1881 were valued at $2,705,410, the exports at $4,902,436.

The most important articles of export in 1881 were coffee, 1,940,000 pounds, worth $2,909,200; indigo, 1,470,000 pounds, worth $1,470,200; bar silver, $105,440; sugar, 3,493,000 pounds, worth $104,800; specie, $55,634; Peruvian balsam, hides and skins, etc.

By decree of Sept. 21, 1883, the Government of Salvador, desirous of stimulating foreign trade, decided that, dating from October 1st in the same year, the import duty on all goods should be reduced 10 per cent., and that, dating from Jan. 1, 1884, a further duty reduction of 10 per cent. should be made.

SALVATION ARMY, a religious band, claiming to be converted men and women, who are organized somewhat in military fashion; their purpose being to make all men listen to the claims which God has upon their time and service, and compel them to yield him his due. The Army was originated in London, England, in the year 1865, by the Rev. William Booth, its present general-in-chief. He was brought up in the Church of England, converted among the Methodists, and afterward became a traveling preacher among them, and labored as such till 1861, when he gave himself up, with his wife (who is the author of several works), to evangelistic work. They were eminently successful, and thousands were added to the churches. In 1865 Mr. Booth was led to the east of London, where the ignorance and vice were appalling, and here he gave himself to the work of making these people hear and know of God and salvation. The Salvation Army is the result. He set out with the purpose of getting his apostles of salvation out of the gin-mills. How far he has succeeded, this wonderful Army is his witness.

The present name was adopted when, after eleven years of deliverance to captive sinners, it was found that it was virtually an army of salvation, since which epoch it has made its most rapid advances. It has made greater progress than any other religious movement since the Lutheran reformation. It numbers 500 corps in Great Britain and Ireland, and reaches millions of people by its out-door marches and meetings. It has divisions and divisional headquarters in Sweden, Switzerland, France, Germany, Africa, India, Australia, New Zealand, Tasmania, and the United States. Sixteen weekly papers, each known as "The War-Cry," are published in these different countries. Their aggregate circulation is 26,000,000 copies a year.

The movement reached America in 1880. Commissioner Roilton and seven Hallelujah lasses were the first contingent. After a time Roilton was recalled, and Major Thomas E.

Moore was sent out to take command. After severe fighting and persistent efforts, it mustered five corps and eleven officers in 1882. Since then its prospects have brightened continually. At present there are 75 corps and 160 officers. Of these, only eleven are English; the rest are the product of the soil. It is operating in more than thirty towns and cities of the Dominion of Canada, and in the chief cities of fourteen States of the Union. This does not include California, which is a separate command. The American headquarters are at the Lyceum, Washington Street, Brooklyn, N. Y. Major Moore is on the wing most of his time, in Canada and the States, visiting the various corps, dedicating barracks, presenting colors, and directing affairs generally, besides writing for the "War-Cry."

It appears from their official organ that the Army have been subjected to more arrests and imprisonments in this country than in all other countries together. The charge on the police record is "disorderly conduct," for marching in the streets. Yet they are defiant in prosecutions, claiming that "God has a right to the streets." The first necessity with them is, to attract attention; it is necessary to awaken the people, in order to rescue them. This is the only explanation necessary as to the processions, carrying of colors, and beating of drums.

The uniform consists of military tunic and trousers of navy blue, sparingly trimmed with red braid, and marked with the letter S on the collar. Their head-gear consists of a military helmet with flaming frontal piece bearing the words: "Blood and fire! Prepare to meet thy God! S. A." The women wear a neat skirt and bodice of the same color and trimming, with a "poke" bonnet encircled with a red band bearing in gilt the inscription, "The Salvation Army."

They believe they are acting in accordance with the mind of the Spirit in utilizing the services of female speakers; that as the devil has freely used this instrumentality for the demoralizing of men, they are at liberty to employ the same agency for the recovery of men. As a matter of fact, they find the female agency the most effective, especially among rough men. Sin and Satan, death and hell, are as real to them as "the enemy" is to the men who fight with carnal weapons; so also are the possibilities of victory. Their uniform makes them realize this everywhere they go; it attracts attention, and serves as a safeguard against worldly conformity.

The usual military titles—general, colonel, major, captain, etc.—are conferred on the officers of various grades. When asked the reason of this, they reply: "Because we find them ready made to our hand, they harmonize with our organization, and readily convey to the minds of the common people the rank of the officer; and because they are considered to be less objectionable to the mass of the people than those used to describe church officers." The Salvation Army has a regular system of government, and from one central head its authority reaches through the varied grades of office, controlling and directing all. It is at once the most aggressive and the most successful missionary organization in the world.

The Army has no political character or aims. It teaches obedience to the laws, and respect for their administrators. Its great business is to bring men to God, that is, to all that is good and virtuous. It is an uncompromising enemy of tobacco and strong drink, and every form of ruinous self-indulgence.

As its object is to conquer sin, and not to capture the righteous, it openly avows its objection to receiving church-members into its ranks. It prefers the uncared-for; hence it seeks to operate more especially upon the great mass of indifference found among Catholics and Protestants alike. It seeks after souls abandoned by others, those whom the isolated forces of religion have not reached, adapting its invitations and means to meet their tastes, and attract them to its meetings.

"The Salvation Army," says a writer in the "Barry Gazette," "strives to be temperance society, church, Sisters of Charity, civilizer, and Christianizer, all in one. By its 'knee-drill,' 'sharp-shooting,' 'sword-exercise,' and 'heavy-artillery meetings'—as they are pleased to call them—it has conquered the enemy on all sides, and brought many valiant soldiers into the service of the Great Captain. The meetings have been crowded for months, and more than rival the run of the best plays. Many who at first go out of curiosity, are afterward drawn by the power of the Spirit; and many who go to scoff, remain to pray. Already a great improvement is noticeable in the lower classes, in increased industry, better apparel, and more orderly conduct."

Their methods, though contrary to the general usage of religious denominations, are simple, plain, direct, and unique; yet none the less, they believe, in accordance with Scriptural teachings. Their posters, placards, and other advertisements are studiously made as far as possible from anything like the usual religious announcements. While they may offend refined taste and the religious prejudices of cultured people, they attract the very class they want to reach—gamblers, drunkards, harlots, thieves, and neglecters of God generally. They study the law of adaptation. A few headings from "The War-Cry" will serve to show the class of people they address: "The Boy and the Broom-stick," "The Last Black Eye," "Salvation in the Sawdust," "A Wakefield Jail-Bird to the Front."

They frequently occupy old and dilapidated buildings, and sometimes the best that a town affords; but such places as the old jam-factory in a populous neighborhood suit them better. A place of this description was taken in a city, and the public were invited to "come and get real jam, and see Jesus." They could taste be-

fore buying, and buy without money and without price. They name their buildings Salvation barracks, store, factory, or warehouse, as the case may be—anything to avoid the prejudice that is supposed to exist in the minds of the common people against churches and religion generally. By adding the head "Salvation," they describe the nature and object of the meetings held there.

They parade the streets with banner and music. Their songs of praise, instruments of music, and distinct uniform, attract the crowd wherever they go. By this means many are induced to enter their "barracks" who for years have never entered a church, and seldom, if ever, listen to the word of God. They recognize the philosophy of making the people feel at home. Formality and stiffness must be got rid of, and the services rendered homely, varied, and bright. They do not adhere to any particular routine or form of service; but, as a general rule, the leader announces a hymn, and reads and expounds it verse by verse in the order of singing. The singing is of the heartiest description. The tunes are mostly old Methodist tunes; but even worldly airs do not come amiss to them. Many of their songs have lively and inspiriting choruses and refrains, which easily impress themselves on the popular mind. The chorus, with the Salvation Army, is the principal part of the singing. It is repeated over and over again, sometimes with striking variations. The soldiers are massed upon the platform facing the audience, and beat time on their drums and tambourines. While singing the last stanza, they drop on their knees. Their prayers are invariably short, and are characterized by an apparent free-and-easiness which seems to border on undue familiarity. But they never for a moment lay aside their consciousness that they are in the immediate presence of God. After about three prayers, interspersed with snatches of song, they rise from their knees. Then follows a Bible-lesson, and sometimes a brief comment. Their creed is extremely simple; it is just that which is deemed essential to salvation by all orthodox churches. They say to their hearers: "You are serving either God or the devil. It is infinitely blessed to serve God, and eternally disastrous to serve Satan." And on this statement they base their appeal for an instant decision to renounce the evil and choose the good; at the same time they declare that Christ is present, ready to save every one who feels he is a sinner and desires to be saved.

Their public speaking is singularly destitute of the controversial element. There is no theological discussion, no expounding of doctrines. They never argue or dispute. They attack no system of religion. There is nothing that can possibly stir up resentment in any person of another faith. At the close of a meeting, sinners are urged to come forward for prayer.

They live and move in the revival spirit all the year round. As a preaching medium they use the experiences of their converts, on the principle that the class they seek to rescue can best be influenced by members of the same class. They teach their converts that they are responsible for the salvation of others, and exhort them to put forth continuous and daily efforts to this end.

Contributions are received at the services of the various stations, and the converts are taught that they must contribute to the support of the work. Local treasurers have charge of the finances, and present balance-sheets to their corps, and all accounts are inspected by the staff. The officers have no salary guaranteed, but are instructed to trust in God for their support. Every station makes a weekly return of its receipts and expenditures, attendances and converts, so that the material and spiritual state of the force may always be seen at a glance. After the expenses of the corps are met—such as rent of hall and gas, officers' support, etc.—the remainder, if any, is sent to the "war-chest," at headquarters, to become the "sinews of war" for prosecuting the work in other fields. General Booth receives nothing out of the Army funds, being sustained from an independent source.

Major Moore says: "In this our America, after three years of severe toil and suffering, the work has taken a deep hold, notwithstanding many unexpected difficulties. It is confidently expected to extend its efforts to every State of the Union, and never retreat till the judgment-day. It is only a question of time requisite to train officers for the work, and every city in the United States will have its corps of the Salvation Army, and the question of how to reach the masses will have been settled by reaching them."

SANTO DOMINGO, a republic occupying the eastern portion of the West Indian island of that name, the western portion being Hayti, which see.

Area and Population.—The area of the republic of Santo Domingo is 17,827 square miles. The population was estimated in 1880 at 300,000, but it has since then been considerably on the increase, a strong current of immigration having set in from neighboring islands, and many settlers and planters arrived from the United States. The republic is divided into five provinces and four maritime districts. The capital city is Santo Domingo.

Government.—The President is Gen. Ulysses Heureaux, and the Vice-President Gen. Casimiro N. Moya. The Cabinet in 1888 was composed of the following ministers: Interior, W. Figueredo; Foreign Affairs, S. Imbert; Justice, Public Works, and Instruction, T. Mejia; Finance and Commerce, E. G. Marchana; and War and Navy, A. Woz y Gil. The United States Consul at the city of Santo Domingo is Mr. H. C. C. Astwood, and the Dominican Consul-General, for the Union, at New York, is Mr. J. Delmonte; the Consul at New York, Mr. H. Billini; and at Boston, Mr. E. M. Fowle.

Finance.—The budget for 1882 estimated the income at $1,500,000, and the outlay at the same figure.

In 1869 the Government had contracted a 6 per cent. loan in London to the amount of £757,000, at 70 per cent., but it has been officially proved that it never received more than £32,000; hence in 1872 it repudiated the loan, and has since stopped paying interest on it. The home indebtedness is $2,000,000, and to pay it off a sinking fund has been created by means of 15 per cent. set aside annually from import duties collected.

The Government had decreed in 1883 the levying of an import duty of 12 per cent. on Mexican silver coin, and prohibited the introduction of old and mutilated coin; but as this law created a scarcity leading to great inconvenience, it had to be abrogated. It is now proposed to coin $4,000,000 silver, of the same standard and weight as the legal silver circulation in the United States. A National Bank has been founded in the city of Santo Domingo, by authority of Congress, under the patronage of the Government.

Commercial Facilities.—Early in May, Congress passed a bill creating San Lorenzo a free port. This port is to be divided into two zones, the one free, for "*in transitu*" goods, and the other for importation. This measure has in view the increase of trade that is expected to result from the completion of the Panama Canal, the bay of Samaná being conceded to be the finest in the West Indies, and very convenient as a port of call and repair on the route to Panama from Europe.

The Government has granted a subsidy of $500,000 to a French company, which engages to improve the navigation of Oyama river.

A port rapidly rising in importance, where great activity is being displayed in the way of public and private improvements, is San Pedro de Macoris, where the Clyde American steamers call and take cargo, principally sugar. Railroads are to connect the sugar region with San Pedro, and a concession to that effect has been granted to Don Juan Serrallés.

The construction of the Samaná Railroad was pushed with vigor in 1883.

The Government made arrangements in 1883, with Baron Almeda and an English telegraph company, not only to have a cable laid connecting with the one between the West Indies and the rest of the world now in operation, but land-lines all over the republic.

Education.—There were in 1883, in the city of Santo Domingo, two colleges; twenty-one schools of various grades; a professional institute where civil and commercial rights, political economy, medicine, mathematics, etc., are taught; a school for teaching natural history, chemistry, botany, etc., and a Municipal Institute, where the higher branches of education can be obtained.

Exhibitions.—A National Exhibition is to open in the city of Santo Domingo in August, 1884.

The Government was informed in 1883 that Baron Almeda and M. Collin de Parade had carried out the project of permanently exhibiting in the French capital specimens of the agricultural and mineral products.

Sugar.—Sugar belonging to estates that suffered from the hurricane of September 6th will for six months pay only half the export duty. Sugar estates in the districts of San Cristobal, Monte Grande, near San Pedro de Macoris, and the city of Santo Domingo, were in a most flourishing condition in 1883, and the sugar industry was evidently on the eve of a remarkable development. American capital has also been extensively invested in this industry. The machinery is imported from the United States. Portable railways for the conveyance of cane and sugar were being generally adopted by the estates.

Coasting Steamers.—Messrs. Mayans & Co., bankers in the city of Santo Domingo, have secured the privilege of establishing a line of steamers for service between the ports of Barahona, Tortuguero de Azua, San Pedro de Macoris, Samaná, Puerto Plata, and Monte-Cristi.

Commerce.—Importations into the ports of Santo Domingo and Puerto Plata in 1879 amounted, jointly, to $1,179,349, and the exports to $978,066. Since then the commercial movement has expanded very much, the increase of traffic being notably through the ports of Samaná, Azua, and Monte-Cristi. The principal export articles are sugar, tobacco, coffee, honey, wax, mahogany, other cabinet, and especially dye-woods. Guano exportation had very nearly ceased altogether, but had also revived.

In 1881 the exports and imports were:

PORTS.	Imports.	Exports.
Through Santo Domingo.	$765.271	$687,261
Through Puerto Plata...	752,851	636,762
Through Azua, Monte-Cristi, and Samaná....	243,194	317,052
Total.....	$1,761,316	$1,691,075

The American trade with St. Domingo has been as follows:

YEARS.	Imports from into the United States.	Exports of domestic merchandise from the United States.
1880.....	$660,493	$939,501
1881.....	924,781	757,590
1882.....	908,060	904,149
1883.....	1,417,519	1,179,200

The chief articles imported into the United States in 1883 were sugar, 27,281,049 pounds; and molasses, 448,587 gallons.

The number of vessels that entered the port of Santo Domingo in 1881 was 169; aggregate tonnage, 79,114; while 159 left, measuring jointly 76,058 tons. The arrivals at Puerto Plata in 1882 were 136, with 62,472 tons of cargo, of which 40 were steamers, with 60,689 tons; 87 sailing-vessels, with 1,783 tons.

SERVIA, a kingdom in Eastern Europe. Complete independence was recognized in the Treaty of Berlin. The Constitution of 1869 reaffirmed succession in the family of Obrenovich, declared the responsibility of the ministers to the Assembly, and vested the legislative power in the Skuptschina, jointly with the sovereign. The Senate was transformed into a Council of State, charged with the elaboration of laws. The Skuptschina, which is elected for three years and holds sessions annually, consists of 174 members, of whom 129 are elected by the people, every tax-payer having a vote, and 45 are appointed by the King. A Great National Assembly, composed of four times the number of the ordinary, is elected to decide on constitutional questions. Servia was proclaimed a kingdom, March 6, 1882.

The King, Milan I, is the fourth of the dynasty. He was born in August, 1854, and succeeded his cousin, Prince Michail, assassinated June 10, 1868. The Cabinet is composed of the following members: President of the Council and Minister of the Interior, N. Cristich; Minister of Foreign Affairs, M. Bogwichevich; Minister of War, Col. Petrovich; Minister of Justice, G. Pantelich; Minister of Finance, A. Spasich; Minister of Public Works, C. Protich; Minister of Instruction and Ecclesiastical Affairs, G. Pantelich, *ad interim*.

Area and Population.—The area of Servia is 20,850 square miles, including 4,250 square miles added by the Treaty of Berlin, from which the Turkish population has nearly all emigrated. The population returned by the census of 1878 was 1,669,337, composed of 850,275 males and 819,062 females; estimated population at the beginning of 1883, 1,810,606. The bulk of the population are of Serbic race and of the Orthodox Greek religion. There were in 1878 13,367 Mohammedans, 3,492 Israelites, 4,178 Roman Catholics, and 27,289 gypsies. Belgrade, the capital, contained at the beginning of 1883 an estimated population of 36,177.

Commerce.—The chief trade is with Austria. The largest article of export is live hogs. The principal exports in 1881 were of the following quantities: Hogs, 325,240; cattle, 27,752; sheep and goats, 64,935; grain, 26,523,369 okes (the Turkish oke = 2·83 pounds); dried prunes, 10,563,201 okes; wine, 2,460,298 okes.

Finances.—The revenue is derived mainly from direct imposts. The budget for 1882–'83 makes out the receipts as 34,930,000 dinars, or francs, and the expenditures as 34,469,919 dinars. The public debt is over 100,000,000 francs, incurred for the construction of the Belgrade and Vranja Railroad, to repay the war requisitions, and lesser sums to compensate the disinherited Turkish proprietors, and repay a war debt to Russia.

The Army.—The introduction of the German military system causes a considerable increase in the national expenditures. Before the war with Turkey the military forces consisted of a militia. The standing army musters 9,710 men. The reorganization is calculated to create an available war force of 165,000 men.

Political Crisis.—King Milan, having entered on a career of despotic violence by dissolving the Skuptschina in 1882 and refusing to recognize the constitutional majority, did not shrink from the conflict which he invited, but in 1883 openly established a military despotism in the place of parliamentary government. The King and the Pirotchanatz ministry were not restrained from pursuing their pro-Austrian policy by the popular disapprobation. The decision of the *Conférence à quatre* settled the route of the railway to connect Western Europe with Constantinople, which passes through Belgrade and Nish (see AUSTRIA-HUNGARY). The discord between Russia and Servia was increased by the enactment of a new law regulating the relations between church and the state, particularly with reference to the election of a metropolitan. The appointment of the primate had previously been left to the church, and thus controlled by the Emperor of Russia. The arbitrary suspension of the metropolitan by King Milan in 1882 exasperated the people and drove the clergy into the camp of the opposition. The Russians were therefore the more inclined to contest the ecclesiastical question as a means of preserving their political influence. The Synod elected the Archimandrite Theodosius Mraovich in April, after the provisions of the new law. The new metropolitan was consecrated a few days later. The Servian chaplain in Moscow, having complied with the request of the Servian Government to pray for the new archbishop, was ignominiously expelled from Russia during the coronation, by order of the metropolitan of Moscow. In August, King Milan visited Vienna, where he was cordially received, and subsequently attended the autumn manœuvres of the German army as the guest of Emperor William. These friendly conferences were intended as a counter-check to Russian political activity in Montenegro, Roumania, Bulgaria, and Eastern Roumelia. The marriage of the Servian pretender, Peter Karageorgevich, to the daughter of the Prince of Montenegro, indicated the complete withdrawal of Russian confidence in King Milan and the prosecution of Servian schemes without the Obrenovichs.

The Servians are thoroughly imbued with the idea of popular sovereignty. They have always been conscious of their power, and in former struggles with their rulers have come out victorious. Recently doctrines of European radicalism and Russian socialism have been widely disseminated among the peasantry by Belgrade professors and other Servians educated at Paris and in Germany.

The political parties in Servia were the Conservative, the Liberal, and the Radical. The party at the helm of government, the Conservative, may be described as the party of the King and of the Austrians, and described itself as the Progressive party, because it pursued

the policy of developing the resources of the country. The King, in breaking with Russia and accepting Austrian domination, adopted a course which was inevitable and advantageous to the country. The Pirotchanatz ministry was appointed after the dismissal of Ristich to consummate the accommodation with the Hapsburg Government. By excluding Servian hogs and other products, through the operation of a prohibitory tariff, Austria could cut the Servian farmers off from the only natural outlet for their produce. A favorable commercial treaty was arranged. The Servian concessions favored Austrian manufactures at the expense of the English trade. Servia came to terms on the railroad question.

The popular jealousy at the humiliating subserviency of their Government to a foreign power was intense. The railroad convention, however advantageous from a commercial point of view, leveled all defensive barriers, and laid the country open to the ingress of an Austrian army at any moment. The Liberal party, composed of the followers of Ristich, was as weak in numbers as the supporters of the King. The Radical party was composed of the liberal elements of the old Ristich party, reorganized by Pashich, Tedorovich, and other professors and journalists, whose teachings indued it with a more advanced and democratic character. The refusal of the King to be controlled by the result of the last election greatly increased its strength. The following of the pretender Karageorgevich was not large, and its influence was restricted by the Draconic laws against anti-dynastic agitation. The declared foreign policy of the Radical party was to cultivate friendly relations with both Austria and Russia, without entering into any alliance.

The King, who was absent during the autumn elections on his visit to Germany, trusted to his ministers to secure the forty-and-odd votes necessary for a majority. The Radicals, with the dozen votes or so of the Ristich party, had a clear majority as the result of the election of September, which the invalidation of the returns in certain districts failed to upset. The Assembly was opened on the 28th of September. The victorious party attempted to elect a president by acclamation, but after a stormy scene were obliged to go through the formality of a vote. King Milan, determined to be master, chose a desperate course. As Pirotchanatz and his colleages, who had resigned, were unwilling to be the instruments of his will, he appointed a new Progressist ministry under the presidency of Nikola Cristich. The Skuptschina was at once dissolved. The King sounded the officers of the army and made sure of their fidelity. The disarmament of the militia was proceeding in pursuance of a previous enactment. The people in certain districts of the mountains refused to deliver up their arms. This complication rendered the situation extremely critical. The Radical leaders deemed the moment favorable for a revolutionary attempt, and prepared a constitution, embodying democratic principles under monarchical forms. Pashich and the whole eighteen members of the Radical committee were arrested in the dead of night and thrown into prison. Liberty of the press and of assembly was suspended. Martial law was proclaimed in various districts. In Zaizar, the principal seat of the revolt, troops were speedily collected. Wherever there was a sign of resistance, soldiers were quartered on the people. The people of the eastern and southeastern districts of the country, who are largely of Roumanian extraction, were soon in open rebellion. At Cerna Reka there were 3,000 insurgents in arms against the Government. The revolt did not become general, because the Servian people had no strong confidence in the Radical leaders, and were not ripe for a political change. The insurrection was put down by the military after a few encounters. The Radical leaders were court-martialed and condemned. Some of the least influential were executed, others were pardoned. The revolted districts were not easily restored to order, although the military power was employed with relentless severity. Hundreds of arrests were made, and a large number were executed. The new law of conscription was passed, with the disarmament bill, in the spring session of the Skuptschina. The various arbitrary acts of Milan, culminating in the sending home of the Skuptschina, inspired them with a thorough distrust and dislike of the King, though it was not easy to alienate them from the popular Obrenovich dynasty.

The increased taxes and the oppressive military conscription appealed powerfully to those who were susceptible only to immediate practical grievances, and not conversant with questions of high politics or capable of patriotic enthusiasm. The disarmament of the militia at this time provoked resistance because the Servians thought it deprived them of the means of defending their national liberties, which was the reason why King Milan proceeded so expeditiously to have it carried into effect.

SHERIDAN, Philip Henry, Lieutenant-General of the United States Army, born in Somerset, Perry co., Ohio, March 6, 1831. A few years at the village school, followed by service in the village store, furnished his education and training until a fortunate application to the Congressman of his district made him, in 1848, a cadet at West Point. He should have been graduated in 1852; but a year's suspension, the result of a quarrel with a fellow-student, transferred him to the class of 1853, in which he ranked 34th among its 52 members. He was appointed a brevet second-lieutenant of infantry, July 1, 1853; in the following year was assigned to the 1st Infantry, in Texas; and on Nov. 22, 1854, received his commission as second-lieutenant of the 4th Infantry. With the latter regiment he served during the next six years, in Washington Territory and Oregon. In one of Gen. Scott's orders we find this mention of him:

"April 28, 1856, bvt. Lt.-Col. E. J. Steptoe, 9th Infantry, commanding Cos. A, E, F, and I, same regiment, and detachments of Co. E, 1st Dragoons, and Co. L, 3d Artillery, in all 200 men, at the Cascades, W. T., repulsed the Indians in their attack of that place. The troops landed under fire, routing and dispersing the enemy at every point. . . . Second-Lieutenant Philip H. Sheridan, 4th Infantry, is especially mentioned for his gallantry."

The outbreak of the civil war made promotion rapid, both through the resignation of Southern officers and the creation of new regiments; and Sheridan, who thus secured a first-lieutenancy in the Fourth Infantry on March 1, 1861, received a captaincy in the Thirteenth, on the 14th of May. Still, save for six weeks' service as president of a board for auditing claims at St. Louis, that memorable year brought him little employment and no laurels. The day before Christmas he was appointed quartermaster on the staff of Gen. Curtis, commanding the Army of Southwest Missouri. On being relieved from Curtis's staff, he reported to Gen. Halleck, whom he accompanied in his advance upon Corinth, and was by him recommended to the Governor of Michigan, who had applied for some regular officer to take charge of the 2d Michigan Cavalry. Commissioned May 25, 1862, as colonel of this regiment, then near Corinth, Sheridan at once took part with it in Elliot's raid against the railroad, which was destroyed at Booneville. During June he commanded the 2d Cavalry Brigade in several skirmishes, and on the 1st of July fought a brilliant battle at Booneville. His appointment as brigadier-general of volunteers was dated from the action at Booneville.

During the autumn of 1862 Sheridan was transferred to Kentucky, and there received command of the Eleventh Division of the Army of the Ohio, under Buell. Moving out from Louisville with Buell against Bragg, he took part, October 8th, in the hard-fought battle at Perryville, where he manœuvred his division with conspicuous skill and effect. Rosecrans succeeded Buell in command of what became known as the Army of the Cumberland, and at the prolonged and bloody battle of Murfreesboro, Sheridan, for several hours in the first day's fighting, held the key-point, displaying superb tactical skill and the greatest gallantry. All his brigade commanders were killed in this battle, and on Rosecrans's recommendation he was made major-general of volunteers, to date from Dec. 31, 1862, the opening of that deadly struggle among the cedar-brakes of Stone river.

In March, 1863, Sheridan engaged in the pursuit of Van Dorn to Columbia and Franklin, making captures near Eagleville. Advancing with Rosecrans's army from Murfreesboro to Tullahoma, and across the Cumberland mountains and the Tennessee, Sheridan, on September 19th and 20th, distinguished himself again in the battle with Bragg at Chickamauga. Rosecrans fell back to Chattanooga, and the command of his besieged army was transferred to Thomas. Grant, arriving with re-enforcements from Vicksburg, resolved to dislodge Bragg, who was posted on Lookout mountain and Missionary Ridge. Hooker having carried Lookout mountain, Thomas assaulted the Ridge November 25th, with overwhelming success. Sheridan's division was the first to cross the crest, and pressed the enemy's rear-guard until long after dark, capturing wagons and artillery. This was the culminating point of Sheridan's career at the West, although he continued to serve through the winter in East Tennessee, and on January 17th was engaged in a skirmish at Dandridge.

In the spring of 1864, Grant, now lieutenant-general, established his headquarters in Virginia. He told Halleck he must have an energetic commander for the cavalry there, and Halleck, mindful of the result of his former recommendation, brought Sheridan forward again. "The very man!" answered Grant; and accordingly Sheridan, on April 4th, took command of the cavalry corps of the Army of the Potomac. When the May campaign of this army opened, he pioneered its path to the Wilderness, and thence to Spottsylvania, skirmishing on the 5th and 6th, and fighting a battle at Todd's Tavern on the 7th. Two days later he made a cavalry expedition within the enemy's lines to the Chickahominy and the James, dashing upon the outworks of Richmond itself, where he took a hundred prisoners, and thence moving to Haxall's Landing, from which point, after resting three days, he returned to the army on the 24th, having destroyed many miles of railroad-track, besides trains and a great quantity of rations, and recapturing 375 Union soldiers on their way to Libby Prison. This expedition included repulses of the enemy at Beaver Dam, May 10th, and at Meadow Bridge on the 12th, and the defeat, on the intervening day, of J. E. B. Stuart's cavalry at Yellow Tavern, where Stuart was killed. Sheridan was next engaged at Hanovertown and Totopotomoy creek, May 27th; Hawes's Store, May 28th; Matadequin creek, May 30th; Cold Harbor, May 31st and June 1st. On June 6th he was sent with two divisions to cut the Virginia Central Railroad near Charlottesville, and to escort across to Grant's army the Shenandoah Valley forces of Gen. Hunter. The enemy's cavalry, under Hampton, disputed his progress at Trevillian Station, June 11th, but were driven back after a severe battle. The next day, however, Sheridan, satisfied that neither Charlottesville nor Gordonsville could be reached, and hearing nothing of Hunter, withdrew his forces, having broken the railroad at Trevillian. On his return the enemy's cavalry attacked him at Tunstall, on the 21st, and he skirmished again on the 24th at St. Mary's Church. Toward the end of July Sheridan moved north of the James, to aid Gen. Hancock's operations at

Deep Bottom, and on the 28th was engaged at Darbytown.

Meanwhile, Early maintained a threatening position in the Valley. Grant, accordingly, on the 7th of August, put Gen. Sheridan in command of the Middle Military Division, with an army comprising two divisions of his own cavalry, the Sixth Corps, under Wright, a part of the Nineteenth, under Emory, and the Army of West Virginia, under Crook. Six weeks passed without result, as Early had been reenforced, and kept Sheridan on the defensive near Harper's Ferry. But on September 19th, when Early's forces had been diminished, Sheridan crossed the Opequon, and, in a hard battle, completely defeated him, sending him, as Sheridan telegraphed, "whirling through Winchester." The next day, President Lincoln, at Grant's recommendation, appointed Sheridan a brigadier-general in the regular army. Pursuing Early up the Valley turnpike, on the 20th, Sheridan found him strongly posted on Fisher's Hill, just beyond Strasburg. Secretly moving Crook's command through the woods, he turned the enemy's left on the 22d, and drove him from his stronghold, capturing 16 guns. The losses of Sheridan and those of Early were almost exactly equal in these two battles combined, being about 5,400 each; but Sheridan had also captured 21 guns and many small-arms. Sheridan continued the pursuit up the Valley, and took post at Harrisonburg, while Early withdrew to Brown's Gap. Believing it impracticable or hazardous to proceed either to Lynchburg or Charlottesville, Sheridan, with Grant's approval, withdrew down the Valley, burning its mills, barns, and crops on the way. Early followed with his cavalry under Rosser and Lomax to Tom's Brook, near Fisher's Hill, where Sheridan's horsemen, under Torbert, turned and defeated them, October 9th, capturing 11 cavalry-guns, and indeed almost "everything on wheels," and driving them back twenty miles. Sheridan then passed through Strasburg and posted his troops on the farther bank of Cedar creek, while he himself, on the 16th, went to Washington in response to a request from Mr. Stanton, for consultation. Before sunrise of October 19th, Early, who had been re-enforced, aided by a fog, surprised the left of the Union army, held by Crook's command, and uncovered the position also of the Nineteenth Corps, capturing 24 guns and about 1,400 prisoners. Gen. Wright succeeded in retaining his grasp on the turnpike by moving the Sixth Corps to its western side and the cavalry to its eastern, but the whole army, in the process, had been driven back beyond Middletown. Sheridan, who was at Winchester, on his return from Washington, hearing the noise of battle, dashed up the pike with an escort of twenty men, rallying the fugitives on the way, and, after a ride of a dozen miles, reached the army, which received him with great enthusiasm. Having fully prepared his forces, during a lull of several hours, he ordered an advance, and swept the enemy from the field in one of the most overwhelming routs of the war. All of the lost Union guns were retaken, and 24 Confederate guns and many wagons were captured. Congress passed a vote of thanks to him and his troops for the "brilliant series of victories in the Valley," and especially the one at Cedar creek. Sheridan was appointed by the President a major-general in the regular army, "for the personal gallantry, military skill, and just confidence in the courage and patriotism of your troops, displayed by you on the 19th day of October."

On Feb. 27, 1865, Gen. Sheridan moved his cavalry, 10,000 strong, up the Valley to Waynesboro, where, March 2d, it overthrew the remnant of Early's force, capturing about 1,500 men. He then destroyed the locks of the James river canal, and broke the railroads toward Gordonsville and Lynchburg. Making his way toward Grant's army, he arrived at White House, March 19th.

With Sheridan's cavalry at his disposal, Grant now began the final campaign. Crossing the Peninsula to James river, March 24th, Sheridan passed to the left of the Union army, and on the 29th occupied Dinwiddie Court-House. Two days later he was attacked by a heavy force of Lee's infantry under Pickett and Johnson; but the following day, April 1st, being re-enforced by the Fifth Corps, under Warren, Sheridan, by a beautiful tactical movement, entrapped and completely routed Pickett and Johnson at Five Forks, capturing thousands of prisoners. Petersburg being assaulted the next morning, Lee abandoned that city and Richmond, and took to flight. The pursuit was prompt, with Sheridan far in the van, constantly harassing the enemy, and finally, aided by the Sixth and Second Corps, capturing nearly all of Ewell's command, on the 6th, at Sailor's creek. Two days later, Sheridan again fought the enemy at Appomattox Station, and on the 9th occurred Lee's surrender.

Later in April Sheridan conducted an expedition into North Carolina, and on June 3d took command of the Military Division of the Southwest, at New Orleans. Relieved by President Johnson, Aug. 26, 1867, during the reconstruction troubles in Louisiana (see "Annual Cyclopædia" for 1867, pp. 451 to 462), he was assigned, September 12th, to the Department of the Missouri. On the 4th of March, 1869, he was promoted to the rank of lieutenant-general, and on the 16th assumed command of the Division of the Missouri, with headquarters at Chicago. During the Franco-German War of 1870–'71 he visited Europe, and was present as a spectator at several famous engagements. On Nov. 1, 1883, by direction of President Arthur, he assumed command of the Army of the United States, with headquarters at Washington, in place of Gen. Sherman, who was relieved by request, preparatory to retirement in the spring of 1884.

SIEMENS, Charles William, an English electrician and engineer, died in London, Nov. 20, 1883, of rupture of the heart, the result of a fall. He was born at Lenthe, in Hanover, April 4, 1823, and was educated in the gymnasium at Lübeck, the Polytechnic of Magdeburg, and Göttingen University. In 1842 he entered as an apprentice the engine-works of Count Stolberg, and the following year he went to England to introduce the electroplating process invented by his elder brother, Werner Siemens, and improved by himself. Applying to the firm of Elkington, he found them engaged in the same process, but was able to furnish valuable suggestions as to practical details. In 1844 he returned to England to patent a differential governor for steam-engines, invented by the two brothers. From that time he remained in England, becoming naturalized in 1859.

In conjunction with his brother he brought out the anastatic printing process in 1844, and perfected the chronometric governor in 1847. He turned his attention to the study of the dynamical theory of heat. The recovery of the heat of the exhausted steam of an engine was made the subject of experiments. In 1851 he introduced the Siemens water-meter. Between 1856 and 1861, with the assistance of his brother Frederick, he worked out the regenerative gas-furnace, and in 1867 he applied the invention in the manufacture of open-hearth steel. He experimented on the manufacture of iron and steel direct from the ore, establishing for this purpose the experimental works at Birmingham, from which samples of steel were sent to the Universal Exposition at Paris. Dr. C. W. Siemens interested himself in telegraphy as early as 1848, and in 1858, in connection with Werner Siemens and Halske, of Berlin, and with his brother Carl, he established the works which manufactured the Direct United States, the Indo Telegraph, and other cables, including the one to be laid for the Bennett-Mackay company from Ireland to the United States in 1884.

Dr. Siemens gave much attention to pure science, and was a prominent participant in the proceedings of the Royal Institution, the British Association, the Institution of Civil Engineers, the Iron and Steel Institute, and other learned bodies devoted to theoretical and practical science, and was also a frequent contributor to the scientific press.

SIMS, James Marion, an American surgeon, born in Lancaster district, S. C., Jan. 25, 1813; died in the city of New York, Nov. 13, 1883. He was graduated at South Carolina College in 1832, studied medicine, and entered upon practice in Charleston. Thence he went to Philadelphia, where he took a full course at the Jefferson Medical College, and in 1836 he settled in Montgomery, Ala., where he turned his attention more especially to surgery. The idea of curing vesico-vaginal fistula, at that date considered incurable, originated with Dr. Sims about 1845, and for the purpose of demonstrating his theories he established a private hospital for women in Montgomery, and supported it for four years at his own expense. In the course of his experiments he invented many new instruments, one of which was a speculum that still bears his name. The peculiarity of Dr. Sims's treatment of the distressing ailment above named was the substitution of silver wire for silken sutures. In after-years he extended the use of metallic sutures to every department of surgery where they are employed.

In 1849 Dr. Sims was prostrated with a serious illness; in 1853 he began to improve, and after his removal to New York his health grew steadily better. During this period he pondered over the idea of establishing a woman's hospital, and in May, 1854, soon after reaching New York, he delivered an address upon that subject. Much discussion ensued, and unexpected opposition followed. A public meeting was held for the purpose of giving definite shape to his idea; and Drs. Delafield, Francis, Mott, Stevens, Green, and Sims, together with Peter Cooper and the Hon. E. C. Benedict, were appointed a committee for organizing a hospital for the treatment of diseases of women. From this movement originated the Woman's Hospital Association. A building on Madison Avenue was leased for three years, and a temporary hospital was opened in May, 1855, with Dr. Sims as surgeon-in-chief. A charter was procured in 1857, and in 1858 the Legislature of New York appropriated $50,000 for the new hospital. Soon after, the city authorities gave the site on which the hospital now stands. Dr. Sims devoted himself with enthusiastic energy to this great work, and was largely aided and encouraged by professional brethren, as well as by ladies and gentlemen of New York. He went abroad to study the subject, and by special invitation operated in several of the great hospitals in Paris, Brussels, London, and Dublin, and received numerous decorations.

Dr. Sims took his family to Europe in 1862, and a large part of his time during the next six years was spent there. In 1870, while he was on a visit to Paris, the Franco-Prussian War broke out, and he took charge of the Anglo-American Ambulance Corps as surgeon-in-chief. He built up a large practice, more particularly in France and Belgium.

Dr. Sims was an honorary member of many medical and scientific societies both in Europe and America. In 1875 he was elected President of the American Medical Association. His more important publications are, "Trismus Nascentium"; "Silver Sutures in Surgery" (1858); "Clinical Notes on Uterine Surgery" (1866); "History of the Discovery of Anæsthesia"; and "Treatise on Ovariotomy." He was also a frequent contributor to medical and surgical journals.

SMITH, James Lawrence, an American chemist and mineralogist, born near Charleston, S. C.,

Dec. 16, 1818; died in Louisville, Ky., Oct. 12, 1883. He received a classical education at Charleston College, and then studied at the University of Virginia. Afterward, having chosen medicine for a profession, he received his degree from the Medical College of South Carolina. This course he supplemented by three years' study in Europe. In 1841 his first memoir, "On the Means of detecting Arsenic in the Human Body," marked him as an investigator of the first rank. He began the practice of medicine in Charleston, and at the same time delivered an important series of lectures on toxicology. Soon after, he was appointed by the State of South Carolina to assay the bullion then coming into commerce from the gold-fields of Georgia and North and South Carolina. His attention was also directed at the time to the marl-beds in the vicinity of Charleston. His investigations on the value of these deposits for agricultural purposes were among the earliest scientific contributions on this subject. During these years he prepared a report on "The Meteorological Conditions, Character of Soils, and Cultures, affecting the Growth of Cotton."

In 1846 Mr. Buchanan (afterward President), at the request of the Sultan of Turkey, recommended Dr. Smith as a competent authority to suggest methods for the cultivation of cotton in the Turkish provinces. On reaching the East, he found the scheme somewhat impracticable, and subsequently accepted the appointment of mining engineer from the Sultan. In this capacity his services were of the greatest value, and the Turkish Government still derives an important portion of its revenue from his discoveries of ores and coal. Chief among these was that of emery, whose subsequent development in this country is largely due to the papers published by Dr. Smith. "The Thermal Waters of Asia Minor" was likewise a subject to which he devoted much attention while in the Turkish employ.

In 1851 he returned to the United States. He devised the inverted microscope, whose construction he had superintended while in Paris. His appointment to the chair of Chemistry in the University of Virginia dates from this period. While occupying this post, with the aid of his assistant, George J. Brush (now of the Sheffield Scientific School), he prepared an extensive memoir on the "Re-examination of American Minerals." It included examinations, with analyses, of thirty-seven species, "forming," says Prof. B. Silliman, "at that time, the most important contributions yet made by any American chemist." In 1854–'55 he accepted the professorship of Chemistry in the Medical Department of the University of Louisville, and settled there. Subsequently he became President of the Louisville Gas-Works, which he personally superintended.

In 1867 he was one of the commissioners to the Paris Exposition, and furnished for the Government reports an able contribution on "The Progress and Condition of Several Departments of Industrial Chemistry." Again, at Vienna, in 1873, he represented the United States, and his report on "Chemicals and Chemical Industries" supplements his excellent work at the earlier exhibition. At the Centennial held at Philadelphia in 1876, he was one of the judges in the department relating to chemical arts, and contributed a valuable paper on petroleum to the official reports.

Of late years, his attention was devoted very largely to the chemistry of meteorites, and his collection of these celestial bodies is probably not surpassed in this country. It has recently become the property of Harvard College. He was also occupied with the separation of some of the rarer earths, and in 1878 he announced his discovery of the element mosandrium.

Prof. Smith was a member of many of the learned societies in this country and abroad. He was one of the original members of the National Academy of Sciences, and in 1872 was the presiding officer of the American Association for the Advancement of Science. The French Academy of Sciences elected him a corresponding member in the department of Mineralogy. His published papers were very numerous; the more important of these were collected and published by him, under the title of "Mineralogy and Chemistry, Original Researches" (Louisville, Ky., 1873).

SOUND-SIGNALS. The sound-signals generally used to guide mariners, especially during fogs, are, with certain modifications—sirens, trumpets, steam-whistles, bell-boats, bell-buoys, whistling-buoys, bells struck by machinery, cannons fired by powder or gun-cotton, rockets, and gongs.

Gongs.—Gongs are somewhat used on light-ships, especially in British waters. They are intended for use at close quarters. Leonce Reynaud, of the French lighthouse service, has given their mean effective range as barely 550 yards. They are of most use in harbors, short channels, and like places where a long range would be unnecessary. They have been used but little in United States waters. The term "effective range" is used here to signify the actual distance at which, under the most unfavorable circumstances, a signal can generally be heard on board of a paddle-wheel steamer in a heavy sea-way.

Guns.—The use of guns is not so great as it once was. Instances are on record in which they were quite serviceable. Admiral Sir A. Milne said he had often gone into Halifax harbor, in a dense fog like a wall, by the sound of the Sambro fog-gun. But in the experiments made by the "Trinity House" off Dungeness in January, 1864, in calm weather, the report of an eighteen-pounder, with three pounds of powder, was faint at four miles. Still, in the Trinity House experiments of 1865, made in light weather with a light gun, the report was

clearly heard seven miles away. Dr. Gladstone records great variability in the range of gun-sound in the Holyhead experiments. Prof. Henry says that a twenty-four-pounder was used at Point Boneta, San Francisco Bay, Cal., in 1856–'57, and that, by the help of it alone, vessels came into the harbor during the fog at night as well as in the day, which otherwise could not have entered. The gun was fired every half-hour, night and day, during foggy and thick weather in the first year, except for a time when powder was lacking. During the second year there were 1,582 discharges. It was finally superseded by a bell-boat, which in its turn was after a time replaced by a siren. A gun was also used at West Quoddy Head, Maine. It was a carronade, five feet long, with a bore of 5¼ inches, charged with four pounds of powder. The gun was fired on foggy days when the Boston steamer was approaching the lighthouse from St. Johns, and the firing was begun when the steamer's whistle was heard, often when she was six miles away, and was kept up as fast as the gun could be loaded, until the steamer answered with its whistle. The report of the gun was heard from two to six miles. "This signal was abandoned," Prof. Henry says, "because of the danger attending its use, the length of intervals between successive explosions, and the brief duration of the sound, which renders it difficult to determine its direction with accuracy." In 1872 there were three fog-guns on the English coast, iron eighteen-pounders, carrying a three-pound charge of powder, which were fired at intervals of fifteen minutes in two places, and of twenty minutes in the other. The average duration of fog at these stations was said to be about six hours, and, as it not unfrequently lasted twenty hours, each gun required two gunners, who had to undergo severe labor, and the risk of remissness and irregularity was considerable. In 1881 the interval between charges was reduced to ten minutes. The Trinity House, in its experiments at South Foreland, found that the short twenty-four-pound howitzer gave a better sound than the long eighteen-pounder. Tyndall, who had charge of the experiments, sums up as to the use of the guns as fog-signals by saying:

> The duration of the sound is so short that, unless the observer is prepared beforehand, the sound, through lack of attention, rather than through its own powerlessness, is liable to be unheard. Its liability to be quenched by local sound is so great that it is sometimes obliterated by a puff of wind taking possession of the ears at the time of its arrival. Its liability to be quenched by an opposing wind, so as to be practically useless at a very short distance to windward, is very remarkable. . . . Still, notwithstanding these drawbacks, I think the gun is entitled to rank as a first-class signal.

The minute-gun at sea is known the world over as a signal of distress. The English light-ships fire guns to attract the attention of the life-boat crew when shipwrecks take place in sight of the ships, but out of sight of the boats; and guns are used as signals of approaching floods at freshet-times in various countries.

Rockets.—As a signal in rock lighthouses, where it would be impossible to mount large pieces of apparatus, the use of a gun-cotton rocket has been suggested by Sir Richard Collinson, deputy-master of the Trinity House. A charge of gun-cotton is inclosed in the head of a rocket, which is projected to the height of perhaps 1,000 feet, when the cotton is exploded, and the sound shed in all directions. Comparative experiments with the howitzer and rocket showed that the howitzer was beaten by a rocket containing twelve ounces, eight ounces, and even four ounces of gun-cotton. Large charges do not show themselves so superior to small charges as might be expected. Some of the rockets were heard at a distance of twenty-five miles. Tyndall proposes to call it the Collinson rocket, and suggests that it might be used in lighthouses and light-ships as a signal by naval vessels.

Bells.—Bells are in use at every United States light-station, and at many they are run by machinery actuated by clock-work, made by Mr. Stevens, of Boston, who, at the suggestion of the Lighthouse Board, has introduced an escapement arrangement moved by a small weight, while a larger weight operates the machinery which strikes the bell. These bells weigh from 800 to 3,000 pounds. There are about 125 in use on the coasts of the United States. Experiments made by the engineers of the French Lighthouse Establishment, in 1861–'62, showed that the range of bell-sounds can be increased with the rapidity of the bell-strokes, and that the relative distances for 15, 25, and 60 bell-strokes a minute were in the ratio of 1, $1\frac{14}{100}$, and $1\frac{32}{100}$. The French also, with a hemispherical iron reflector backed with Portland cement, increased the bell range in the ratio of 147 to 100 over a horizontal arc of 60°, beyond which its effect gradually diminished. The actual effective range of the bell-sound, whatever the bell-size, is comparatively short, and, like the gong, it is used only where it needs to be heard for short distances. Mr. Cunningham, Secretary of the Scottish Lighthouse Establishment, in a paper on fog-signals, read in February, 1863, says the bell at Howth, weighing 2¼ tons, struck four times a minute by a 60-pound hammer falling ten inches, has been heard only one mile to windward against a light breeze during fog; and that a similar bell at Kingston, struck eight times a minute, had been so heard three miles away as to enable the steamer to make her harbor from that distance. Mr. Beaseley, C. E., in a lecture on coast fog-signals, May 24, 1872, speaks of these bells as unusually large, saying that they and the one at Ballycottin are the largest on their coasts, the only others which compare with them being those at Stark Point and South Stack, which weigh 31¾ cwt. and 41½ cwt. respectively. Mr. Cunningham, speaking of the fog-bells at Bell Rock and

Skerryvore lighthouses, says he doubts if either bell has been the means of saving a single vessel from wreck during fog, and he does not recall an instance of a vessel reporting that she was warned to put about in the fog, or that she ascertained her position in any respect by hearing the sound of the bell in either place. Gen. Duane, U. S. A., says a bell, whether operated by hand or machinery, can not be considered an efficient fog-signal on the sea-coast. In calm weather it can not be heard half the time at a greater distance than one mile, while in rough weather the noise of the surf will drown its sound to seaward altogether. The use of bells is required, by the International Code, on ships of all nations, at regular intervals during fog. But Turkish ships are allowed to substitute the gong or gun, as the use of bells is forbidden to the followers of Mohammed.

Whistling-Buoys.—The whistling-buoy now in use was patented by Mr. J. M. Courtenay, of New York. It consists of an iron, pear-shaped bulb, 12 feet across at its widest part, and floating 12 feet out of water. Inside the bulb is a tube 33 inches across, extending from the top through the bottom to a depth of 32 feet, into water free from wave-motion. The tube is open at its lower end, but projects, air-tight, through the top of the bulb, and is closed with a plate having in it three holes, two for letting the air into the tube, and one between the others for letting the air out to work the ten-inch locomotive whistle with which it is surmounted. These holes are connected with three pipes which lead down to near the water-level, where they pass through a diaphragm which divides the outer cylinder into two parts. The great bulb which buoys up the whole mass rises and falls with the motion of the waves, carrying the tube up and down with it, thus establishing a piston-and-cylinder movement, the water in the tube acting as an immovable piston, while the tube itself acts as a moving cylinder. Thus the air admitted through valves, as the buoy rises on the wave, into that part of the bulb which is above water, is compressed, and, as the buoy falls with the wave, it is further compressed and forced through a 2½-inch pipe which at its apex connects with the whistle. The dimensions of the whistling-buoy have recently been much diminished without detracting materially from the volume of sound it produces. It is now made of four sizes. The smallest in our waters has a bulb six feet in diameter, and a tube ten feet in length, and weighs but 2,000 pounds. The largest and oldest whistling-buoy has a 12-foot bulb, a tube 32 feet long, and weighs 12,000 pounds.

There are now 34 of these whistling-buoys on the coast of the United States, which have cost, with their appurtenances, about $1,200 each. It is a curious fact that, in proportion as they are useful to the mariner, they are obnoxious to the house-dweller within ear-shot of them, and that the Lighthouse Board has to weigh the petitions and remonstrances before setting these buoys off inhabited coasts. They can at times be heard 15 miles, and emit an inexpressibly mournful and saddening sound.

The inspector of the First Lighthouse District, Commander Picking, established a series of observations at all the light-stations in the neighborhood of the buoys, giving the time of hearing it, the direction of the wind, and the state of the sea, from which it appears that in January, 1878, one of these buoys was heard every day but two at one 2¼ miles distant, 14 times at one 7¼ miles distant, and 4 times at one 8¼ miles distant. It is heard by the pilots of the New York and Boston steamers at a distance of one fifth of a mile to 5 miles, and has been frequently heard at a distance of 9 miles, and even, under specially favorable circumstances, 15 miles.

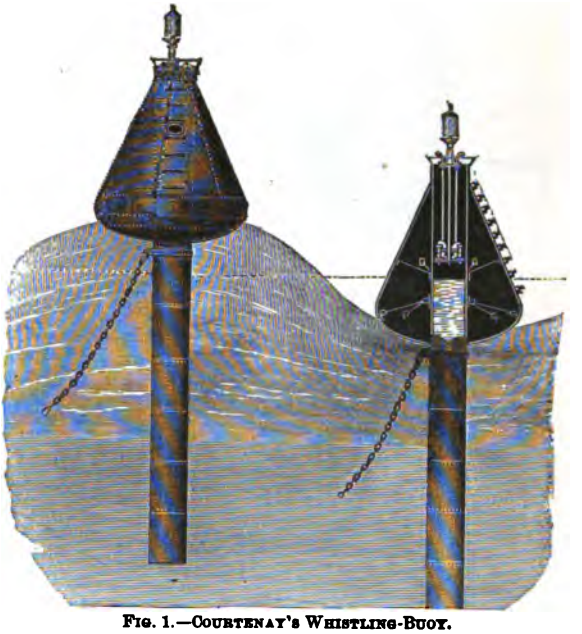


FIG. 1.—COURTENAY'S WHISTLING-BUOY.

The whistling-buoy is also used to some extent in British, French, and German waters, with good results. The latest use to which it has been put in this country has been to place it off the shoals of Cape Hatteras, where a light-ship was wanted but could not live, and where it does almost as well as a light-ship would have done. It is well suited for such broken and turbulent waters, as the rougher the sea the louder its sound.

Bell-Buoys.—The bell-boat, which is at most a clumsy contrivance, liable to be upset in heavy weather, costly to build, hard to handle, and difficult to keep in repair, has been superseded by the Brown bell-buoy, which was invented by the officer of the lighthouse establishment whose name it bears. The bell is mounted on the bottom section of an iron buoy 6 feet 6 inches across, which is decked over and fitted with a framework of 3-inch angle-iron 9 feet high, to which a 300-pound bell is rigidly attached. A radial grooved iron plate is made fast to the frame under the bell

FIG. 2.—BROWN'S BELL-BUOY.

and close to it, on which is laid a free cannon-ball. As the buoy rolls on the sea, this ball rolls on the plate, striking some side of the bell at each motion with such force as to cause it to toll. Like the whistling-buoy, the bell-buoy sounds the loudest when the sea is the roughest, but the bell-buoy is adapted to shoal water, where the whistling-buoy could not ride; and, if there is any motion to the sea, the bell-buoy will make some sound. Hence the whistling-buoy is used in roadsteads and the open sea, while the bell-buoy is preferred in harbors, rivers, and the like, where the sound-range needed is shorter, and smoother water usually obtains. In July, 1883, there were 24 of these bell-buoys in United States waters. They cost, with their fitments and moorings, about $1,000 each.

Locomotive-Whistles.—It appears from the evidence given in 1845, before the select committee raised by the English House of Commons, that the use of the locomotive-whistle as a fog-signal was first suggested by Mr. A. Gordon, C. E., who proposed to use air or steam for sounding it, and to place it in the focus of a reflector, or a group of reflectors, to concentrate its sound into a powerful phonic beam. It was his idea that the sharpness or shrillness of the whistle constituted its chief value. And it is conceded that Mr. C. L. Daboll, under the direction of Prof. Henry, and at the instance of the United States Lighthouse Board, first practically used it as a fog-signal by erecting one for use at Beaver Tail Point, in Narragansett Bay. The sounding of the whistle is well described by Price-Edwards, a noted English lighthouse engineer, "as caused by the vibration of the column of air contained within the bell or dome, the vibration being set up by the impact of a current of steam or air at a high pressure." It is probable that the metal of the bell is likewise set in vibration and gives to the sound its timbre or quality. It is noted that the energy so excited expends its chief force in the immediate vicinity of its source, and may be regarded, therefore, as to some extent wasted. The sound of the whistle, moreover, is diffused equally on all sides. These characteristics to some extent explain the impotency of the sound to penetrate to great distances. Difference in pitch is obtained by altering the distance between the steam orifice and the rim of the drum. When brought close to each other, say within half an inch, the sound produced is very shrill, but it becomes deeper as the space between the rim and the steam or air orifice is increased.

Prof. Henry says the sound of the whistle is distributed horizontally. It is, however, much stronger in the plane containing the lower edge of the bell than on either side of this plane. Thus, if the whistle is standing upright in the ordinary position, its sound is more distinct in a horizontal plane passing through the whistle than above it or below.

The steam fog-whistle is the same instrument ordinarily used on steamboats and locomotives. It is from 6 to 18 inches in diameter, and is operated by steam under a pressure of from 50 to 100 pounds. An engine takes its steam from the same boiler, and by an automatic arrangement shuts off and turns on the steam by opening and closing its valves at determined times. The machinery is simple, the piston-pressure is light, and the engine requires no more skilled attention than does an ordinary station-engine.

"The experiments made by the Trinity House in 1873–'74 seem to show," Price-Edwards says, "that the sound of the most powerful whistle, whether blown by steam or hot air, was generally inferior to the sound yielded by other

instruments," and consequently no steps were taken to extend their use in Great Britain, where several were then in operation. In Canadian waters, however, a better result seems to have been obtained, as the Deputy Minister of Marine and Fisheries, in his annual report for 1872, summarizes the action of the whistles in use there, from which it appears that they have been heard at distances varying with their diameter from 3 to 25 miles.

The result of the experiments made by Prof. Henry and Gen. Duane for the United States Lighthouse Board, reported in 1874, goes to show that the steam-whistle could be heard far enough for practical uses in many positions. Prof. Henry found that he could hear a 6-inch whistle 7¼ miles with a feeble opposing wind. Gen. Duane heard the 10-inch whistle at Cape Elizabeth at his house in Portland, Maine, 9 miles distant, whenever it was in operation. He heard it best during a heavy northeast snow-storm, the wind blowing then directly from him, and toward the source of the sound. Gen. Duane also reported that "there are six fog-signals on the coast of Maine; these have frequently been heard at the distance of 20 miles," . . . which distance he gives as the extreme limit of the 12-inch steam-whistle.

Trumpets.—The Daboll trumpet was invented by Mr. C. L. Daboll, of Connecticut, who was experimenting to meet the announced wants of the United States Lighthouse Board. The largest consists of a huge trumpet 17 feet long, with a throat 8½ inches in diameter, and a flaring mouth 38 inches across. In the trumpet is a resounding cavity and a tongue-like steel reed 10 inches long, 2¾ inches wide, 1 inch thick at its fixed end, and half that at its free end. Air is condensed in a reservoir and driven through the trumpet by hot air or steam machinery at a pressure of from 15 to 20 pounds, and is capable of making a shriek which can be heard at a great distance for a certain number of seconds each minute, by about one quarter of the power expended in the case of the whistle. In all his experiments against and at right angles and at other angles to the wind, the trumpet stood first and the whistle came next in power. In the trial of the relative power of various instruments made by Gen. Duane in 1874, the 12-inch whistle was reported as exceeding the first-class Daboll trumpet. Beaseley reports that the trumpet has done good work at various British stations, making itself heard from five to ten miles. The engineer in charge of the lighthouses of Canada says: "The expense for repairs, and the frequent stoppages to make these repairs during the four years they continued in use, made them [the trumpets] expensive and unreliable. The frequent stoppages during foggy weather made them sources of danger instead of aids to navigation. The sound of these trumpets has deteriorated during the last year or so." Gen. Duane, reporting as to his experiments in 1881, says: "The Daboll trumpet, operated by a caloric-engine, should only be employed in exceptional cases, such as at stations where no water can be procured, and where from the proximity of other signals it may be necessary to vary the nature of the sound." Thus it would seem that the Daboll trumpet is an exceptionally fine instrument, producing a sound of great penetration and of sufficient power for ordinary practical use, but that to be kept going it requires skillful management and constant care.

The Siren.—The siren was adapted from the instrument invented by Cagniard de la Tour, by A. and F. Brown, of the New York City Progress Works, under the guidance of Prof. Henry, at the instance and for the use of the United States Lighthouse Establishment, which also adopted it for use as a fog-signal. The siren of the first class consists of a huge trumpet, somewhat of the size and shape used by Daboll, with a wide mouth and a narrow throat, and is sounded by driving compressed air or steam through a disk placed in its throat. In this disk are twelve radial slits; back of the fixed disk is a revolving plate containing as many similar openings. The plate is rotated 2,400 times each minute, and each revolution causes the escape and interruption of twelve jets of air or steam through the openings in the disk and rotating plate. In this way 28,800 vibrations are given during each minute that the machine is operated; and, as the vibrations are taken up by the trumpet, an intense beam of sound is projected from it. The siren is operated under a pressure of 72 pounds of steam, and can be heard, under favorable circumstances, from twenty to thirty miles. "Its density, quality, pitch, and penetration render it dominant over such other noises after all other signal-sounds have succumbed." It is made of various sizes or classes, the number of slits in its throat-disk diminishing with its size. The dimensions given above are those of the largest. (See engraving on page 448, "Annual Cyclopædia" for 1880.)

The experiments made by Gen. Duane with these three machines show that the siren can be, all other things being equal, heard the farthest, the steam-whistle stands next to the siren, and the trumpet comes next to the whistle. The machine which makes the most noise consumes the most fuel. From the average of the tests it appears that the power of the first-class siren, the 12-inch whistle, and first-class Daboll trumpet are thus expressed: siren 9, whistle 7, trumpet 4; and their relative expenditure of fuel thus: siren 9, whistle 3, trumpet 1.

Sound-signals constitute so large a factor in the safety of the navigator that the scientists attached to the lighthouse establishments of the various countries have given much attention to their production and perfection, notably Tyndall in England and Henry in this country. The success of the United States has been such that other countries have sent commissions here

to study our system. That sent by England in 1872, of which Sir Frederick Arrow was chairman, and Captain Webb, R. N., recorder, reported so favorably on it that since then "22 sirens have been placed at the most salient lighthouses on the British coasts, and 16 on light-ships moored in position where a guiding signal is of the greatest service to passing navigation."

The trumpet, siren, and whistle are capable of such arrangement that the length of blast and interval, and the succession of alternation, are such as to identify the location of each, so that the mariner can determine his position by the sounds.

In this country there were in operation in July, 1883, sixty-six fog-signals operated by steam or hot air, and the number is to be increased in answer to the urgent demands of commerce.

Use of Natural Orifices.—There are, in various parts of the world, several sound-signals made by utilizing natural orifices in cliffs through which the waves drive the air with such force and velocity as to produce the sound required. One of the most noted is that on one of the Farallon islands, forty miles off the harbor of San Francisco, which was constructed by Gen. Hartmann Bache, of the United States Engineers, in 1858–'59, and of which the following is his own description:

> Advantage was taken of the presence of the working party on the island to make the experiment, long since contemplated, of attaching a whistle as a fog-signal to the orifice of a subterranean passage opening out upon the ocean through which the air is violently driven by the beating of the waves. The first attempt failed, the masonry raised upon the rock to which it was attached being blown up by the great violence of the wind-current. A modified plan with a safety-valve attached was then adopted, which it is hoped will prove permanent. . . . The nature of this work called for 1,000 bricks and four barrels of cement.

Prof. Henry says of this:

> On the apex of this hole he erected a chimney which terminated in a tube surmounted by a locomotive-whistle. By this arrangement a loud sound was produced as often as the wave entered the mouth of the indentation. The penetrating power of the sound from this arrangement would not be great if it depended merely on the hydrostatic pressure of the waves, since this under favorable circumstances would not be more than that of a column of water twenty feet high, giving a pressure of about ten pounds to the square inch. The effect, however, of the percussion might add considerably to this, though the latter would be confined in effect to a single instance. In regard to the practical result from this arrangement, which was continued in operation for several years, it was found not to obviate the necessity of producing sounds of greater power. It is, however, founded on an ingenious idea, and may be susceptible of application in other cases.

There is now a first-class siren in duplicate at this place.

The sixty-six steam fog-signals in the waters of the United States have been established at a cost of more than $500,000, and are maintained at a yearly expense of about $100,000. The erection of each of these signals was authorized by Congress in an act making special appropriations for its establishment, and Congress was in each instance moved thereto by the pressure of public opinion, applied usually through the member of Congress representing the particular district in which the signal was to be located. And this pressure was occasioned by the fact that mariners have come to believe that they could be guided by sound as certainly as by sight. The custom of the mariner in coming to this coast from beyond the seas is to run his ship so that on arrival, if after dark, he shall see the proper coast-light in fair weather, and, if in thick weather, that he shall hear the proper fog-signal, and, taking that as a point of departure, to feel his way from the coast-light to the harbor-light, or from the fog-signal on the coast to the fog-signal in the harbor, and thence to his anchorage or his wharf. And the custom of the coaster or the sound-steamer is somewhat similar.

Aberration of Sound.—The fog-signal being found trustworthy in its usual performance, mariners relied on it, and occasionally met disaster. But the failure was, as a rule, ascribed to the signal-keeper rather than to the signal. Still, the complaints set the Lighthouse Board at work to ascertain the cause and, if possible, to provide the remedy. A series of experiments with fog-signals was made by Prof. Henry, beginning in 1865 and continuing till the latter part of 1877. Certain abnormal phenomena were observed relative to the audition of the sound the fog-signals made, and finally examinations were made to ascertain the extent of these aberrations and the cause of them. The aberrations in audibility had not escaped the attention of earlier writers.

The causes assigned for these abnormal phenomena of sound are almost as various as the writers on them. Dr. Derham, writing in 1708, seemed to consider them as caused by variations in temperature, moisture, and wind. Baron von Humboldt, and after him Dr. Dove, Sir John Herschel, and Dr. Robinson, held that aërial flocculence is answerable for these phenomena, a theory adopted and amplified by Dr. Tyndall. Prof. Henry, however, has presented another and different theory, and has worked it out in a series of long-continued and careful experiments, accounts of which are published at length in the reports of the Lighthouse Board and by the Smithsonian Institution in its regular series, and in a separate volume. He reached the conclusion that the wind, when moving at the rate of eight or ten miles an hour, could not act in perceptible retardation of sound when it was moving at the rate of 750 or 780 miles an hour, but he had accepted the idea that it might act by deflection. At this time the suggestion of Prof. Stokes, of Cambridge, England, which offered a plausible explanation of the action of the wind, became known to him, when it "was immediately adopted as a working hypothesis to direct investigation." Prof. Stokes's explanation, which Tyndall speaks of as suggested by some remarkable observations of De la

Roche, roughly stated, is this: "The several strata into which a current of air may be divided do not move with the same velocity. The lowest stratum is retarded by friction against the earth; the one immediately above by friction against the lower; hence the velocity increases from the ground upward." And when the direction of the sound is perpendicular to the sound-wave, as when it is projected against the wind, it will be thrown upward ahead of the observer; and when it is projected with the wind, it will be thrown downward toward the earth. Proceeding on this suggestion of Prof. Stokes, Prof. Henry worked out by careful tests, and gave as the results of his experiments, the causes of the five formulated phenomena, as follows:

1. The audibility of sound at a distance, and its inaudibility nearer the source of sound.
2. The inaudibility of a sound at a given distance in one direction, while a lesser sound is heard at the same distance in another direction.
3. The audibility at one time at a distance of several miles, while at another the sound can not be heard at more than a fifth of the same distance.
4. While the sound is generally heard farther with the wind than against it, in some instances the reverse is the case.
5. The sudden loss of a sound in passing from one locality to another in the same vicinity, the distance from the source of sound being the same.

Prof. Henry explains these abnormal phenomena thus: "The first four of these phenomena find a ready explanation . . . by supposing an increase or diminution in the relative velocity of the currents of wind in the upper or lower strata of air. The fifth is explained by the interposition of an obstacle which casts, as it were, a sound-shadow, disappearing at a given distance by the divergence of the rays on each side of the obstacle into what would be an optical shadow."

Prof. Henry read a paper before the Washington Philosophical Society, Dec. 11, 1872, in which he announced his idea that its cause was due to the deflection of the sound by the action of the wind, an idea which he afterward developed into what he styled a good working hypothesis.

Prof. Tyndall, in May, 1873, began his series of investigations on the subject of the transmission of sound, under the auspices of the Trinity House, of England, in which whistles, trumpets, guns, and the siren were used, the last-named instrument having been lent by the Lighthouse Board of the United States to the Trinity House for the purpose. President Welling makes effective use of these dates in settling the question of precedence as between these authorities.

Among Prof. Henry's last out-givings on this subject, one which, it may be said, occupied much of his attention even in his last illness, were those styled in his last report to the Lighthouse Board "General Conclusions," which may be thus briefly summarized, his own words being used as far as possible:

1. The audibility of sound at a distance—the state of the atmosphere being constant—depends on the character of the sound.
2. The audibility of sound depends on the state of the atmosphere. A condition most favorable to the transmission of sound is that of perfect stillness, and uniform density and temperature throughout.
3. But the most efficient cause of the loss of audibility is the direct effect produced by the wind. . . . Sound moving with the wind is refracted or thrown down toward the earth; while, moving against the wind, it is refracted upward and passes over the head of the observer.
4. Although, as a general rule, the sound is heard farther when moving with the wind than when moving against it, yet in some instances the sound is heard farthest against the wind, owing to a dominant upper wind blowing at the time in an opposite direction to that at the surface of the earth.
5. Although sound issuing from the mouth of the trumpet is at first concentrated in a given direction, yet it tends to spread so rapidly that, at the distance of three or four miles, it fills the whole space of air inclosed within the circuit of the horizon, and is heard behind the trumpet nearly as well as at an equal distance in front of its mouth.
6. Neither fog, snow, hail, nor rain materially interferes with the transmission of loud sound.
7. In some cases sound-shadows are produced by projecting portions of land, or by buildings situated near the origin of the sound; but these shadows are closed in by the spread of the sound-waves, and thus exhibit the phenomenon of sound being heard at a distance and afterward lost on a nearer approach to the station.
8. It frequently happens on a vessel leaving a station that the sound is suddenly lost at a point in its course, and, after remaining inaudible some time, is heard again at a greater distance, and then is gradually lost as the distance is further increased. This is attributed to the upward refraction of the sound-wave, which passes over the head of the observer, and continues an upward course until it nearly reaches the upper surface of the current wind, when the refraction will be reversed, and the sound sent downward to the earth. Or the effect may be considered as due to a sound-shadow produced by refraction, which is gradually closed in at a distance by the lateral spread of the sound-wave with the earth on either side, in a direction which is not affected by the upper refraction. Another explanation may be found in the probable circumstance of the lower sheet of sound-beams being actually refracted into a serpentine or undulating course.
9. The existence of a remarkable phenomenon has been established, which is exhibited in all states of the atmosphere, during rain, snow, and dense fog, to which has been given the name of aërial echo. It consists of a distinct echo, apparently from a space near the horizon of 15° or 20° in azimuth, directly in the prolongation of the axis of the trumpet. The loudness of this echo depends upon the loudness and quality of the original sound, and therefore it is produced with the greatest distinctness by the siren. It can not be due to the accidental position of a flocculent portion of the atmosphere, nor to the direct reflection from the crests of the waves, as was first supposed, since it is always heard, except when the wind is blowing a hurricane.

As a provisional explanation, the hypothesis has been adopted that, in the natural spread of the waves of sound, some of the waves must take such a curvilinear course as to strike the surface of the water in an opposite direction, and thus be reflected back to the station or location of the origin of the sound.

Prof. Tyndall referred these phenomena, in his book on "Sound," to the existence of acoustic clouds consisting of portions of the atmosphere in a flocculent or mottled condition due to the unequal distribution of heat or moisture,

which, absorbing and reflecting the sound, produced an atmosphere of acoustic opacity.

In the mean time ship-masters were occasionally bringing their ships to grief by placing too much confidence in their hearing of the fog-signals. Complaint would follow against the signal-keeper, who would be charged with having failed on that particular occasion to operate his fog-signal. Thereupon the matter would be investigated by a disinterested person, usually an officer of the navy, and it would generally be made to appear that the fault lay not in the fog-signal, nor in the signal-keeper, but in the audition by the mariner of the blast the fog-signal made.

In fact, these investigations have shown the fallacy of the sailor's idea that sound is always heard in all directions from its source, according to its intensity or force, and according to the distance of the hearer from it; and they have also proved to the sailor, what was before known to the scientific world, that though there may be no lack in the volume of the sound emitted by the fog-signal, there may be a decided lack in the audition of that sound; that it may not be heard at the intensity properly expected; that it may not be heard at all at the place expected; that it may be heard faintly where it ought to be heard loudly; that it may be heard loudly where it should be heard faintly; that it could not be heard at all at some points within easy ear-shot; and then farther away it could be heard better than near by; that it could be heard and lost and heard and lost again within reasonable hearing distance, and all this while the signal was in full blast and sounding continuously.

A *résumé* of certain of these investigations made by disinterested officers of the Government, showing their method and their results, will make these statements more readily comprehended.

On the night of Nov. 6, 1880, the steamer Rhode Island was wrecked on Bonnet Point, at the western entrance to Narragansett Bay, when more than $1,000,000 was lost. The cause of the disaster was alleged to be the failure of Beaver Tail fog-signal (then a Daboll trumpet) to sound its blast. This signal was on the southern end of Conanicut island, which divides the entrance of Narragansett Bay. The western entrance is but 1¾ of a mile wide, with rocky shores. Bonnet Point is but 1¼ mile from Beaver Tail. As the fog-signal was generally heard at Newport, five miles distant, and had been heard ten miles away, it seemed almost self-evident that the fog-signal keeper had failed to operate his machine when it could not be heard on a steamer at Bonnet Point, or even when she was in the middle of the channel not a mile away from the signal. But the Lighthouse Board, as usual, caused investigation to precede action. An officer of the navy, detailed to look into the matter, found copious evidence that the fog-signal was in full blast before, after, and during the disaster, and that it had been heard and acted on by other vessels much farther off than the Rhode Island. Then he took the testimony of the officers and passengers of the ill-fated steamer, and found it certain that they listened for and expected to hear the fog-signal; that they practically did not hear it, and the effect on them was the same as if it had not been operated at all. Thereupon, on Nov. 16, 1880, ten days after the wreck, he set the fog-signal going, though it was on a clear, cold, sunny day, and ran over in a sail-boat the course the Rhode Island had taken, going to the wreck itself, and then ran out of the western channel up by the fog-signal, through the eastern channel, by Castle Hill and Fort Adams, to Newport. The result is shown in Fig. 3, in which the intensity of the sound as heard from the sail-boat is graphically indicated by the width of the track taken by the boat. Where the line is widest, the sound had the most volume; where the line is narrowest, the sound was the least; where the line is broken, the sound could not be heard at all. The wind was moderate, from the west. The observations began at 11.25 A. M. and occupied several hours. The result showed all the aberrations of audition named as possible in the preceding paragraph.

In the summer of 1881, while on a lighthouse steamer, the writer experienced something of the variations in the audition of sound made by the Beaver Tail fog-signal, then a ten-inch steam whistle. When the steamer left the landing at that lighthouse, the fog-signal was to sound for a given time and to begin when the steamer had reached a point about half a mile distant. When that point was reached, we could see from the steam-puffs coming from the stack-pipe that the signal was being blown; but we could not hear it, nor did we, as we continued on our course, running at the rate of six miles an hour, for the next five minutes. When near Whale Rock, slightly less than a mile and a half from the signal, the steamer's paddle-wheels were stopped, silence was ordered fore and aft, and we all listened intently. The expert naval officers thought they heard a trace of the fog-signal, but my untrained ears failed to differentiate it from the moan of the whistling-buoy near Whale Rock. Yet the blast of the ten-inch whistle for which we were listening is often heard ten miles away, with distinctness and certainty.

Soon after I had another opportunity to observe the operations of this signal. We left Narragansett Pier, R. I., on Aug. 6, 1881, at 4 P. M., in a dense fog, with a strong breeze from the west-southwest and a heavy chop sea. We wished to ascertain how far the Beaver Tail fog-signal could be heard dead to windward, and in the heaviest of fogs. At Whale Rock, one and one third mile from it, we did not hear a trace of it; then the steamer was headed directly for Beaver Tail Point, and we ran slowly for it by the compass until the pilot stopped the steamer, declaring we were almost

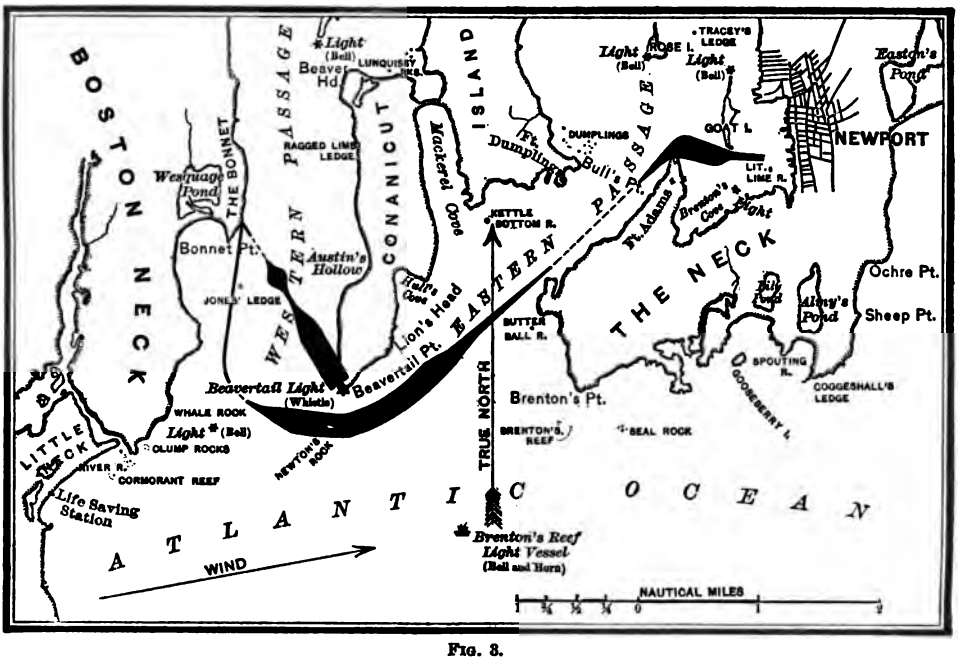


FIG. 3.

This diagram shows the result of observations made by Lieut.-Commander Chadwick, U. S. N., on Beaver Tail fog-signal, Rhode Island, made November 16, 1880, from a sail-boat. Thermometer at beginning, 58° Fahr.; ending, 67°. Wind, moderate, from the west. Weather, clear and cold, with bright sun. Time, beginning at 11.15 A. M.

aboard of the signal itself. Every one strained his ear to hear the signal, but without success; and we had begun to doubt of our position when, the fog lifting slightly, we saw the breakers in altogether too close proximity for comfort. We passed the point as closely as was safe, and when abreast of it and at right angles with the direction of the wind, the fog-signal broke on us suddenly and with its full power. We then ran down the wind to Newport, and had the sound with us all the way. The fog continuing during the next day, the signal kept up its sound, and we heard it distinctly and continuously at our wharf, though five miles distant.

The keeper of the lighthouse at Point Judith has declared that at a particular place between that point and Beaver Tail Point the paddle-strokes of a steamer become inaudible for a moment or two, giving the impression that the vessel has stopped, notwithstanding the fact that they are seen to be revolving and had previously been plainly heard at a longer distance.

On the night of May 12, 1881, about midnight, the Galatea, a propeller of over 1,500 tons burden, with a full load of passengers and freight, bound through Long Island Sound from Providence to New York, grounded in a dead calm and a dense fog on Little Gull island, one eighth of a mile from and behind the fog-signal, and got off two days later without damage. That portion of the island itself which is above water is but a knob, barely large enough to hold a circular platform about one hundred feet across, on which stand the lighthouse and fog-signal building. Great Gull island, perhaps half a mile from it, is the nearest land. Little Gull island is so surrounded by deep water that vessels can sail around it. It was alleged, as is usual in cases of accident near a fog-signal, that the siren at Little Gull was not in operation at the time of the accident. The signal there was a second-class steam-siren; it was of a similar instrument that Tyndall said in reference to his experiments for Trinity House: "What may with certainty be affirmed is, that in almost all cases the siren may certainly be relied on at a distance of two miles; in the great majority of cases it may be relied on at a distance of three miles; and in the majority of cases at a distance greater than three miles"; and yet the Galatea failed to hear the Little Gull siren, and went ashore about two hundred yards from it, on an under-water prolongation of the island on which the siren was in full blast.

The Lighthouse Board ordered an investigation. This was made by the Assistant Inspector of the Lighthouse District, a naval officer, who reported that after taking the sworn evidence of the light-keepers at Little Gull and the other light-stations within hearing distance, of other government officers who were so located that they might have had knowledge of the facts, and of the officers of vessels that were within ear-shot, including those of the Galatea, he reached the conclusion that the fog-signal was sounding at the time of the accident; and that,

although the fog-signal was heard at Mystic, fifteen miles distant in another direction, and although it was heard on a steam-tug a mile beyond the Galatea, it was heard faintly, if at all, on that vessel; and if heard at all, was so heard as to be misleading, though the Galatea was but one eighth of a mile from the source of the sound.

It appears that this officer spent several days steaming around Little Gull, while the fog-

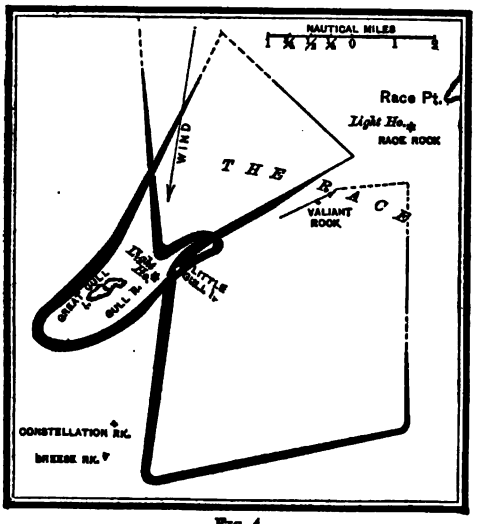


FIG. 4.
This diagram shows the result of fog-signal tests at Little Gull Island, Long Island Sound, July 11, 1881. Time, 10 A. M. Wind, N. N. E.; force, 2. Barometer, 29·77. Thermometer, 61° Fahr. Weather at beginning, dark, overcast, with squalls of Scottish mist from N. N. E. It began to clear at 11.30 A. M.

signal was in full blast, in various kinds of weather, and that he found the aberrations in audition here were as numerous and even more eccentric than those before mentioned as ex-

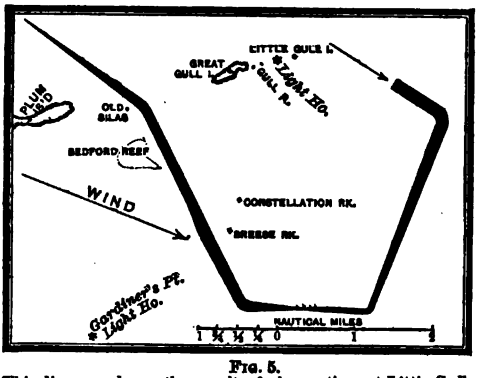


FIG. 5.
This diagram shows the result of observations at Little Gull Island, Long Island Sound, July 15, 1881, beginning at 6.30 A. M. Thermometer, 59° Fahr. Barometer, 29·80. Wind, W. N. W.; force, 3, hauling westward and increasing gradually.

perienced at Beaver Tail. The results of his observations are given in Figs. 4 and 5, and in each case the condition of the atmosphere as to humidity, pressure, temperature, and motion are shown, as is also the tidal condition.

On August 3d the writer had an opportunity to hear this fog-signal and to note its audibility. The wind was from the south and very light; the air was damp, smoky, hazy, and, as the sailors say, hung low; the barometer stood at 29·90; the tide was about flood. Our steamer was run for six miles in the axis of the siren's trumpet, which was sounded for our benefit at its full force. Note was made every third minute in a scale of ten of the intensity of the sound, and it was found that the audition decreased normally with the distance for the first two miles; at 2½ miles it had fallen off one half; at 3 miles it had fallen off to one tenth of its power; at 3½ miles away we could hear but a faint murmur, and, when 4 miles distant, we had lost it completely; and yet there seemed to be no reason why we should not have heard it clearly at three times that distance.

The next morning was calm, but heavy with white fog; yet we heard the Little Gull siren distinctly, though it was 10½ miles off, as we lay at our wharf in New London. The steamer ran out of the harbor, but was compelled to anchor, so thick was the fog; yet we heard Little Gull, though 7½ miles off, at a force of six in the scale of ten, and the sound was so distinct that we could differentiate it from the siren at the New London light, which was much nearer to us. The steamer worked round to inspect the neighboring lights, and we heard the Little Gull siren when at North Dumpling light station, 7 miles off, at a force of six; at Morgan's Point Light, 10 miles off, at a force of five; and we continued to hear it at an intensity of from five to six as we worked around among the other lights, within a compass of 10 miles, till the fog broke and the siren ceased.

Opportunity soon occurred for making more critical experiments. On a fine day we ran out to Little Gull, had the siren started under full steam, and then, following out a pre-arranged programme, ran around Little Gull island in such way as to describe a rectangle of about eight by ten miles, its longest side running nearly north and south. No fixed rate of speed was maintained, but the steamer slowed, backed, or stopped, as was necessary. The atmosphere was what the sailors call lumpy, and Prof. Tyndall calls non-homogeneous. Prof. Henry, when writing of a like condition, said, "As the heat of the sun increases during the first part of the day, the temperature of the land rises above that of the sea, and this excess of the temperature produces upward currents of air, disturbing the general flow of wind, both at the surface of the sea and at an elevation above." Observations were made and noted in a scale of ten, of the force or intensity of the signal's sound as it reached us at the end of each minute. The diagram, Fig. 6, shows a sufficient number of the results for our pur-

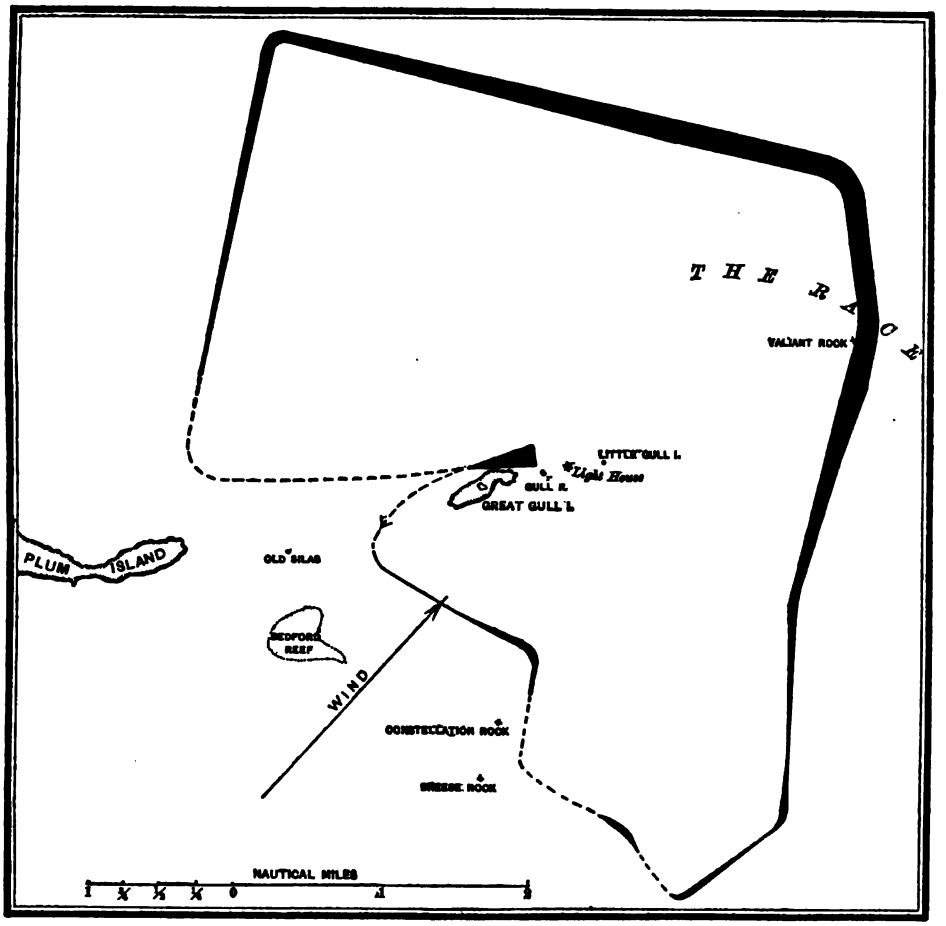


FIG. 6.

This diagram shows the result of observations at Little Gull Island, Long Island Sound, Aug. 9, 1881, beginning at 10 A. M. Thermometer, dry bulb, 78·09°; wet bulb, 78° F. Barometer, 29·77. Wind S. W., force 3. Cir. strat. clouds about the horizon.

poses, taken from the tabulated schedule of our notes.

At 4 P. M. two of us went in a row-boat to Little Gull, from the steamer which lay at anchor half a mile off, and verified the fact that the fog-signal had been in full operation during the time of our observations. It then occurred to us to investigate still more closely what appeared to be a space, a circle of silence, in which, during the experiments of the morning, we had failed to hear the signal. After having had the siren put in full operation again, we pulled toward the nearer end of Great Gull island, the siren sounding meantime with ear-splitting force. When about 600 yards away, we suddenly lost the sound as completely as if the signal had stopped. Pulling toward the steamer, not more than 200 yards, we reached a position at right angles with the axis of the siren's trumpet, when we suddenly heard the sound again at its full force. Thus, in pulling 500 yards, we passed from complete audition of the signal to absolute inaudition; and then we passed back again to complete audition by pulling 200 yards in another direction. All this took place within half an hour, in open water, always in full view of the signal-station, and without any visible obstacle being interposed or removed. While on the island we learned that one of the light house keepers, who had been on leave, had just returned from Sag Harbor, twenty miles to the south-east. He had failed to hear the signal at all, until opposite the eastern end of Great Gull island, and until he was within half a mile of the siren, which was in full operation.

The next morning our steamer anchored about a mile north of Little Gull; the wind was light, the air was clear, and the day was warm and beautiful. As it had been preceded by a warm night, the atmosphere was homogeneous, and it was expected that we should

have a day of normal audition and barren of curious phenomena. After the siren had begun its noise, we ran down to a point within half a mile of the lighthouse, and then steamed for Plum island, running a little south of east for six miles, when we returned as nearly as might be on our own track. The results were curious. We lost half the force of the sound when within a quarter of a mile of the siren; a moment later we had lost four fifths of it. Running another half-mile, we were off the middle of Great Gull island, and the sound had increased to a force of four; in five minutes more it had dropped to three; from that time, till we reached the end of our six-mile run, it gradually weakened, and it had dropped to a force of two when we turned and ran back to our anchorage. It is especially curious that the sound had the same intensity at three sixteenths of a mile from its source, and at six whole miles from that point, while it varied from two to ten in a scale of ten between those points. The results of the trip are more fully and exactly given in the diagram, Fig. 7.

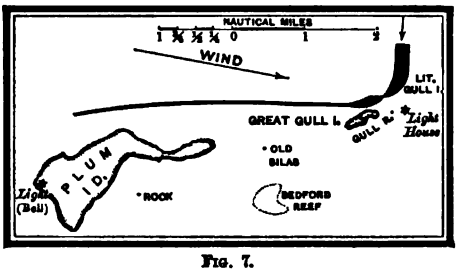


FIG. 7.

This diagram shows the result of observations at Little Gull island, Long Island Sound, Aug. 10, 1881, beginning at 10.30 A. M. Thermometer, dry bulb, 76°; wet bulb, 75° F. Barometer, 29·40. Wind W. by N., force 8, and steady throughout. Day clear and beautiful.

Thinking that possibly this peculiarity might have been induced by those differences of temperature in the strata of the atmosphere suggested by Tyndall as probable cause for such phenomena, effort was made to ascertain something of these differences by sending a thermometer to the upper air. In the course of the afternoon we made a kite six feet high, attached to it a self-registering thermometer, and after several trials succeeded in getting it up about 500 feet, and in hauling it safely in again after it had been up over an hour. The thermometer had a wet bulb, and was protected from the direct rays of the sun; but it registered only half a degree more of heat at its highest point than it had registered in the pilot-house. The course the kite took showed no difference between the air-currents slow and aloft.

The result of these and other observations was laid before the Washington Philosophical Society on Oct. 22, 1881, and then, and at a subsequent meeting, was made the subject of some discussion, an account of which appeared in its publications, and was published in pamphlet form.*

M. Allard, Director of the French Lighthouse Service, in his "Mémoire sur la Portée des Sons et sur les Caractères à attribuer aux Signaux sonores," recently published by his Government, records some curious experiments with various fog-signals made in France, Germany, and England, as well as in this country. He has compared, in tabular form, the results of these experiments, and gives the range of sound of each instrument under a variety of conditions, taking into consideration the intensity and pitch of the sound, the direction and force of the wind, and its angle of action on the phonic beam. He has established a mathematical formula for the calculation of the range of the sound of each instrument, under certain given circumstances, in which he expresses what he styles the acoustic transparency of the atmosphere by a coefficient, and he has also expressed graphically the set of results obtained, thus assisting largely the intelligent discussion of the general subject.

Tillamook Light and Fog-Signal Station is on an isolated rock about half a mile west of the coast of Oregon, and about 20 miles south of the mouth of Columbia river. The signal is a steam-siren. The surface of the rock is about 86 feet above the water, and the trumpet, which points almost westward, has an elevation of fully 100 feet. (See engraving on page 443, "Annual Cyclopædia" for 1880.) Col. Gillespie, of the Corps of Engineers, U. S. A., who built the tower and put in the illuminating and fog-signal apparatus, tested the latter, steaming to the west directly from it on a clear bright day, and found that the sound became practically inaudible at a distance of two miles. In a letter dated Nov. 6, 1882, he wrote:

My first attention was called to the defects of audibility by the captain of the Shubrick, who stated, in May, 1881, that, when anchored in a small bight south of the rock near Arch Rock, and about one mile distant, he could hear the sound but faintly. On my next visit I directed the engineer to get up steam, and when he had a pressure of fifty pounds, to whistle, and then set the machinery in motion. On receiving the signal, I made a circuit of the rock and then proceeded westward under slow bell, recording my distance by interval of sound at each blast. At two miles the sound became quite weak, and at the next blast no sound was received. Our engine was not stopped when receiving the sound, and my station was aft quite near the propeller; the day was bright and clear, without any wind. The temperature was 65° or thereabout; don't know the barometer reading. On receiving the next sound the boat was at rest, that is.

NOTE.—Figs. 4, 5, 6, and 7, were prepared from diagrams made and sent the writer by the eminent chief of the French Lighthouse Service, Emile Allard, Inspecteur-Général des Ponts et Chaussées, Directeur du Service Central des Phares et Balises. M. Allard made them from the diagrams in the writer's paper on the "Aberrations of Audibility of Fog-Signals," in which the intensity of sound at each point was indicated by Arabic numerals in a scale of ten. The writer submits Allard's diagrams, because they convey the desired meaning better than do his own diagrams.

* Aberrations of Audibility of Fog-Signals. By Arnold B. Johnson, Chief Clerk of the Lighthouse Board. Washington, 1882.

just as soon as the puff was noticed the engine was stopped, and we waited for the sound. A very faint sound was noticed up to four miles, and beyond that nothing was heard.

I was then on the point of returning to the rock to examine the machinery personally, when it struck me that I ought to go out to the estimated limit of the range. On resuming our course, nothing was heard until we were out seven miles approximately, when the sound became audible again—a clear, resonant sound, but low-toned. We carried this characteristic sound for another four miles, when it likewise disappeared. The engineer afterward told me that he carried at least sixty pounds of steam. It was growing late, and as the sea and rising winds gave promise of a squall, we hurried back to get inside of the bar. . . . The sea-captains on the iron vessels plying to San Francisco reported later that they were able to hear the sound at a distance of eight miles. . . . My impression is that the cliffs of the east side are too far distant to affect the sound one way or the other. I have never heard an echo there, and I believe that the distance is too great to have the noise of the surf upon the rocky beach deaden the sound seaward of the station.

The ends of the trumpet are bent toward the horizon, terminating in bell-shaped lips. The sound is propagated therefrom in a horizontal plane, and previous experiments have shown that the sound produced is as strong as if the whole trumpet lay horizontally.

This is quoted as showing that the sound, which on one occasion intermitted at two miles from its source, was heard faintly at four miles, and then again distinctly at seven miles, and was carried out to eleven miles, when the steamer turned back without ascertaining how much farther the sound might be carried. This is deemed a peculiar and important instance, as there was practically no land or other thing in front of the source of sound, unless it be an opaque cloud from which the sound could rebound, or which could cast a sound-shadow for hundreds of miles.

Some curious experiments have taken place off Whitehead Light and Fog-Signal Station, which is in the Atlantic on a small island about one and a half mile from the coast of Maine. The fog-signal is on the southeastern slope of the rock, and about seventy-five feet above mean tide. The phenomena observed by Prof. Henry consisted in great variation of intensity of sound while approaching and receding from the station. One instance occurred during a thick night-fog in 1872, when, approaching the station in the steamer City of Richmond at a distance of six miles, the fog-signal, a ten-inch steam-whistle, was distinctly heard and continued to be heard with increasing intensity until within three miles, when the sound suddenly ceased to be heard, and was not heard again until the steamer was within a quarter of a mile of the station, though it was known that the signal had been sounding during the whole time. The wind was from the south, or almost opposed to the sound, but during the whole of this time the fog-signal keeper could hear the sound of the steamer's six-inch whistle.

Commander H. F. Picking, U. S. N., then inspector of the First Lighthouse District, having frequently received complaints from ship-masters that they lost the sound of the Whitehead fog-signal, determined to ascertain the facts by personal investigation, and in July, 1877, approached Whitehead from the southeast during a fog. He reports that he heard the sound distinctly from six to four miles, then lost it, and could hear nothing until within a quarter of a mile of the island, when the blast of the whistle burst forth in full sound. The wind was then against the sound.

Previously, Gen. Duane, of the Corps of Engineers, U. S. A., then engineer of that lighthouse district, reported that, approaching the signal from the southwest, he heard the sound at about six miles' distance, then lost it, and did not hear it again until within about a quarter of a mile. The wind was then also against the sound.

On Sept. 4, 1877, Prof. Henry made further experiments at Whitehead. The weather was clear, the wind west-southwest, with a velocity of from ten to twelve miles, remaining nearly constant during the day. The barometer stood at 28·9; the thermometer at 67° Fahr. in the open air, and about 57° in the water. As they steamed from the station directly to windward, the sound slightly diminished. When they were between a quarter and a half mile distant, they lost the sound completely, and it continued inaudible for about a mile, when it was faintly heard, and continued to increase in loudness until they were four miles off, when it was heard with clearness, but on going on it diminished gradually. They then went back over their course, and observed the phenomena in the reverse order. Experiments tried on three other days showed curious results, which differed somewhat from those previously made, of which a full report is given in the "Annual Report of the Lighthouse Board for 1877," together with Prof. Henry's views as to the cause of each observed phenomenon. A full account of the matter is also given in the book entitled "Henry on Sound."

Col. C. E. Blunt, Corps of Engineers, U. S. A., then engineer of the First Lighthouse District, was also at a later date struck by the peculiarity in the audition of the sound from this signal. Writing from Portland, Maine, on Sept. 28, 1882, he said:

The peculiarities of Whitehead whistle have already been noted. Quite recently I have myself noted one of them. Leaving there for Portland, in the Myrtle, early on the morning of the 2d instant, the whistle having been blown during fog part of the previous night for the first time, with its new characteristics (4-second blast and 26-second interval), the keeper kept it going for a short time after the weather had cleared, as I wished to test it. It was bright sunshine, with the light air from the southeast, I think. Leaving the Head, the whistle was plainly heard for two or three miles; when, still in plain sight, the sound began to grow fainter, and at length was quite inaudible, though it was plainly blowing. In a few minutes the sound was again faintly heard, and, increasing in volume, soon came out in full force, and so continued. It was clearly deflected upward, and then downward, as I imagined, thus:

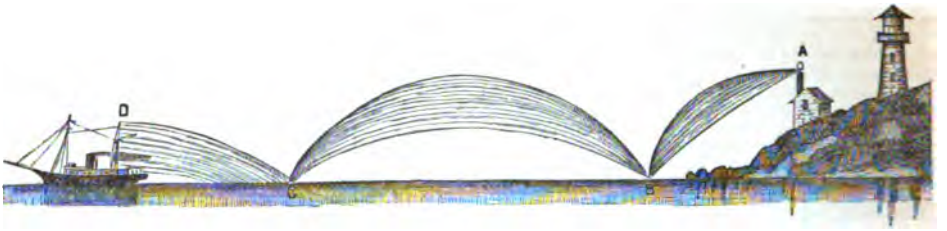


FIG. 8.—BLUNT'S DIAGRAM.

With regard to snow, it is thought by seamen in this vicinity that it is favorable to sound; certainly, Portland Head trumpet is very distinctly heard here during violent northeast snow-storms, when it is directly to the leeward.

Prof. Henry made observations at a number of light-stations for various purposes connected with the investigation of the laws of sound, from his report of which it appears that he noted a number of instances of remarkable aberrations of audition of several fog-signals. These are recorded at length in "Henry on Sound," in the reports of the Lighthouse Board of 1874–'75, and in the reports of the Smithsonian Institution for several years.

The experiments were not confined to our own shores. Prof. Tyndall, who stood in the same relations with the British Lighthouse Establishment that Prof. Henry did to our own, reported thus:

With a view to the protection of life and property at sea in the years 1873–'74, this subject received an exhaustive examination, observational and experimental. The investigations were conducted at the expense of the Government, and under the auspices of the Trinity House. The most conflicting results were at first obtained. On the 19th of May, 1873, the sound-range was 3½ miles; on the 20th it was 5½ miles; on the 2d of June, 6 miles; on the 3d, more than 9 miles; on the 10th, 9 miles; on the 25th, 6 miles; on the 26th, 9½ miles; on the 1st of July, 12¾ miles; on the 2d, 4 miles; while on the 3d, with a clear, calm atmosphere and smooth sea, it was less than 3 miles.

From the letters received from officers of the navy and of the merchant marine service, also from officers of the English, Scotch, and French lighthouse establishments, it is evident that public attention is being given to the subject, and that observations are being made as to such aberrations simultaneously in various parts of the world.

Dr. Welling, President of Columbian University, in a paper read before the Washington Philosophical Society, Nov. 5, 1881, said:

In a paper presented to the Royal Society in 1874, Prof. Reynolds showed that the form of the sound-wave is liable to flexure from changes in the temperature of the atmosphere, as well as from the unequal motion of the wind. These abnormal phenomena of sound, considered in connection with the hypothesis of Prof. Stokes, as enlarged and applied by Prof. Henry, may be reduced in the following generalizations, which, if accurate in point of logical form, and true in point of the facts to which they are applied, may be stated under the guise of aphorisms, as follows:

1. Where the condition of the air is nearest that of a calm, the larger will be the curve of audition, and the nearer will the shape of the curve approach to a circle, to which the point of origin of the sound, or the point of perception, will be the center. (This aphorism is stated abstractly from any consideration of temperature-refraction which, so far as it exists, will always tend to modify the shape of the curve of audition.)

2. Apart from all consideration of temperature-refraction, a sound will be heard farthest in the direction of a gentle wind, because the portion of the sound-wave thrown down from above, in this case, is re-enforced by the sound reflected from the surface, and will thus more than compensate for the loss by friction.

3. Other things being equal, the area of audition will be proportionately diminished in the case of sounds moving against winds more or less strong, because the sonorous waves will be refracted above the ears of the observer.

4. The area of audition will be diminished in the case of a sound moving with an over-strong favoring wind, because the sound-waves in this case will be so rapidly and strongly thrown to the ground that the intensity of the sound will suffer more diminution from absorption and friction than can be supplied by the upward reflection of the sound-rays conspiring with the gradual downward flexure of the sound-waves, as in the case of a gentle favoring wind.

5. Sounds moving against a gentle wind will, *ceteris paribus*, be heard farther than similar sounds moving with an over-strong favoring wind, for reasons already implied, because the downward flexure of the sound-waves, being excessive in the latter case, tends to extinguish the conditions of audibility more rapidly than is done by the slight upward refraction in the former case.

6. When sounds moving against the wind are heard farther than similar sounds moving with a wind of equal strength, it is because of a dominant upper wind blowing at the time in a direction opposite to that at the surface.

7. A sound moving against the wind, and so refracted as in the end to be thrown above the head of the observer, will, at the point of its elevation, leave an acoustic shadow. But this acoustic shadow, at a still further stage, may be filled in by the lateral spread of the sound-waves, or may be extinguished by the downward flexure of the sound-waves, resulting from an upper current of wind moving in an opposite direction to that at the surface, or resulting in a less degree from an upper stratum of still air. Under these circumstances, there will be areas of silence inclosed within areas of audition.

8. As sounds may be refracted either by wind, or by changing temperatures, or by both combined, it follows that, under many circumstances, a sound lost at one elevation may be regained at a higher elevation.

9. As sounds moving against the wind are liable to become inaudible (by being tilted over the head of the observer), even before their intensity has been extinguished, we may find in this fact an explanation of the statement made by Reynolds, that "on all occasions the effect of wind seems to be rather against distance than distinctness."

10. As sounds may be inaudible at certain distances and elevations without being wholly extinguished, it follows that the comparative inaudibility of sounds at different times can not always be cited as an evidence of their relative intensities. The comparative inaudibility may be a function of variable refraction, rather than of variable intensity. Hence the law of inverse squares, though perfectly true in its theoretical application to the measurement of the intensity of all sounds, can not always be legitimately used to calculate backward from the audibility of a sound, as empirically ascertained at a given point and elevation, to its relative intensity as previously heard at the same point and elevation.

11. The hypothesis of Stokes, as applied by Henry, does not exclude the hypothesis of Humboldt, but reduces the latter to a very subordinate and inappreciable place in interpreting the abnormal phenomena of sound.

12. The hypothesis of Stokes, as applied by Henry, does not exclude the reasoning or the experimental proofs by which Prof. Reynolds demonstrates that differences in temperature exert a refracting power in sound, but finds in that refraction an influence which may sometimes accelerate and sometimes retard the refraction produced by wind.

The officer who made the reports as to the fog-signals at Beaver Tail and Little Gull, after the accidents to the steamers Rhode Island and Galatea heretofore mentioned, was then Assistant-Inspector of the Third Lighthouse District, Lieut.-Commander F. E. Chadwick, U. S. N.; and it was he who had charge of the lighthouse steamer while the foregoing observations were being made, after Capt. George Brown, U. S. N., the inspector, was called elsewhere. In answer to certain questions as to the opinions which had forced themselves upon him, he said:

It seems to me that navigators should understand that, when attempting to pick up a fog-signal, attention must be given to the direction of the wind, and that if they are to windward (in a moderate breeze) the chances are very largely against hearing it, unless close to: that there is nearly always a sector of about 120° to windward of the signal, in which it either can not be heard at all, or in which it is but faintly heard. Thus, with the wind east-southeast, so long as they are bearing from the signal between northeast and south, there is a large chance that the signal will not be audible until it is very close.

As they bring the signal to bear at right angles with the wind, the sound will almost certainly, in the case of light wind, increase, and it will soon assume its normal volume—being heard almost without fail in the leeward semicircle.

Fog, to my mind, and so far as my experience goes, is not a factor of any consequence whatever in the question of sound. Signals may be heard at great distances through the densest fogs, which may be totally inaudible in the same directions and at the same distances in the clearest atmosphere. It is not meant by this last statement that the fog may assist the sound, as at another time the signal may be absolutely inaudible in a fog of like density, where it had before been clearly heard. That fog has no great effect, can easily be understood when it is known, as it certainly is known by observers, that even snow does not deaden sound, there being no condition of the atmosphere so favorable for the far-reaching of sound-signals as is that of a heavy northeast snow-storm, due, supposably, to the homogeneity produced by the falling snow.

It seems to be well established by numerous observations that on our own northern Atlantic coasts the best possible circumstances for hearing a fog-signal are in a northeast snow-storm, and, so far as these observations have extended, they seem to point to the extraordinary conclusion that they are best heard with the observer to windward of the signal; and that in light winds the signal is best heard down the wind, or at right angles with the wind.

The worst conditions for hearing sound seem to be found in the atmosphere of a clear, frosty morning on which a warm sun has been shining for two or three hours.

The curve of audibility in a light or moderate breeze, in general, is similar to that plotted by Prof. Henry, as in the accompanying diagram.

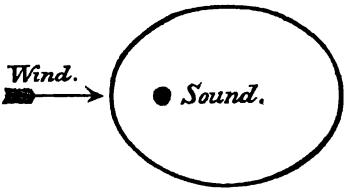


FIG. 9.—THE HENRY DIAGRAM.

I think it is established that there are two great causes for these phenomena: non-homogeneity of the atmosphere, and the movement of the wind. How this latter acts, no one can say. The theory of retardation of the lower strata of the atmosphere near the earth's surface, as advanced by Prof. Stokes, of England, seems good for moderate winds, but it hardly holds in cases where the siren is heard from eighteen to twenty miles to windward during northeastern gales.

While the mariner may easily expect to hear the sound of the average fog-signal normally as to force and place, he should be prepared for occasional aberrations in audition. It is impossible, at this point in the investigations, which are still in progress, to say when, where, or how the phenomena will occur. But certain suggestions present themselves even now as worthy of consideration.

It seems that the mariner, in order to pick up the sound of the fog-signal most quickly, should, when approaching it from the windward, go aloft; and that when approaching it from the leeward, the nearer he can get to the surface of the water the sooner he will hear the sound.

It also appears that there are some things the mariner should not do. He should place no negative dependence on fog-signals; that is, he should not assume that he is out of hearing distance because he fails to hear the sound. He should not assume that, because he hears a fog-signal faintly, he is at a great distance from it. Neither should he assume that he is near it because he hears the sound plainly. He should not assume that he has reached a given point on his course because he hears the fog-signal with the same intensity that he did when formerly at that point. Neither should he assume that he has not reached this point because he fails to hear the fog-signal as loudly as before, or because he does not hear it at all.

He should not assume that the fog-signal has ceased sounding, because he fails to hear it even when within easy ear-shot. He should not assume that the aberrations of audibility which pertain to any one fog-signal pertain to any other fog-signal. He should not expect to hear

a fog-signal as well when the upper and lower currents of air run in different directions; that is, when his upper sails fill and his lower sails flap, or when his lower sails fill and his upper sails flap. He should not expect to hear the fog-signal so well when between him and it is a swiftly-flowing stream, especially when the tide and wind run in opposite directions. He should not expect to hear it well during a time of electric disturbance. He should not expect to hear a fog-signal well when the sound must reach him over land, as over a point or an island. And when there is a bluff behind the fog-signal he should be prepared for a regular interval in audition, such as might be produced could the sound ricochet from the trumpet as a ball may go from a cannon; that is, he might hear it two, four, six, eight, and ten miles from the signal, and lose it at one, three, five, seven, nine, and eleven miles, or at any other combination of distances, regular or irregular.

These deductions, some made by the first physicists of the age, and some drawn from the original investigations here noted, are submitted for consideration, rather than given as directions. They are assumed as good working hypotheses for use in further investigations. While it is claimed that they are correct as to the localities in which they were made, it seems proper to say that they have not been disproved by the practical mariners who have given them some personal consideration, and who have tried to carry them into general application. If Prof. Tyndall's finely phrased assertion that "we know both the reason and the range of their variations" may be taken as a prediction, the time may then come when the variations of audition may be corrected as we now correct the variations of the mariner's compass. Until then, it will be well for the mariner, when he does not get the expected sound of the fog-signal, or when he does not get it as his sailing directions teach him to expect it, to assume that he may not hear the warning that has been faithfully given, and then to heave his lead and resort to the other means used by the careful navigator to verify his position.

Bibliography.—The following authorities were consulted in the preparation of this paper:

"Documents relating to Lighthouses," vol. i; "Annual Reports of the Lighthouse Board"; Parliamentary Papers, 1864; Stevenson's "Lighthouse Illumination"; Tyndall on "Sound"; "Transactions of the Royal Scottish Society of Arts," vol. vi; "Coast Fog-Signals," a lecture at the Royal United Service Institution, by Alexander Beazeley; "Signaling by means of Sound," a lecture by E. Price Edwards; "Philosophical Society's Transactions," vol. xxvi; "Annales de Chimie et de Physique," tome xiii, and 1816, vol. i; "Wirkungen aus der Ferne"; "Encyclopædia Metropolitana"; Smithsonian Reports and Miscellaneous Collections; Henry on "Sound"; "Proceedings of the British Association," 1857; "Washington Philosophical Society's Transactions," vol. v; Dublin "Philosophical Magazine," vol. 1; "American Journal of Sciences," third series, vol. xi; "Reports of the British Association," xxiv, second part; "Phares Electriques et les Signaux Sonores," par MM. Sautter et Lemonnier; "Mémoire sur la Portée des Sons et sur les Caractères à attribuer aux Signaux Sonores," by Emile Allard.

SOUTH CAROLINA. State Government.—The following were the State officers during the year: For Governor, Hugh S. Thompson, Democrat; Lieutenant-Governor, John C. Sheppard; Secretary of State, James N. Lipscomb; Treasurer, J. P. Richardson; Comptroller-General, W. E. Stoney; Attorney-General, C. R. Miles; Superintendent of Public Instruction, Asbury Coward; Commissioner of Lands, A. P. Butler. Judiciary, Supreme Court: Chief-Justice, W. D. Simpson; Associate Justices, Henry McIver and Samuel McGowan. Railroad Commissioners, M. L. Bonham, L. J. Walker, and D. P. Duncan.

Legislative Session.—The Legislature convened on November 27th and adjourned December 23d. Among the acts that became laws are the following:

To limit the ages of pupils attending the free public schools.

To prohibit the sale of unsound meat.

To amend the law in regard to the registration of electors.

Providing the manner in which joint debtors may separately compound their indebtedness.

In relation to bonds heretofore executed, or which may hereafter be executed, to secure the payment of the phosphate royalty to the State.

To prevent the netting and trapping of partridges except by persons upon their own lands.

To require foreign co-operation assessment companies to comply with the insurance laws of the State, and to clearly define who shall be considered agents of insurance companies.

To declare the persons occupying offices in railroad stations agents of the corporations.

To declare void contracts for the sale of articles for future delivery made under certain circumstances.

To declare the law in reference to the liability of stockholders in corporations.

To secure the rights of persons having an interest in lands forfeited for taxes.

The supply bill levies a State tax of 5 mills, exclusive of the school-tax, for the support of the government for the fiscal year beginning Nov. 1, 1883. A tax for county purposes, of varying rate, is levied in each county. The Governor and Treasurer are authorized to borrow as much money as needed to meet the interest on the bonds, provided the amount shall not exceed $200,000.

An important act was that amending the railroad law. All those sections of the late law giving the commission power to fix rates are repealed. The railroads are to submit their rates to the commission for approval or modification before putting them into effect. If the commission approve, they go into effect almost immediately. If the commission disapprove and modify after hearing argument from the roads, and the roads will not accept the commission's modification, they have the right to appeal to the Circuit Judge of Richland county, or in his absence to some other Circuit Judge selected by the Chief Justice. The evidence taken before the commission is submitted to him, and he must decide the case within ten days, his decision to be final. The rates to be submitted to the commission by the roads include through and joint rates. The sections against discrimination remain in the law.

An act was passed for the organization of boards of health, and for the protection of the public health.

A constitutional amendment, to be submitted to the people in November, 1884, was adopted, which proposes to limit the amount of indebtedness that may

be contracted by the several counties to 8 per cent. of the assessed taxable value.

Finances.—At the date of the last report the debt of the State was $6,571,825. During the past fiscal year a few bonds were issued under special acts, and the sinking-fund commission purchased and canceled $41,207.67 of deficiency bonds, thus reducing the amount of the debt to $6,531,290.63. The Comptroller-General reports that very little progress has been made in funding the old bonds under the act of 1873 and its amendments. He estimates that it will require $348,235 to meet the ordinary expenses of the government during the fiscal year 1883–'84. To this amount must be added $391,878 for interest on the public debt, making $740,113. The proceeds of the phosphate royalty and the probable surplus in the treasury, estimated at $197,251, will reduce the amount to $542,862, which can be raised by a levy of four mills.

The amount of property returned for taxation in 1882 was $145,442,292. The amount returned for 1883 is:

Real estate	$87,131,401
Personal property	48,249,939
Railroad property	15,227,964
Total	$150,609,304

This is an increase in one year of $5,167,012.

The reports of the Secretary of State show each year a large increase in the amount of land held nominally by the commissioners of the sinking fund for non-payment of taxes.

Education.—There were enrolled in the public schools during the year, 74,157 white and 98,938 colored pupils, making a total of 173,095. This is an increase of 27,121 over the large enrollment for the preceding year. From a comparison of this enrollment with the data furnished by the census of 1880, it appears that over 73 per cent. of the white children, and nearly 55 per cent. of the colored children of the State, between the ages of six and sixteen years, were in attendance on the public schools, The average length of the school session was four months. The number of teachers employed was 3,494, of whom 2,165 were white and 1,329 were colored; number of schools in operation was 3,269, an increase of 86.

Claflin College, at Orangeburg, was founded in 1869, and is designed for the higher education of colored youths of both sexes. Since 1879 thirty have been graduated. Attached to the institution is a farm of 150 acres, which is cultivated chiefly by the labor of the students. A mechanical department has been added. The enrollment of students for the last year was 424, of whom 30 were in the collegiate department and 11 in the normal school.

The Military Academy had an enrollment on the 1st of October last of 155; of this number, 68, being two from each county, are maintained by the State. The beneficiary cadets are chosen by competitive examinations.

The South Carolina College is now thoroughly reorganized. Its buildings have been repaired, its grounds improved, and its several departments fairly equipped. Its teaching force consists of a president, seven professors, and three tutors. Arrangements have been made for post-graduate instruction. The catalogue of last year shows a total enrollment of 185.

State Institutions.—The Institution for the Education of the Deaf and Dumb and the Blind has 72 pupils, an increase of 10 in a year. A department for the colored has been established.

The number of patients in the Lunatic Asylum at the beginning of the last fiscal year was 550; the number admitted during the year was 239. At the close of the year the number was 603, of which 352 were white and 251 colored. The annual increase in the number of patients is from 50 to 60. The General Assembly has provided for the erection of an additional building at a cost not to exceed $50,000. It will be finished Oct. 1, 1884.

The number of convicts in the Penitentiary, Oct. 31, 1883, was 886, an increase of 72 in a year; 55 were white, and 841 colored. The convicts are employed under lease, or on public works, and are a source of revenue to the State. If all were returned to the prison, the cell-room would be greatly insufficient.

Miscellaneous.—The uncertainties and disasters attending the cultivation of rice, since 1860, have reduced the average crop of twenty-five years since, which was 120,000 to 150,000 tierces, to about 40,000 or 45,000 tierces. The planting now is restricted to such places as have escaped the action of time and war.

There are in the State 26 cotton-factories, which are either in full operation or expect to be within a very short time.

Toward the close of the year several persons were brought to trial in the United States Court, charged with violation of the congressional election acts. The juries, however, failed to convict.

SPAIN, a kingdom of southern Europe.

Government.—The reigning sovereign, Alfonso XII (son of the ex-Queen Isabel II), was born Nov. 28, 1857; proclaimed King of Spain at Madrid, Dec. 31, 1874; assumed the government Jan. 9, 1875; married, Jan. 23, 1878, Princess María de las Mercedes (youngest daughter of the Duke de Montpensier), who was born June 24, 1860, and died June 26, 1878; married, Nov. 29, 1879, the Archduchess María Christina of Austria (daughter of the late Archduke Charles Ferdinand of Austria), born July 21, 1858. Two daughters have been born of the second union.

By the terms of the Constitution of June 30, 1876, the executive power is vested in the King, and the legislative power in the Cortes "with the King." The King is inviolable, but his ministers are responsible, and by one of these all royal decrees must be countersigned. The King can not contract matrimony without the approval of the Cortes, nor can he marry any one excluded by law from the succession to the throne. In the event of the extinction of the

line of the legitimate descendants of Alfonso XII, the following order of succession shall be observed: first, his sisters; next, his aunt (the Infanta Luisa, second daughter of King Ferdinand VII), and her legitimate descendants; and, finally, his uncles (the brothers of Ferdinand VII). Should all the lines become extinct, "the nation will elect its monarch."

The Cortes is composed of a Senate and a Chamber of Deputies, equal in authority. The senators are of three classes: Senators "by their own right"; life-senators appointed by the Crown; and senators elected by the corporations of the state and by the largest taxpayers. Senators "by their own right" are the sons of the sovereign and of the heir-apparent to the Crown, who have attained their majority; grandees of Spain in their own right and having an annual income of not less than 60,000 pesetas ($12,000); captain-generals in the army; admirals; the Patriarch of the Indias and the archbishops; the presidents of the Council of State, of the Supreme Court, and of the Tribunal de Cuentas del reino. The number of senators of the first two classes together and of the third class cannot exceed 180. The elective senators must be renewed in one half every five years, and completely whenever the King dissolves that portion of the legislative bodies. The Chamber of Deputies is composed of members chosen for five years by the electoral colleges, in the proportion of one to every 50,000 inhabitants. A royal decree of Aug. 8, 1878, grants to Cuba the privilege of sending deputies to the Cortes in the proportion of one to every 40,000 free inhabitants paying taxes to the amount of not less than 125 pesetas ($25) annually. Deputies must be at least twenty-five years of age, and may be re-elected indefinitely. A deputy can not without resigning accept a pension, an office under the Government or in the royal household, or a decoration. Ministers are exempt from this law. Both houses sit every year. The King has the power to convoke, suspend, or dissolve them; but in the last case a new Cortes must meet within three months. The president and vice-president of the Senate are appointed by the Crown from among the senators only.

The Council of Ministers of Jan. 9, 1883, was composed as follows: President of the Council, Don Pedro Manuel Sagasta, appointed Feb. 8, 1881; Minister of Foreign Affairs, Don Antonio Aguilar, Marquis de la Vega de Armijo; Minister of Grace and Justice, Don V. Rimero Giron; Minister of Finance, Don J. Pelayo Cuesta; Minister of the Interior, Don Pio Gullon; Minister of War, Gen. A. Martinez Campos; Minister of Marine, Vice-Admiral R. R. Arias; Minister of Commerce and Agriculture, Don G. Gamazo; Minister of the Colonies, Don Gaspar Nuñez de Arce. This Cabinet was replaced in October by the following: President of the Council, Señor Posada Herrera; Minister of Foreign Affairs, Señor Ruíz Gomez; Minister of Grace and Justice, Señor Navarro Rodrigo; Minister of Finance, Señor Gallostra; Minister of the Interior, Señor Moret; Minister of War, Gen. Lopez Dominguez; Minister of Marine, ———; Minister of Commerce and Agriculture, Marquis Sardoal; Minister of the Colonies, Señor Suarez Inclan. The present Council of Ministers, formed on Jan. 18, 1884, is made up thus: President of the Council, Señor Cánovas del Castillo; Minister of Foreign Affairs, Señor J. de Elduayen; Minister of Grace and Justice, Señor Silvela; Minister of Finance, Señor Cos-Gayon; Minister of the Interior, Señor Romero y Robledo; Minister of War, Gen. Quesada y Matheus, Marquis de Miravalles; Minister of Marine, Admiral Topete y Carballo; Minister of Commerce and Agriculture, Señor Pidal y Mon; Minister of the Colonies, Count Tajada de Valdosera. The President of the Senate was the Marquis de la Habana; and the Vice-Presidents, Señor T. Montejo y Robledo, the Count de Torre Mata, the Duke de Tetuan, and Señor J. Moreno Benitez. The President of the Chamber of Deputies was Señor José Posada Herrera; and the Vice-Presidents, the Marquis de Sardoal, Señor T. Ruíz Capedon, the Marquis de Valdeterrazo, and Señor A. Linares Rivas.

The Spanish Envoy Extraordinary and Minister Plenipotentiary to the United States is Don Juan Valera (accredited in 1884). The United States Envoy Extraordinary and Minister Plenipotentiary to Spain is Hon. John W. Foster. The Spanish Consul-General at New York is Don M. S. Guanes.

Area and Population.—Spain, with an area (including the Balearic and the Canary islands) of 195,774 square miles, is divided into forty-nine provinces, and had, in June, 1883, according to official statistics, a population of 16,858,721, against 16,625,860 (inclusive of 12,170 inhabitants of the Spanish possessions in Northern Africa, not figuring in the returns for June, 1883), as given in the census reports for Dec. 31, 1877. The excess of females is commonly about 250,000. The mean density of the population is 85 per square mile: the maximum, 280, being in the province of Barcelona; and the minimum, 32, in the province of Ciudad Real. The number of births registered in 1882 was 493,817 ($6\frac{3}{10}$ per cent. illegitimate); that of deaths, 435,477: surplus, 58,340. The increase of population during the past hundred years has not exceeded 75 per cent. From 11,000,000 in 1820, the number of inhabitants had reached to about 13,698,000 in 1828; the census of 1846 showed it to be 12,168,774; and that of 1860, 15,658,531. By comparing these last figures with those of the census of Dec. 31, 1877, the annual rate of progress for the seventeen years is seen to have been ·35 per cent. approximately. The cities credited with upward of 50,000 inhabitants in the census returns of 1877 were: Madrid, 397,816;* Barcelona, 248,943; Va-

* The municipal government of the capital reported the

lencia, 143,861; Seville, 134,318; Malaga, 115,-882; Murcia, 91,805; Saragossa, 84,575; Granada, 76,005; Carthagena, 75,908; Cadiz, 65,-028; Jerez de la Frontera, 64,533; Palma, 58,224; Lorca, 52,934; Valladolid, 52,206.

The colonies, with their areas and populations (returns for 1877, 1880), are as follow:

COLONIES.	Area in square miles.	Population.
AMERICA.		
Cuba	43,220	1,521,684
Porto Rico	3,550	731,648
Total in America	46,770	2,253,332
ASIA.		
Philippine islands	65,100	5,559,020
Caroline islands and Palaos	905	36,000
Marian islands	420	8,665
Total in Asia	66,425	5,603,685
AFRICA (GUINEA).		
Fernando Po, Anabon, Corisco, Elobey, and territory of San Juan	483	31,106
Grand total	113,678	7,888,123

Religion.—The established religion of the kingdom is the Roman Catholic, whose clergy are, by the terms of the Constitution, to be maintained by the state. Protestant services must be absolutely private; the number of Protestant churches was reported at 53 in July, 1876. Of the 16,625,860 inhabitants in 1877, about 16,605,000 were Catholics; 6,220 Protestants; 9,640 Rationalists; 400 Jews; 300 Mohammedans; 200 Buddhists.

Education.—According to the census of 1846 but 1,221,001 persons of both sexes could read and write, and the total number able to read and not write was only 1,898,288. The census of 1860 showed that 3,129,921 (of whom 715,906 were females) could read, but not write; and that some 12,000,000 could neither read nor write. The number of primary schools throughout the kingdom in 1878 was given at 29,600, with an attendance of 1,611,-000. Secondary or intermediate instruction is given in 58 public schools, with an aggregate of 757 teachers and 13,881 pupils. The average annual expenditure, by the Government, for public instruction, does not exceed $1,250,000.

Finances.—The following tables exhibit the revenue and expenditure, as estimated in the budget for the year ending June 30, 1884:

REVENUE.	Pesetas.*
Direct taxes	289,295,000
Indirect taxes	152,829,000
Customs receipts	123,808,000
Registration, stamped paper, state monopolies, etc	251,290,000
Yield of national property	13,944,886
Treasury receipts	21,210,000
Total	802,376,886

EXPENDITURE.	Pesetas.
Civil list	9,800,000
Cortes	1,968,785
National debt	273,888,448
Indemnities	2,467,748
Pensions, etc	47,968,446
Presidency of the Council of Ministers	1,101,709
Ministry of Foreign Affairs	3,676,870
" Justice	54,780,217
" War	128,621,705
" Marine	33,595,222
" the Interior	46,106,065
" Commerce and Agriculture	44,989,717
" Finance	20,371,921
Expenses of collecting direct tax, and of stamp, etc., department	137,894,050
Total	801,640,898

Besides the foregoing estimates of the revenue and expenditure in ordinary, there was for the same year a budget extraordinary, comprising:

	Pesetas.
Revenue extraordinary	36,981,050
Expenditure extraordinary	30,327,896

Thus the aggregate estimates for the year stand thus:

REVENUE.	Pesetas.	Pesetas.
Ordinary	802,376,886	
Extraordinary	36,981,050	839,307,936
EXPENDITURE.		
Ordinary	801,640,898	
Extraordinary	30,327,896	831,967,794
Estimated surplus		7,340,142

The revenue extraordinary was calculated to be made up partly of the proceeds of sales of national property and partly of the proceeds of conversions of the debt.

Here follow the budget estimates for the years ending June 30, 1880, 1881, and 1882, respectively:

YEARS.	Revenue.	Expenditure.
	Pesetas.	Pesetas.
1879–'80	778,478,888	806,590,940
1880–'81	791,650,792	836,651,198
1881–'82	788,000,000	752,650,000

A balanced budget, the first for many years in Spain, was presented by Señor Camacho in 1881. But his flattering estimates were not realized, and a large deficit, as usual, resulted. Convinced that improvement was hopeless under the financial system followed by his predecessors, that minister introduced a series of reforms which in a short time placed the Spanish finances in a more satisfactory condition than ever before, and which, it was freely admitted even by the most decided opponents of the present Government, would permanently raise the standard of the national credit. A chief point of his policy was, to avoid past causes of deficiencies, and to attain this he proposed several measures of administrative economy, to be supplemented by new indirect taxes. But his most important scheme was that for the conversion of the whole national debt into a series of 4 per cents., with the exception of the 5 per cent. consolidated due to the United States, the 3 per cent. to Denmark,

population at 475,568 on Dec. 31, 1882. The number 500,900 stated for June, 1883, by the "Almanach de Gotha," is exaggerated.

* The peseta equals twenty cents.

and the 3 per cent. securities and guarantees. The entire capital of the debt was reduced from 12,800,000,000 pesetas, as estimated for Jan. 1, 1881, to 6,000,000,000. In accomplishing this reform, sanctioned by the law of Dec. 9, 1881, Señor Camacho, far from overlooking the rights of the foreign holders of the 2 per cent. stock, allowed them an additional 2 per cent. beyond the price of 50 fixed for the interior, thus compensating them for loss by exchange, and bringing up the value slightly in excess of the difference which existed in their favor at the time of emission. The capital of the debt as converted stood as follows:

	Pesetas.
Foreign debt, at 4 per cent	2,000,000,000
Redeemable home debt, at 4 per cent	1,750,000,000
Perpetual home debt, including the railway obligations, at 4 per cent	2,250,000,000
Total converted debt, at 4 per cent	6,000,000,000

Under the reform, the annual service of the debt would amount to 237,500,000 pesetas. Not included in the foregoing statement is the estimated amount of obligations incurred on behalf of Cuba, 250,000,000 pesetas.

Army.—The peninsular army of Spain is recruited by conscription or by enlistment, every male Spaniard having completed twenty years of age being liable to serve for a period of twelve years: three in the permanent army, three in the first, and six in the second reserve. Immunity from service may, however, be purchased for 1,500 pesetas. The period of service in the colonial army is eight years: four with the colors, and four in the reserve. The classification by arms is as follows:

INFANTRY.

60 line regiments of 2 battalions each.
20 battalions of light-infantry (*cazadores*).
140 reserve battalions.
140 depot battalions.

CAVALRY.

12 regiments of lancers.
10 regiments of cazadores.
2 regiments of hussars.
24 regiments of reserve.
24 depot squadrons.

ARTILLERY.

6 regiments and 1 battalion of foot.
8 regiments of horse.
3 regiments of mountain.
6 regiments of reserve.

PIONEERS.

5 regiments of 2 battalions each.

GUARDIA CIVIL (POLICE FORCE).

15 regiments, comprising 780 officers and 14,756 men.

COAST AND FRONTIER GUARDS.

92 companies of foot and 22 sections of horse.

By a decree, under date of July 18, 1883, the strength of the permanent army was fixed as follows for the year 1883–'84: For home service, 114,894, including 20,000 officers; for Cuba, 25,653; for Porto Rico, 3,302; for the Philippine islands, 7,870. The infantry corps in Cuba in April, 1883, was as follows: eight line regiments with two battalions of six companies each, eight battalions of light-infantry (cazadores) with a like number of companies, one battalion of public order, two sections of writers and orderlies, one disciplinary brigade, two regiments of militia, two independent battalions, the squadrons of Santa Catalina de Guaso, and two battalions of guerrillas. These troops were officered by 22 colonels, 41 lieutenant-colonels, 124 commandants, 33 captains, 490 first-lieutenants, and 481 second-lieutenants.

Toward the end of 1883, Gen. Lopez Dominguez, Minister of War of the Posada-Herrera Cabinet, introduced a bill into Congress raising the pay of all officers and non-commissioned officers, from sergeants to colonels, both inclusive. The opposition press estimated the increase to the budget from this cause at 12,000,000; and the newspapers favorable to the Government, at 3,000,000. The Minister of Finance, however, in reply to a question put to him in Congress, said that there would be no additional charge to the budget. The skepticism as to this last statement was great. A journalist suggested, as a possible explanation of Gen. Lopez Dominguez's plan, the proposed reduction of the strength of the permanent or active army by 20,000, in time of peace; the war budget being maintained at the same level as before the reduction, the saving might be applied to give officers sufficient pay to allow them to live. One thing was, however, stated as certain, namely, that no increase in the expenses of the War Department could be sanctioned by Congress, unless extraordinary resources were provided to meet the outlay. Spain, like Italy, spends 16 per cent. of her revenue on the army.

Navy.—The navy was, according to official reports, composed of the following craft in 1883:

	Guns.
FIRST CLASS.	
5 iron-clad frigates	60
12 screw-frigates	220
2 paddle-steamers	13
SECOND CLASS.	
5 paddle steamers	12
10 screw-steamers	34
2 screw-transports	4
THIRD CLASS.	
1 iron-clad monitor	3
1 floating battery	5
26 screw-steamers	37
48 screw-gunboats	57
1 paddle-gunboat	1
6 paddle steamers	12
1 screw-transport	2
4 sailing-vessels	..
124 Total	463

The aggregate horse-power of the foregoing craft was 27,986.

The navy was manned by 14,000 sailors, 7,033 marine infantry, and a considerable corps of marine artillery, and commanded by 1 admiral, 30 vice- and rear-admirals, and 644 subaltern officers of various grades.

Commerce.—The exports and imports of the kingdom, for the quinquennium 1878–'82, were respectively of the values expressed in the subjoined table:

YEARS.	Imports.	Exports.
	Pesetas.	Pesetas.
1878	541,183,774	479,878,207
1879	604,947,481	528,198,542
1880	712,846,313	612,968,179
1881	495,364,233*	603,090,160*
1882	614,790,798*	642,309,208*

In the official returns the values of the item "sundries" are commonly omitted from the tables of imports. Judging from the amount of import duties represented by that item in the customs returns for 1872, namely, 14,720,000 pesetas, the invoice value of the item they recorded must have been approximately 96,800,000, which sum, added to the 614,790,798 given in the foregoing table, would bring the total value of the imports for the year in question to 711,590,198.

The chief imports in 1882 were:

	Pesetas.
Cereals	94,500,000
Cotton and cotton fabrics	91,750,000
Other fabrics	61,750,000
Fermented liquors	44,250,000
Timber	35,500,000
Machinery	33,000,000
Sugar	27,000,000
Iron and ironwares	27,000,000
Coal	27,800,000
Animals and animal food	25,000,000
Drugs, dyes, and chemicals	23,000,000
Hides, skins, etc	16,200,000

The principal exports were:

	Pesetas.
Wine	297,000,000
Metals and minerals	190,000,000
Fruits	58,750,000
Olive-oil	12,750,000
Cork-wood and corks	13,200,000

The subjoined table exhibits the quantities of the various mineral products exported in the years 1881 and 1882:

	1881.	1882.
	Tons.	Tons.
Quicksilver	1,779	1,067
Copper	17,710	22,708
Iron	37,908	40,116
Metallic lead	105,809	116,132
Zinc-ore	30,604	25,582
Rio Tinto copper-ore	452,475	571,442
Iron-ore	3,137,083	4,021,761
Other ores	70,327	70,094
Totals	3,853,690	4,869,152

The values of the exports to and imports from Germany, Great Britain, France, Belgium, and the United States, for each of the years 1878 and 1882, were as follow:

COUNTRIES.	Exports.		Imports.	
	1878.	1882.	1878.	1882.
	Pesetas.	Pesetas.	Pesetas.	Pesetas.
Germany	6,750,000	6,100,000	12,800,000	82,500,000
Great Britain	155,000,000	237,250,000	141,250,000	170,750,000
France	120,000,000	310,000,000	173,250,000	.....
Belgium	7,125,000	7,000,000	24,750,000	32,500,000
United States	14,750,000	28,000,000	65,000,000	91,500,000

The foregoing figures, resulting from an analysis of the Spanish Gray-Book, show the exports to Great Britain to have increased 50 per cent., despite the falling off in wine and the low price of lead in 1882. The imports from England have practically remained stationary in the period here considered, although less than in 1872, 1873, 1874, and 1875, and showing no increase over 1877. The exports to France have increased 160 per cent.; and the imports 13 per cent. In the exports to Germany a slight decline is observed, while the increase in the imports therefrom is no less than 540 per cent.

The total value of the imports from Belgium has remained practically without change; but the imports show an increase of 31 per cent. A considerable development is noticeable in the general commerce with the United States, both the imports from and the exports to that country having increased about 50 per cent. There is a growing trade between Spain and the Scandinavian countries, with which the final negotiations for a commercial treaty were made early in 1883: the imports from Sweden and Norway are reported at the annual value of 18,000,000 pesetas, and the exports thereto at 3,000,000. Codfish is yearly imported from Norway into Spain to the amount of some 12,500,000 pesetas, or about 72 per cent. of the total annual Norwegian catch.

The total value of the exports from Spain for the month of January, 1883, amounted to 57,567,446, against 56,182,978 for the corresponding month in 1882.

The prohibitory import duty on refined petroleum in Spain secures a monopoly of that article to native refiners. At Ferrol, in the province of Corunna, a refinery yielding 1,000,000 gallons annually, has been in operation since 1880; and another of longer standing has proved very successful in the city of Corunna.

A proposed Anglo-Spanish commercial treaty has met with vigorous opposition in the industrial centres of Catalonia, while its conclusion has been anxiously desired elsewhere throughout the kingdom. (For details concerning a treaty of commerce with the United States, see page 649 of this volume.)

Navigation.—The shipping movements at the several ports of the kingdom were as follow for 1879, since which year no official returns of this class have been published:

FLAGS.	Entered.		Cleared.	
	Vessels.	Tons.	Vessels.	Tons.
Spanish	4,759	918,902	5,931	2,206,536
Foreign	7,166	2,695,561	8,296	3,985,225
Totals	11,925	3,614,463	14,227	6,191,761

The merchant navy of Spain, in April, 1883, comprised 1,674 sailing-craft representing a total of 186,164 tons; and 389 steamers, representing an aggregate tonnage of 304,192, and an aggregate of 93,923 horse-power.

Railways.—The total length of the railways of Spain on Jan. 1, 1883, was 4,942 miles; 1,075 have been built in the reign of King Alfonso.

* Official.

All the lines are the property of private companies, but subsidized by the state. The total amount of Government subventions to railways down to Dec. 31, 1880, was 650,000,000 pesetas. The aggregate receipts of the railways of Spain reached 139,218,525 pesetas, for 1880, against 61,313,275 pesetas working expenses.

Telegraphs.—The state telegraph lines in 1881 were of a total length of 10,417 miles. Of the aggregate of 3,978,804 dispatches, one fourth were international, and one fifth of the remainder, official.

Post-Office.—The number of letters and postal-cards that passed through the post-office in 1881 was 94,962,000; that of newspapers, 40,000,000; and that of packets of samples, 6,000,000.

Philippine Islands.—The chief export staples of this archipelago are sugar, hemp, tobacco, cigars, coffee, and dye-woods; the first representing alone about 60 per cent. of the total value of the export trade, which in 1881 amounted to $20,777,000, against $25,493,319 in 1880. The sugar shipped in 1881 was of the value of $12,403,993; and the hemp, raw and manufactured, $9,026,404.

The exports to Great Britain in 1882 were reported at the value of $11,535,585, of which $7,128,440 stood for unrefined sugar, and $4,150,165 for hemp. The imports from Great Britain in the same year were of the value of $8,963,975, about two thirds of which were for cotton fabrics.

Historical Sketch.—By the beginning of 1883 Socialism had extended its contagion to the Peninsula, and made its presence so sensibly felt as to divert public attention from the wearisome debates of the legislative halls. Anarchy had developed in the industrial centers and throughout Andalusia, but particularly in the provinces of Cadiz and Seville, where the tenebrious society of the *Mano negra* (Black Hand) was organized with tendencies little less alarming than those of the Nihilists of other parts of Europe. As many as one thousand members of the organization were detected and imprisoned in February; and documents found in their possession showed the adherents of the *Mano negra* to number eight or nine thousand scattered throughout the kingdom. Ramifications were discovered in Portugal also, and a band of seven Nihilists was seized in Oporto in March, one of these being the editor of a socialistic journal, "O Operario." Despite this singularly vitiated state of society, party wars and parliamentary dissensions continued with unabated intensity; and the Sagasta ministry had to struggle hard to maintain its entity between its allies of the left and its more moderate allies, and escape entanglement in the conflicts incessantly rising around it. Spain was not, indeed, free from political crises which might well become serious one day or other; but in May these and other concerns of a purely national character were for a moment forgotten, and Castilian courtesy was displayed in a succession of splendid *fêtes* in honor of their Majesties of Portugal, whose visit to their cousins of Spain, rather than a mere return for that of King Alfonso and Queen Christina to Lisbon the year previous, was intended as a seal of friendship between the two families and a renewal of cordial intimacy between the two countries. Not that the Utopian idea of an Iberic union had been revived; indeed, in exchanging toasts Dom Luiz and Don Alfonso hinted clearly that no alliance, however close, between the two nations should interfere with the "independence or autonomy of either." Such, indeed, is the only possible basis of an enduring union between Spain and Portugal, serving the latter as a shield against any oppressive influences that might threaten her, and bringing to the former an additional sense of security in the friendship of her neighbor.

Before the apprehensions aroused by the Socialistic movement already alluded to had been completely lulled, the country was thrown suddenly into consternation by the announcement that on the night of August 4th, some officers of the reserve, at the head of a handful of troops, had seized the citadel of Badajos, and that a revolutionary *junta* had proclaimed the republic. No military insurrection had taken place since the accession of the present sovereign, and the incident, although alarming, might have been regarded as purely local and temporary, had it not been immediately followed by an outburst in a regiment encamped near Logroño, on the banks of the Ebro, and tidings of disturbance in Barcelona. By prompt action on the part of the Minister of War, the manifestations of sedition were effectually repressed both in the north and the southwest; but in most minds a feeling of doubt remained as to whether they were not the symptoms prematurely developed of a general anti-monarchical agitation. Meantime the danger seemed to have entirely passed away; and Don Alfonso, in a tour through some of the provinces, received from the people as well as from the army unequivocal proofs of unshaken popularity. An immediate result of the trouble, however, was a painful conflict of opinion between the President of the Council and the liberal members of the Cabinet, on the one hand, and the Minister of War and his friends on the other, as to the expediency of a vigorous policy of precaution or one of conciliation. Señor Sagasta's views prevailed; the state of siege was discontinued in the centers of the recent tumults, and the constitutional guarantees, for a time suspended, were restored. The breach already existing between the liberal portion of the Cabinet, represented by the Premier, and the more conservative faction, represented by Gen. Martinez Campos, was now widened beyond remedy, and the inevitable crisis was only deferred until after the King's return from Germany. Recreation was the ostensible object of Don Alfonso's visit to the northern courts, at a time when the kingdom was in such an unsettled condition; but the inter-

ruption of friendly relations with France had like to be a conspicuous result of the tour. As the sovereign of a generous nation, allied besides to the imperial family of Austria and to most of the royal houses, he was cordially received beyond the Rhine, and honored by the Emperor of Germany with the title of colonel of a German regiment of cavalry. That distinction, granted also to the Prince of Wales and to most European princes, and hence devoid of political significance, was, nevertheless, in this instance, the cause of a distressing incident. On returning homeward, through France, the King was met at Paris by the jeers and hootings of an infuriated mob whom "demagogues of the press" had taught to regard the German title as an insult to the French nation. "The incident," says a French journalist, "is profoundly humiliating, not for the King of Spain, but for our Government, who did not protect their guest from insult. We can only except from this charge the President of the Council and the Minister of Foreign Affairs, who alone appear to have done their duty." Satisfaction was demanded and obtained by the Spanish Government. But, not content with this, the Marquis de la Vega y Armijo persistently demanded of France still further reparation, regarded as unnecessary by his colleague; and here was a new element of dissension in the Cabinet, which, though not the primary, proved to be the precipitating cause of the downfall of the Sagasta ministry. The primary cause dated from the reappearance of sedition in the army. The King now resolved upon a somewhat hazardous experiment, and charged Señor Posada-Herrera with the task of reconstituting the Cabinet, and on October 18th the new ministry was composed partly of the personal friends of Señor Posada, and partly of those of Marshal Serrano (the leader of the party now called the Dynastic Left), including among the latter Gen. Lopez Dominguez, one of the most distinguished officers of the army, and Señor Moret, one of the most brilliant orators of the Spanish Parliament. The members of the Dynastic Left came to power under the banner of Posada Herrera (one of the oldest statesmen of Spain, formerly a Moderate, later a minister in the Liberal Union with Gen. O'Donnell, and a conservative by instinct, education, and tradition), with a programme embracing, among others, such bold and ambitious reforms as the revision of the Constitution, universal suffrage, the re-establishment of civil marriage, and the reorganization of the army. It soon became apparent, however, that the ministry could neither live nor carry out its plans without the aid of the late Sagasta Cabinet, and that the majority so sincerely devoted to that statesman's policy and which had so long sustained him was far from being favorable to the revision of the Constitution of 1876 or the re-establishment of civil marriage. And as for the doctrines of free-trade, advocated by a few members of the Posada Cabinet, they are anything but popular in Spain, particularly in the more agitated regions of the north, such as Catalonia. While the Free-traders were planning a banquet in honor of the proposers of the preliminary arrangements for treaties of commerce with England, Italy, and Portugal, the Catalans were quietly working with other protectionists to dispose the Cortes unfavorably toward those preliminary arrangements. It was asserted that the Fusionist party would not accept universal suffrage, "an outcome of revolutions, which would bring soldiers to the polls, and enable the *caciques* to work their will by means of the ignorant masses." They were willing to accept the suffrage granted in 1882 for the election of provincial deputies, which included all males of Spanish birth over twenty-five years of age who could read and write and paid an almost nominal amount of taxes. Practically this suffrage would only treble the number of electors. Thus the change of ministry was productive of no improvement in the general situation; on the contrary, the nervous apprehensions revived by the Badajoz and Logroño incidents, after a slumber of eight years, had rather increased than diminished at the end of the year under the additional disquieting causes due to the prolonged political crisis in Government spheres. The newspapers announced that precautions had been taken in various parts to preserve order, and private letters from bankers and merchants to the capital confirmed the alarm felt among the respectable, peaceful classes at a course of events indicative of the return of elements of disorder believed to have disappeared for a long time, if not forever. A dissolution appeared inevitable. But with whom would the King make it? Sagasta was neither a Liberal nor a Conservative. Posada Herrera headed a Cabinet of the Left without belonging to the Left; he was expected to be conciliatory, but he was powerless either for conciliation or domination. The restoration of the Conservatives under Cánovas del Castillo seemed to be a more promising alternative, and the events of Jan. 18, 1884, confirmed its adoption.

Meanwhile the Carlists and Zorillists were at work, and, as it was said that although the King could reckon on his generals, it was not certain that he could reckon on the soldiers, the question was whether the latter "would raise the butt-ends of their muskets or the bayonets."

The marriage of the Infanta María de la Paz Juana de Borbon y Borbon, the King's sister, to the Prince Royal, Ferdinand Louis, of Bavaria, was celebrated on April 3, 1883, in Madrid.

The visit of Frederick William, of Prussia, to Madrid, in December, was unattended by any "change in the foreign policy of Spain."

STEPHENS, Alexander Hamilton, an American statesman, born in Taliaferro county, Georgia, Feb. 11, 1812; died in Atlanta, Ga., March

4, 1883. He lost his father when he was a mere boy; after which he lived with his uncle, till friends sent him to a classical academy; thence he went to the State University at Athens, known as Franklin College, where he was graduated in 1832. He was admitted to the bar in 1834. In 1836 he was elected to the State Assembly, though known to be opposed to nullification doctrines and vigilance committees. His health broke down the next year, and was never afterward vigorous. He was re-elected to the Legislature in 1837 and the three following years, but declined re-election in 1841; yet in the year following he was sent to the State Senate. Here he was active and industrious on the subject of internal improvements. He also drew up the minority report on the state of the republic, and gained greatly in reputation as an orator in the debates.

ALEXANDER HAMILTON STEPHENS.

Mr. Stephens was nominated for Congress in 1843, on the general ticket (there being no districts in Georgia as yet). He engaged ardently in the canvass, and gained his election by a large majority. He thereupon began service in the House of Representatives which lasted for sixteen years, and was then interrupted by his course as to secession for nearly as long a time. In 1844 he supported Henry Clay for President, but he urged the admission of Texas into the Union, thus taking ground against the Whigs. In February, 1847, he submitted a series of resolutions in relation to the Mexican War, which war he charged upon President Polk as a violation of the Constitution, undertaken for conquest. The House, however, refused a vote on the resolutions. He opposed the Clayton Compromise in 1848, despite opposition and denunciation at home and elsewhere. At this time he was murderously attacked by a man from his own State, and was nearly cut to pieces. In 1850 he opposed the growing secession sentiment in the South, which made headway because of the admission of California into the Union, and after an active canvass in Georgia he carried the day against the secessionists. The Georgia platform of 1850 was the work of the committee of which Mr. Stephens was a member. He opposed Gen. Taylor's policy, and supported the Kansas-Nebraska Act of 1854. The next year he took ground against the "Know-Nothing" movement, and was returned to Congress on this issue alone. Some of his noted speeches of this date may be named here—as, the eulogy on Andrew Pickens Butler; debate with Zollicoffer, of Tennessee, on slavery in the Territories; on the neutrality laws; on impeachment of Judge Watrous; and his last, on the admission of Oregon into the Union.

At the close of the Thirty-fifth Congress, Mr. Stephens declined being a candidate for re-election, and in a speech which he made at Augusta, July 2, 1859, he announced his retirement from public life. During the presidential canvass of 1860, however, he sustained Mr. Douglas. In November of that year he spoke out boldly against secession, and begged the South not to be the aggressor. "If the republic is to go down," said he, "let us be found to the last moment standing on the deck, with the Constitution of the United States waving over our heads. Let the fanatics of the North break the Constitution, if such is their fell purpose. Let the responsibility be upon them." But he reserved the right to "strike" if Lincoln should violate the Constitution, and professed himself to be perfectly subservient to his State and her will in all matters. He further proposed a convention to consider the question of secession, which convention met two months later (Jan. 16, 1861), at Milledgeville, and passed an ordinance of secession, though Mr. Stephens voted against it. His idea was with others (as he sets forth in his book on the "War between the States") that by seceding, or threatening to secede, the South could force better terms in the struggle against the free States and

for the continuance of slavery. He was a member of the Congress which met in Montgomery, Ala., Feb. 4, 1861, and was made Vice-President of the Confederacy. On March 21st he made a speech in Savannah, in which he announced himself as ready to do all that was to be done to break up the Union and secure a separation from the North and West. A month later he went to Virginia, and urged upon the convention in Richmond that the venerable mother of States should cast in her lot with the Confederacy. When in the progress of the war it became evident that the Confederacy was doomed, Mr. Stephens made various efforts to open negotiations looking toward peace with the national Government. He avows, in his book, that he desired to give up all opposition and return to peaceful submission, provided the United States would guarantee absolute State sovereignty. He was at the Hampton Roads conference, where President Lincoln and Secretary Seward met him and two others, R. M. T. Hunter and J. A. Campbell, on a gunboat, Feb. 3, 1865, and for four hours discussed the whole situation and the terms on which peace would be possible.

After Lee's surrender he returned to his home in Crawfordville, where he was arrested, May 11th, and sent to Fort Warren, in Boston harbor. After five months' imprisonment he was dismissed on parole, Oct. 11, 1865. In February of the next year he made a speech before the Legislature of Georgia, in which he favored the restoration policy of President Johnson. The same month he was elected to the United States Senate, but, as Georgia was not yet readmitted, he was not permitted to take his seat. He was elected to Congress in 1872, and again in 1874, 1876, and 1878.

In a speech, Feb. 12, 1878, on occasion of Congress receiving a painting of the signing of the Emancipation Proclamation by President Lincoln, Mr. Stephens took occasion to speak in high terms of Lincoln, and to say further that, in advocating secession in 1861, he did not suppose the dissolution of the Union would be permanent.

Mr. Stephens was nominated for Governor of Georgia in 1882, and after an active canvass, in which he participated, was elected, and entered upon his duties, but, after two months of service, he broke down in health. He was a man of large acquirements and varied reading, and was noted for his kindness and official aid to struggling young men.

A volume of speeches and letters by Mr. Stephens was published in 1867. His chief work, "A Constitutional View of the Late War between the States, its Causes, Character, and Results," appeared, in two volumes, in 1868–'70.

SUEZ CANAL, THE, a tidal ship-canal connecting the Mediterranean with the Red Sea by a cutting through the Isthmus of Suez, belonging to the Compagnie Universelle du Canal Maritime de Suez. In the acts of concession it was declared neutral, and free to all nations. It was opened for navigation Nov. 17, 1869. The canal has a total length of 160 kilometres, a uniform depth of 8 metres, and a width of from 58 to 100 metres at the surface of the water and 22 metres at the bottom. The company is incorporated in France and Egypt. Its president is Ferdinand de Lesseps.

Finances.—The capital outlay, including cost of enlargement, improvements, and loans, amounted at the end of 1878 to 479,175,683 francs. The capital was derived from the sale of shares, authorized to the amount of 200,000,000 francs; from a subvention of 84,000,000 furnished by the Khedive; from first-mortgage 5 per cent. bonds issued, to the amount of 100,000,000, at 60 per cent. and redeemable at par; from 120,000 thirty-year bonds of 125 francs, at 8 per cent. interest, issued in 1871 at the price of 100 francs; from various concessions, the product of which was about 30,000,000; and from sales of lands and other sources. In 1882 there were outstanding 397,438 of 500-franc shares; 301,848 obligations of 500 francs; 83,993 delegations of 500 francs each, bearing interest at 5 per cent.; 99,990 thirty-year bonds; 15,152 3 per cent. 500-franc bonds; and 400,000 bonds of 85 francs, bearing 5 per cent. interest, representing unpaid share coupons, besides 100,000 founders' shares which participate in the surplus profits.

Of the 397,438 shares, 176,602 originally belonged to the Khedive. They were purchased from him by the British Government in November, 1875. The sum paid was £3,976,582. The Khedive in 1869 assigned the dividends on these shares up to 1894 to the company, which issued 120,000 delegations entitling the holders to these dividends. The company's charter provides that, of the net profits, when more than sufficient to pay the 5 per cent. dividend on the shares, 71 per cent. shall go to the shareholders, 15 per cent. to the Egyptian Government, 10 per cent. to the holders of founders' shares, 2 per cent. to form an invalid fund for employés, and 2 per cent. to the managing directors. The founders' share of the surplus profits in 1881 was £98,721. The canal yielded a surplus profit in 1872 for the first time. It amounted to 2,071,279 francs, increased in rapid progression to 16,048,451 francs in 1877, and then fell off to 12,330,145 francs in 1880, but was much greater in the succeeding two years. The surplus dividend in 1881 paid to shareholders was 13·7 per cent. The receipts of the canal were 8,993,782 francs in 1871; 16,407,591 in 1872; 22.897,319 in 1873; 24,859,388 in 1874; 28,886,302 in 1875; 29,974,998 in 1876; 32,774,344 in 1877; 31,292,347 in 1878; 29,876,367 in 1879; 41,790,900 in 1880; 54,676,000 in 1881; and 60,504,878 in 1882. The total expenditure in 1880 was 28,811,803 francs; in 1881, 28,699,000.

Statistics.—The number and tonnage of vessels passing through the canal each year since 1875 were as follow:

YEAR.	Number.	Tonnage.
1875	1,494	2,940,708
1876	1,457	3,072,107
1877	1,668	3,418,949
1878	1,598	3,291,585
1879	1,477	3,236,942
1880	2,026	4,344,519
1881	2,727	5,794,401
1882	3,198	7,122,126

Somewhat more than three fourths of the shipping that passed through the canal in the ten years 1870–'79 belonged to Great Britain.

History.—M. de Lesseps, immediately after the accession of Said Pasha, laid before him the scheme for the canalization of the isthmus, and received, Nov. 30, 1854, a deed of concession from the Viceroy, conferring upon him authority and exclusive power to construct a canal. A second act of concession, signed Jan. 5, 1856, defined more fully the privileges and obligations of the company. The company was endowed with the absolute grant of a wide strip of land and the right to claim patents for any lands it should reclaim by irrigation-works, besides the use of forced labor and other privileges. The canal was to revert to the Government ninety-nine years after the date of completion. Lord Palmerston combated the project, and sought to have the charter rejected by the Sultan. He was opposed to the opening of a shorter route to the East under French auspices, and feared the establishment of a French colony on the isthmus. British shipping interests favored the longer and more profitable route. The English opposition stimulated the subscription of French capital. The Porte declared its opposition to the scheme, and, in consequence, a new arrangement was made between the company and the Egyptian Government, Jan. 30, 1866. All the lands of the company but about ninety yards on each side of the canal were retroceded, as well as the sweet-water canal from Cairo. The question of compensation for the revoked concessions was submitted to the arbitration of the Emperor Napoleon, in accordance with whose awards the Khedive paid the company 30,000,000 francs for the canceled land-grant, 10,000,000 for the sweet-water canal, 10,000,000 for land and buildings near Cairo, and 74,000,000 to compensate for the concession of forced labor. This settlement was the cause of the hypothecation of the Khedive's shares. The Government spent 31,000,000 in completing the sweet-water canal, and 25,000,000 in various missions to Europe and on the opening festivities. The charter, thus modified, was ratified by the Sultan, March 19, 1866. The canal was completed at a cost of about 200,000,000 francs for the work of construction, though the total disbursements, including improvements, were more than double that.

Military Operations in 1882.—Having secured the safety of the canal by means of assurances to Arabi Pasha that its neutrality would be respected, M. de Lesseps protested against its occupation by English troops in September, 1882. The British Government asserted that the declaration of neutrality did not apply, since it was at war with the *de facto* master of Egypt, and also because it had the authorization of the Khedive to suppress the rebellion. The concession documents recognize the power of the Khedive to exercise police control over the canal, and also the right to occupy every strategical point necessary for the defense of the country. The military operations brought in for the company about 2,000,000 francs. The British Government did not acknowledge the obligation to pay transit-dues for its military transports, but paid them voluntarily, in recognition of the service rendered by the canal in the suppression of the rebellion.

English Shipowners.—The English steamship companies, during the earlier diplomatic controversies over the canal, had forced the company to come to their terms regarding the measurement of tonnage, etc. The English protectorate over Egypt was assumed chiefly to preserve the neutrality and freedom of the canal. The ship-owners thought to force the company to concede advantages which they could not have obtained through diplomacy or by direct treaty with the managers, if they could not oust the French management altogether. The Beaconsfield Government had provided for the bringing of the canal ultimately under English direction by purchasing the Khedive's shares, constituting 44 per cent. of the capital stock. This menace to the prospects of the canal as a richly-paying investment, and the diversion of M. de Lesseps's attention to other enterprises, caused many shares to be turned out into the speculative market, so that an amount sufficient to make a majority, with the shares owned by the Government, could easily be acquired, if it was not already in the hands of English holders. Yet during the twenty-five years for which the Khedive had alienated the dividends of his shares, the voting proxies for those shares belonged to the holders of the delegation certificates, and for that period, therefore, M. de Lesseps and his friends were firmly seated in the control of the company.

The existence of political levers by which the English customers could bring pressure to bear on the company, led to constant friction and complaints of the company's management, of the officialism, the rigid regulations, etc. The chief object and main burden of the complaints, however, was to compel the company to reduce its tolls, fixed by statute at 10 francs a ton, and yield other pecuniary advantages. The ship-owners demanded that the company should divide with them its profits, which, under the statutes, would soon reach the normal rate of from 20 to 30 per cent., and that the transit dues be lowered to 6 francs a ton.

The Project of an Alternate Canal.—When the president and directors, in the interest of the stockholders, refused to accede to the pecuniary

sacrifices demanded, the scheme was broached of a second competing canal across the isthmus, constructed with English capital, and managed in the interest of English navigation. M. de Lesseps averred, in reply, his exclusive right. Projects of a ship-canal through Egypt by way of Cairo, and of one through the Jordan valley, failed to arouse practical interest. The Lesseps canal route, through the Bitter Lakes, follows a natural depression, and is the only practicable one across the isthmus, so that a second canal would have to be dug close beside the existing one.

Provisional Agreement of the English Government.—The English Government, having strong motives to avoid giving fresh cause for irritation to France, was the less likely to be influenced by the chicanes of the steamship-owners, animated by private commercial considerations. An agreement was reached between it and M. de Lesseps, whereby it secured valuable concessions to the ship-owners, and arranged for the enlargement or duplication of the canal, but recognized the monopoly of the Universal Company in the Suez route, and offered to advance the £8,000,000 required, at 3½ per cent. interest. A storm of reproaches assailed the Government for refraining from annulling the franchises of the company in the interest of English navigation, which furnished four fifths of the Suez traffic. As enormous pecuniary interests were involved, the subject was fiercely agitated; and the Government, in the face of this opposition, reluctantly withdrew the proposals, and suggested that M. de Lesseps and the ship-owners come to an agreement among themselves.

The Ship-owners' Agreement.—Such an agreement was finally arrived at in the beginning of December. The company promised to enlarge the canal or construct a second one, in accordance with the report of a commission of experts, one half of whom should be English engineers. In addition to the three directors nominated by the English Government, seven new English directors should be admitted; making ten Englishmen on the board to twenty-two Frenchmen. These English directors are to constitute an advisory board. The company will open an office and receive dues in London, and largely increase the number of English-speaking officials. The last sur-tax of 50 centimes disappears on Jan. 1, 1884, and pilotage dues July 1st. All expenses from groundings and other accidents, except collisions, or such as are due to negligence, are to be borne by the company. The company reduces the transit dues to 9½ francs after Jan. 1, 1885, and will divide half the profits in excess of 18 per cent. with the ship-owners, in addition to the abatement of 50 centimes. Each successive rise in the profits is to be divided in the same way, by reducing the transit dues for the next year but one, that is, from the 1st of January following the report, by the quotient of the total tonnage into the moiety of the increment of profit. Above 25 per cent., the whole excess will be divided, until the transit dues are reduced to 5 francs a ton. A reduction in the tolls for ships in ballast to 7½ francs had been already made, Oct. 1, 1883.

SUGAR. The importation of crude sugar during the earlier part of the year 1883 was lower than that of the corresponding months in 1882, on account of the proposed change in the duties. On June 1st the revised tariff came into force. The new rate is as follows:

All sugars not above No. 13 Dutch standard in color shall pay duty on their polariscopic test, as follows, viz.: All sugars not above No. 13 Dutch standard in color, all tank-bottoms, sirup of cane-juice or of beet-juice, melada, concentrated melada, concrete and concentrated molasses, testing by the polariscope not above 75 degrees, shall pay a duty of one and forty-hundredths cent per pound; and for every additional degree or fraction of a degree shown by the polariscopic test, they shall pay four-hundredths of a cent per pound additional. All sugars above No. 13 Dutch standard in color shall be classified by the Dutch standard of color, and pay duty as follows, namely: All sugar above No. 13 and not above No. 16 Dutch standard, two and seventy-five hundredths cents per pound. All sugar above No. 16 and not above No. 20 Dutch standard, three cents per pound. All sugars above No. 20 Dutch standard, three and fifty-hundredths cents per pound.

Molasses, testing not above 56 degrees by the polariscope, shall pay a duty of four cents per gallon; molasses testing above 56 degrees shall pay a duty of eight cents per gallon.

This act led to examinations by the polariscope, and laboratories were equipped at the sugar-importing ports. The method is quite simple: 18·024 grammes of the raw substance is brought into solution in a graduated 50-cubic centimetre flask. When it is dissolved, a few drops of lead acetate are added. Then the solution is increased to exactly 50 cubic centimetres by adding water, well shaken and filtered, and the filtrate is poured into the polariscope-tube.

The receipts of sugar during 1882 and 1883 were as follow:

IMPORTED FROM	1883.	1882.
	Tons.	Tons.
Cuba	425,481	502,410
British West India islands	45,738	23,710
Trinidad, P. S.	30,048	8,588
French West India islands	32,750	28,649
Porto Rico	46,526	34,693
St. Croix	902	1,537
Demerara	59,614	34,519
Central America	476	971
Balize	833	605
Surinam	1,637	1,944
Mexico	373	430
Hayti and San Domingo	11,759	12,017
Brazil	91,343	81,029
Peru	1,137	560
Europe	45,889	7,204
Philippine islands	109,051	75,634
Java	576	5,422
China	7,593	3,827
Singapore	595	364
Other countries	7,759	9,801
Foreign	920,090	884,155
Domestic	4,386	5,296
Total	924,476	889,451

Of this quantity there was received at—

	1883.	1882.
	Tons.	Tons.
New York	637,058	575,880
Boston	205,783	190,524
Philadelphia	78,066	69,506
Baltimore	3,619	4,091
Total	924,476	839,451

In addition to the foregoing, about 13,380 tons were received at Portland, New Haven, and other Eastern ports, mostly from Cuba and Porto Rico. At New Orleans and other Southern ports 3,886 tons were received from Cuba, etc. The total receipts of cane-sugar were 941,742 tons. The effect of the new tariff is felt in the increased receipts of sugars of a lower grade. Large quantities of these inferior sugars, coming both from the East and the West Indies, are now refined in this country; formerly they were sent to England. The result of this increased importation has been the lowering of the price; and the condition of the market during the year is described as dull and depressed. In January the price of fair refining sugar was 6 11/16 cents; this advanced to 7 9/16 cents in May, and has since steadily declined till it closed in December at 6½ cents.

The low prices and greater importation of raw sugar show an increased consumption for 1883 of 86,482 tons over that of 1882, which, on a basis of a population of 55,000,000, shows a per capita consumption of 47½ pounds against 45½ pounds for last year.

The crop of cane-sugar produced in the Southern States, during the season of 1882–'83, was the largest obtained since the war. In Louisiana the yield was 241,220 hogsheads, or 135,298 tons, which, compared with 122,982 hogsheads, or 71,373 tons, shows an increase of 118,238 hogsheads, or 63,925 tons, over last year. From the remaining Southern States the product was about 7,000 tons, making a total of 142,298 tons of domestic cane-sugar. The crop for the season of 1883–'84 is estimated at 240,000 hogsheads, which is lower than that of the preceding season. At San Francisco the importations of sugar have largely increased during the present year, as the following figures show:

RECEIVED FROM	1883.	1882.
	Pounds.	Pounds.
Sandwich Islands	108,842,000	97,920,670
Manila	20,598,562	1,528,156
China	4,157,892	940,946
Central America	1,982,296	1,670,437
Peru	600	.....
Mexico	43,417	.....
Total	130,574,267	102,060,209

Beet-Sugar.—The production of beet-sugar in this country has of late been very unsatisfactory. In 1880 there were six factories in active operation, while at present but one refinery is working, the Standard Sugar Manufacturing Company of Alvarado, Cal. The out-put of this establishment is given as 1,200,000 pounds for 1883, against 1,000,000 for the previous year. The difficulty experienced by those who have attempted to produce sugar from the beet in the East, has been the impossibility of inducing farmers to cultivate the beet-root at prices which the factories could afford to pay. The beet-crop in Europe was unusually large during 1882–'83, and the production is given by Licht as follows:

	Tons.
Germany	798,124
France	423,194
Austria	473,000
Russia	250,000
Belgium	82,723
Holland, etc.	35,000
Total	2,062,000

As the beet-sugar coming to this country is exported almost entirely through German ports, it is impossible to ascertain exactly where it comes from, but it is supposed to be the surplus stock of Austria and Germany. The following data show the receipts of beet-sugar at the port of New York, with their corresponding polariscopic test, for the last three months of 1883:

October	1,007 bags, testing 91 degrees.
November	16,733 bags, testing 93 degrees.
December	73,996 bags, testing 94 degrees.

The second product consisted of—

October	300 bags, testing 84 degrees.
November	7,701 bags, testing 87 degrees.
December	8,594 bags, testing 88 degrees.

Maple-Sugar.—It is impossible to estimate, except very roughly, the crop of maple-sugar, not only because no data are available concerning its manufacture, but also for the reason that large amounts of a spurious article are thrown on the market and openly sold as maple-sugar. More of this sugar is produced in Vermont than in any other section of the country, and during the past year the cold weather and heavy snows have materially decreased the out-put. In 1882 the total product, East and West, was estimated at 20,000 tons, but in 1883 not more than 18,500 tons were manufactured.

Starch-Sugar.—The manufacture of sugar and sirup from starch derived from corn is an industry of comparatively recent origin. In 1863, at Buffalo, F. W. Gessling and Lyman Bradley began the manufacture of this product, and in 1864 the first patent on this subject was issued for the process which they devised. At present the starch-sugar industry in the United States gives employment to 29 factories, having an estimated capital of $5,000,000, consuming about 40,000 bushels of corn a day, and producing grape-sugar and glucose to the annual value of nearly $10,000,000. The process of making starch-sugar consists, first, in separating the starch from the corn by soaking, grinding, straining, and settling; and second, in converting the starch into sugar by the action of dilute sulphuric acid, this acid being subsequently removed by the action of chalk. To make the solid "grape-sugar," the conversion is carried further than to make liquid "glu-

cose." After clarifying, the liquid is concentrated in vacuum-pans and is decolorized with bone-black. Starch-sugar is chiefly used in making table-sirup, in brewing beer as a substitute for malt, and in adulterating cane-sugar. It is also used to replace cane-sugar in confectionery, in canning fruits, in making fruit-jellies, and in cooking. Artificial honey is made with it, and so also is vinegar. In response to a request by the Commissioner of Internal Revenue, in regard to the status of glucose, the following statement was prepared by the National Academy of Sciences:

That the manufacture of sugar from starch is a long-established industry, scientifically valuable and commercially important.

That the processes which it employs at the present time are unobjectionable in their character, and leave the product uncontaminated.

That starch-sugar thus made and sent into commerce is of exceptional purity and uniformity of composition, and contains no injurious substances; and

That though having at best only about two thirds the sweetening power of cane-sugar, yet starch-sugar is in no way inferior to cane-sugar in healthfulness, there being no evidence before the committee that maize-starch sugar, either in its normal condition or fermented, has any deleterious effect upon the system, even when taken in large quantities.

Sorghum-Sugar.—Since 1878, considerable interest has been developed in the cultivation of sorghum (*Sorghum vulgare*) for the production of sugar. Largely through the influence exerted by the Chemist of the Agricultural Department at Washington, numerous experiments were made, all of which have tended to demonstrate the practicability of obtaining sugar from this source. Only estimates of the quantity annually produced are available. The following works are in active operation: The Yates County Sugar Company, at Penn Yan, N. Y.; the refineries at Rio Grande, N. J.; at Champaign, Ill.; at Stirling and at Hutchinson, Kan. At the last four the production during 1883 is said to have exceeded 200,000 pounds each. At Dundee, Kinsley, and Lawrence, Kan., are works whose out-put was about 10,000 pounds each; making a total of 830,000 pounds.

SURGERY. Antiseptics.—The whole practice of surgery has undergone a radical change during the past few years, because of the influence of the germ theory of disease. This theory—the theory of Pasteur—may be briefly stated as follows: "Wherever there is decomposition of an organic liquid or solid substance, such decomposition is caused by the physiological action of living beings, the germs of which pullulate in the air. Wherever a wound is made, air penetrates, and, with the air, germs, which have the power of developing themselves, even in the interior of blood-vessels, where the circulation carries them. Hence result inflammations of the lymphatics and of the veins, erysipelas, gangrene, etc. The more cutting the instrument with which the operations are performed, the more freely are the vessels divided, the better do the germs penetrate, the more easily do microphytes and microzoa cause complications, especially in loose and vascular tissues."

This theory—for it is still a theory—though it met with little favor in the country where it originated, was unhesitatingly adopted by a distinguished British surgeon, Mr. Lister, and by certain leading German surgeons—Volkmann, von Nussbaum, and König—and the practice based upon it has added a new word to surgical literature. "Listerism" is the practice of Mr. Lister, based upon his acceptance of Pasteur's theory of the origin of many surgical diseases. It consists in a systematic endeavor to prevent the access of air, and therefore of germs contained in the air, into wounds; and to destroy any germs which may have entered. Carbolic acid was the germicide upon which he placed his main reliance, and all wounds were immersed in it, and all operations were performed in its vapor instead of in the air. The most essential part of every operation became a spray-apparatus, which should surround the tissues to be operated upon with a vapor of carbolic acid. The surgeon himself, his assistants, the instruments used, everything which could possibly convey a microscopic germ into a wound, was thoroughly impregnated with the germicide, and after this the wound was dressed with an absolutely impermeable complicated dressing composed of many layers of different materials, each adding to the wished-for result—the avoidance of the entrance of air. When it became necessary to open a wound which had once been dressed, the same elaborate performance was repeated, and the part could only be inspected and examined under a covering of carbolic acid, either in the form of a solution or of spray. This is what is now understood by antiseptic surgery, by Listerism, and this it is that has to so great a degree modified the surgery of the day. The practical details of the treatment have been modified from time to time; other antiseptics, such as the bichloride of mercury, thymol, and eucalyptol, have been substituted for carbolic acid; the dressings have been changed in various ways, both by Mr. Lister and his followers, but the essential features of the treatment remain.

In this article we have to deal rather with the antiseptic treatment of wounds than with Pasteur's germ theory upon which it rests. Good practice may result from false theory, and Mr. Gamgee is not alone when he says: "That infection is always floating in the atmosphere, ready to settle, in the shape of impalpable and implacable germs, into any breach which may be made in the surface of a living body, is an idea which has never troubled me. The prescription, inspired by that idea, to rub strong carbolic acid into the innermost recesses of a compound fracture, to pursue and kill the germs; the warning that an antiseptic dressing may lose all its potency through a hole no bigger than a pin's point, in the investing Mackintosh, admitting countless germs; that a dress-

ing must be changed as soon as a little discharge permeates it, lest a septic channel be established for the ubiquitous and maleficent vibrios; that these will settle down, as a swarm from the air, on a granulating sore, if the spray be not kept in action while it is dressed—are (I say it with the sincerest respect) questionable propositions."

Irrespective of the theory upon which it was based, the results of the practice of antiseptic surgery were at once subjected to a rigorous comparison with the results of surgery without antiseptics, or with modified antiseptic treatment, and the discussion assumed considerable acrimony. For many months the various medical journals abounded in statistics of the treatment of wounds by the old and the new method. Mr. MacCormac reported forty-five operations for the division of various bones for the removal of deformity, thirty of which involved the knee-joint, and every one of which "recovered in the speediest, easiest, and safest manner possible." All his cases of compound fracture (fracture combined with a wound of the soft parts, allowing the entrance of air) recovered, except one, and those of the leg almost as though they had been simple; and so on through all the range of major surgical operations. He says:

Is there any other method—even that with the "simplest, safest, best of antiseptics," clean water—which will permit the surgeon to view a mass of dead blood lying in an open wound being transformed day by day before his eyes into living tissue? If this be true, and I suppose its truth will not be denied; if the great joints may be opened with absolute impunity by the surgeon's knife; if such formerly fatal injuries as gunshot wounds of the knee may be saved amid the difficulties of an army in the field; if ovariotomy be made more successful in the hands of experts, who operate on such cases by hundreds, and, what is to my thinking more important, the operation is rendered safer and more successful in the hands of other surgeons; if, in injuries of the head, in ordinary amputations and excisions, and operations of various kinds in compound fractures, not only is the risk of life diminished, but the recovery of the patient marked by a minimum of pain, fever, and suppuration—then a gain has been accomplished for surgery which it is scarcely possible to characterize; and I do not know which to admire the more, the scientific mind that has grasped a great principle and applied it, or the character of the man who has unswervingly pursued the object of his life, patiently perfecting, one by one, the means adapted to secure the end in view.

This may be regarded as a glowing tribute to Mr. Lister and to Pasteur by one who accepts entirely the practice of the former and the theory of the latter, and there are many surgeons who come within this class. There are many others, however, who hold modified views. For example, Mr. Holmes, arguing on the basis of 162 compound fractures treated to their conclusion, admits the great improvement observed in the results of injuries and operations since Mr. Lister began his attempts to secure the healing of wounds without putrefaction; but denies that this is due entirely to the method itself, since it is noted in the practice of those who repudiate Mr. Lister's teachings. He thinks that all wounds and injuries are now much more carefully treated than they were some years since; and the effect of such increased care must show itself in the practice of those who follow the old methods of treatment, as well as of those who have adopted the new system. The question is, whether the results of the antiseptic system are so decidedly superior to those of other methods of treatment as to show that it is the only system adapted for general use in hospitals. The fractures occurring in St. George's Hospital, on which Mr. Holmes's statistics were based, were treated by no one method to the exclusion of others, his idea having been to give all methods a fair trial, and thus form an unbiased judgment as to the worth of the antiseptic method in particular. The result was, that he formed a strong general impression that the antiseptic method is superior to the others, at any rate during the dangerous period following the injury, in which the occurrence of surgical fever is so common under ordinary treatment, and during which erysipelas, diffuse inflammation, sloughing, extensive suppuration, and general blood-poisoning are so common.

The views are those of the greater number of the surgeons of to-day. The best results obtained by the strictest antiseptic treatment may be matched in individual cases by as good results obtained by almost no treatment, but on the whole there has been a vast improvement since Mr. Lister began to teach the use of the spray, though this improvement is not entirely due to the spray. It is found equally in hospitals where antiseptic surgery as taught by Lister has never been practiced. True antiseptic surgery is much older than Mr. Lister, though this in no wise detracts from the debt of gratitude the world owes to him for recalling and insisting upon its real value. There are also other antiseptics more powerful than carbolic acid and impermeable dressings. In the words of Mr. Gamgee, "Life and putrefaction are not correlative, but antagonistic; and, in proportion as the surgeon utilizes and economizes the attributes of life, he will find himself independent of those changes which are inherent in decaying organic matter; whether it be in bagging wounds or boggy lands, Life is the great antiseptic. Preserve it, restore healthy function, control by rest, position, and pressure, nervous, vascular, and muscular action, so as to minimize the material for and the causes of discharge, carry this off as it is produced, by drainage-tubes and absorbent dressings, and the repair of injuries proceeds, like healthy nutrition, uninterruptedly and painlessly." In addition to these things, the antiseptic properties of the balsamic preparations, of turpentine and resinous gums, of alcohol, bark, and acids, have been utilized in wound-treatment for generations.

Thus, then, as a result of theory and practice, the surgery of to-day has reached a stage in

which the greatest possible care is given to the details of cleanliness, the prevention of putrefaction, the avoidance of any collection of pus in wounds by drainage, and to the securing of absolute rest to injured parts. The extent to which absolute cleanliness may be carried, and the good results of such care, are shown by the answer Volkmann makes to the question whether a surgeon or obstetrician is justified in making an autopsy. His answer is affirmative, but with many restrictions which would have seemed ridiculous a few years ago. It is evident that the infection-material which necessarily attaches to the surgeon in making an autopsy can do no good in a wound, and, therefore, a general surgeon should not come in contact with ulcers, wounds, sensitive mucous membranes, as those of the eye, or make vaginal examinations of pregnant or puerperal women, until a suitable time has elapsed since an autopsy, or until he has carefully disinfected himself and the instruments he employs. Since 1873 no diseases arising from accidental wound-poisoning have arisen in Volkmann's clinic. Since that time every nurse and assistant has submitted to careful disinfection before touching any breach of surface, no matter how trifling. All sounds used for exploration, and even scissors used for cutting sutures in wounds not treated antiseptically, are first disinfected. During this period the slighter forms of phlegmon have entirely ceased, and erysipelas is only rarely seen in its so-called spontaneous form. Visitors going through his wards and seeing recent wounds on the face treated by the open method, without any inflammatory action being visible, have remarked that the wards must be so entirely carbolized that all wounds heal readily; or that such cases show what good results may be obtained by the old method. Both conclusions are incorrect, for all the cases were treated on the antiseptic plan, the occlusion dressing alone being omitted. In every case, in every part of every operation, the causes of putrefaction are excluded. So thoroughly are his best nurses imbued with this idea that they disinfect the scissors with which they cut off the plaster bandage from a simple fracture. His own practice is to use a five-per-cent. solution of carbolic acid freely for washing. He does not consider it necessary to go to the extent of changing the linen; but, for operations and dressings, both he and his assistants put on white linen coats, and of these he often uses three or four for himself of a morning. He discards the old cloth operating-gowns, and does not approve of the water-proof sleeves and aprons. By this means he is enabled to deliver his course on operative surgery from six to eight o'clock in the morning, during which his hands are constantly in the blood and fluids of fresh and putrid subjects, and then occupy himself immediately with operations on the living and with fresh wounds, without carrying infection. He thinks it much better to disinfect a visitor and to dress him in a fresh, clean gown, than to trust to his assertion that for a certain number of days he has not been exposed to putrid influences. If it were not possible thus rapidly and yet thoroughly to purify one's self, it would be necessary to establish special stations and special assistants for all patients whose wounds were not entirely free from any septic character; for every surgeon is liable to be called from a foul wound or a septic inflammation to give immediate attention to some case particularly susceptible to septic influences. At first he felt great anxiety on this point; the bad cases were all isolated, and their dressings were postponed till the last, and, after finishing, his assistant took a bath and changed all his clothes. Now the only cases isolated are erysipelas, diphtheria, and the like. Where he has a long series of operations, he begins with those in which the danger of infection is greatest, and ends with those already suffering from septic disease. First he opens a peritonæum, then removes a loose body from the knee, then excises diseased joints, and finally comes to the acute progressive inflammation.

Drainage.—One of the most potent influences for evil in wounds is the accumulation of fluids in sacs or pouches of the tissues which may become putrid, and, by being absorbed into the circulation of the blood, produce general blood-poisoning and death. This difficulty has also been in a great measure overcome by the adoption of a system of drainage of wounds which has already been referred to. Small soft-rubber tubes, with numerous perforations in the end, are introduced into all the deeper parts of wounds, to allow of the constant escape of the fluids. When these do not answer the purpose, or can not be introduced into the necessary parts of the wound, the latter may be enlarged to permit of their introduction, or entirely new openings in the tissues may be made for no other purpose than to allow of the free escape of matter. For example, in a bad fracture of the thigh by a bullet entering from before, the patient must of necessity be placed upon his back, and all the fluids of the wound tend naturally to gravitate toward the back of the limb and to form pockets and pouches for themselves, where they remain and undergo putrefaction. In such a case it is not uncommon to make another opening in the back of the thigh, communicating with the fracture, for the sole purpose of discharge. The increased injury is trifling, and the good can not be estimated.

Under the influence of these two principles, perfect cleanliness and free drainage, almost a revolution has occurred in surgery within the past few years. Operations are performed successfully to-day which three years ago it was considered necessarily fatal to undertake. It is but a few years since a wound of the abdominal cavity was looked upon as almost sure to produce an inflammation of the delicate internal covering of that cavity and of the in-

testines—the peritonæum—and peritonitis was almost necessarily fatal. The peritonæum is now opened with impunity whenever occasion seems to justify it, and even as a means of diagnosis. If, after the opening is made, the diagnosis is confirmed, the operation, whatever it may be, is completed; if the diagnosis be not confirmed, or the condition be found to be incurable, the wound is cleansed and closed, and the patient is but little worse than if the abdomen had not been opened. This discovery of the comparative impunity with which the abdomen may be explored has opened to the range of the surgeon an entirely new field of work. All of the abdominal organs were a few years ago considered beyond the reach of surgical interference; now almost every one of them may be, and indeed has been, reached by the surgeon's knife and hand; and entirely new surgical operations, by which many lives have been saved, are the result, a few of which may be enumerated.

Operations upon the Alimentary Canal.—The number of successful operations which may be practiced for diseases of various parts of the alimentary canal has increased greatly. Beginning with the stomach, it is now not an unusual thing to open successfully the abdomen, seize the stomach, stitch it to the wall of the abdomen, open into it, and thus establish a means of conveying food into the system when the natural channel of the gullet has been occluded by disease at some point between the mouth and the stomach. In this way a person may be fed for any length of time, as has always been known; but the operation for opening the stomach, formerly so fatal, has now become comparatively successful.

By a very similar operation a cancer of the stomach may be removed, the opening caused by its removal closed with stitches, the organ returned to its place, and the abdomen closed, with a successful result. It is not an uncommon thing for the bowel to become closed at some part of its length by disease, or to become so twisted upon itself that its caliber shall be occluded, and the condition is necessarily fatal unless it be remedied. Only a few years ago these cases were treated medicinally, and those which did not recover, either spontaneously through the efforts of nature or as a result of general treatment, were lost. No surgeon dared to cut into a patient's abdomen, find out by actual exploration with the hand the exact nature of the obstruction, and endeavor to relieve it. These operations have now become exceedingly frequent. If, from the symptoms, the surgeon is led to believe that the bowel has become twisted upon itself, he opens the abdomen, first of all to discover if his opinion be correct; if correct, he gives what relief he can, and often directly saves a life. If the disease prove to be a stricture or contraction of some portion, he may be able to relieve the condition; if a cancer of the bowel be found, it may be cut out and the two ends above and below the disease stitched together; if the condition be found to be entirely unrelievable (for the diagnosis of these troubles is exceedingly difficult), the wound in the abdomen may be closed and the patient's chances of recovery be none the less.

M. Kœberlé recently reported the most successful case of excision of a portion of the intestine that has thus far been brought to the notice of the profession. The patient was a girl, aged twenty-two years, who had suffered for a long time with symptoms of intestinal obstruction, though the symptoms were not such as enabled him to arrive at any satisfactory conclusion as to the exact pathological condition. As the trouble was steadily increasing in severity, and the patient losing ground from suffering and malnutrition, an exploratory incision was made in the median line of the abdomen. Four cicatricial contractions were discovered in the small intestine, involving between them about two metres of the bowel, and the whole affected portion was consequently removed rather than retire from the operation and leave the patient to certain death. The result was a perfect success, and established several points which were before doubtful. It proves among other things that considerable portions of the small intestine may be removed without interfering to any appreciable extent with digestion, and that, practiced under certain conditions, the operation is to be considered as perfectly legitimate.

The operation of excision has also been applied to cancers of the large intestine, the sigmoid flexure, and the upper part of the rectum. This operation, to which the name of "colectomy" has been applied, has now assumed a definite place in surgery. It dates from the time of Reybard, of Lyons, who in 1833 removed a tumor the size of an orange from the sigmoid flexure of a man aged twenty-eight years. In this case the tumor could be felt through the abdominal wall, far down on the left side, and an incision was made over it. The tumor was drawn out through this wound and excised with three inches of the adjoining intestine. The two ends of the bowel were stitched together and replaced within the abdomen, and the abdominal wound was completely closed. There was considerable local trouble for a few days, but on the thirty-eighth day the wound had entirely healed, and natural passages were restored. The operation thus successfully inaugurated in 1833 was revived in 1877, with some modifications, especially as to the best point for making the incision, and as to the best way of disposing of the cut ends of the bowel after the removal of the disease; since which time seven additional cases have been reported. There seems to be little difference in the mortality, whether the ends of the divided intestine be sewed together, dropped into the abdominal cavity, and the wound in the abdomen closed, or the upper end be stitched to the surface of the body at

the seat of the incision for the formation of an artificial anus. The latter is the simpler procedure, and the lower segment of the bowel, being closed with a ligature, is dropped back into the abdomen and left to nature.

A bullet-wound of the intestines has always been considered one of the most fatal of injuries. The following account illustrates the difference between the surgery of to-day and that of a few years ago, when to interfere actively in any way with such a case would have been considered hardly less than criminal. A man is shot in the abdomen between the navel and the pubes. He is not seen by the surgeon until nine hours have passed, when the abdomen is found distended and painful, and a wound of the intestine is distinctly made out. Opening of the abdomen gives the only chance of saving the patient's life, and this is done with all the modern antiseptic precautions. The intestines are examined, and five perforations of the smaller bowel and two of the mesentery are discovered. The edges of all the wounds are vivified with the scissors and all are sewed up with silk, rendered antiseptic by soaking in a solution of phenol. The abdominal cavity is then thoroughly cleansed of blood and fecal matter, and a drainage-tube inserted into the lower end of the wound. The patient died three days after. At the autopsy it was found that all the wounds which had been sewed up were healing nicely, but one had escaped observation and had caused death.

Hernia.—The operation for the radical cure of hernia, or rupture, has attained considerable prominence. In many cases, by a comparatively trivial operation, which consists in the injection of a small quantity of an irritating fluid, like the tincture of white-oak bark, into the tissue over the canal through which the hernia descends, an amount of irritation is excited just sufficient to cause an adhesive inflammation in the canal, and thus close it. In this way a disease which a few years ago was only curable by a severe and dangerous surgical operation, and which on this account was simply treated with a truss, without any expectation of a cure, is now often radically cured. For this discovery, surgery is indebted to Dr. Heaton, of Boston, who practiced it successfully but secretly during his lifetime.

Hæmorrhoids.—The exceedingly common and troublesome disease known as hæmorrhoids, or piles, was formerly curable only by operations which removed the tumors, such as cutting them off with a knife, tying them off with a ligature, or destroying them with powerful caustics. This treatment also has been radically changed, and an equally efficient method of cure by injections has been discovered, which is almost painless, is devoid of danger, and free from the objections generally considered inseparable from a surgical operation.

Not only has the alimentary canal for its entire length thus been brought within the range of successful operative measures for the relief of incurable disease, but all the other organs contained within the abdominal cavity have each in their turn been reached by the hand of the surgeon.

Operations upon the Liver.—Abscess of the liver was formerly very fatal, owing to the unapproachable position of the pus, which, though beyond the reach of the surgeon, might at any moment be discharged into the abdominal cavity and cause death. A few years since it was found that a very fine hollow needle might be plunged into the liver with comparative safety; that to this an air-pump might be attached, and the abscess emptied of its contents by suction. This was in itself a great advance; but now, when an abscess is suspected, the needle is boldly plunged into the organ as a means of exploration. If pus is found, the region over the liver is cleansed with a disinfecting solution, the needle is allowed to remain as a guide, and an incision is made through the abdominal wall into the liver till the pus is reached. The cavity of the abscess is next washed out with a disinfectant, a large drainage-tube is inserted, and the wound is covered with an antiseptic dressing. This dressing is changed daily. Each time the tube is cleansed and replaced, and the abscess is forced in this way to close, as an abscess in any other part of the body would, by a gradual healing from the bottom.

Splenectomy.—This is another of the great operations of surgery which have become more prominent within the past few years. Though at first invariably fatal, it now numbers several successful cases. The operation is seldom undertaken except for the cure of a fatal disease known as leucocythæmia, which is marked by a great enlargement of the spleen, and by a great increase in the number of white corpuscles found in the blood. The change in the blood is supposed to depend upon the change in the spleen, and it is thought that if the spleen could be removed from the body the patient's life might possibly be saved. The operation is performed by opening the abdomen from near the end of the breast-bone to the pubes, drawing out the enlarged organ, which sometimes fills nearly the entire abdomen, placing a ligature around the vessels that supply it with blood, and cutting it loose. Although never but once successful in a case of leucocythæmia, it has often been done in cases of other disease with a favorable result.

Nephrotomy and Nephrectomy.—The number of cases in which surgeons have cut into the kidney, or have taken out the kidney, is now very considerable, while a few years ago the operation was a rarity. The kidney is subject to many incurable diseases, and especially to the formation of stone in its substance. Such a stone can be reached in no way except by the knife. An incision is made through the loin down to the diseased organ, and it is laid open. If the disease be calculus, this may be removed and the kidney left in its place; or, if the kid-

ney be found extensively diseased, it may itself be removed. Another affection until lately considered beyond the reach of help is what is known as floating kidney, in which the organ, on account of the laxity of its attachments, changes its position from one side of the abdomen to the other, and can easily be felt by the hands, first in one place, then in another. Such a condition is enough to render the sufferer's life of no value to himself, and justifies almost any attempts at relief. Up to a few years ago nearly all such attempts ended fatally. Now they are recognized as legitimate surgical operations, and are attended by a very fair percentage of success.

Extirpation of the Gall-Bladder.—Not at all an uncommon affection, and one which a few years since was entirely beyond relief, is the formation of gall-stones and their retention in the gall-bladder, where they cause an amount of suffering and inflammation often leading to death. In such cases the usual treatment now is to cut down upon the disease and not only to remove the calculus, but to remove the gall-bladder with it, and such operations are attended by exceedingly good results.

Rapid Lithotrity.—The old and well-known operation of crushing a stone in the bladder by seizing it with instruments especially designed for the purpose has been signally modified by Bigelow, of Boston. Formerly such an operation was only completed after several sittings, and was attended by great danger of inflammation from the presence of the sharp fragments resulting from the crushing. The operation is now done at a single sitting, the calculus is completely crushed, and all the fragments are removed before the patient leaves the table. This operation of "rapid lithotrity," as it is called, is not original with Dr. Bigelow, it having long been known though seldom practiced. But he has brought it again into popularity, and has added to the facility of its performance by the invention of a new instrument for drawing the fragments out of the bladder by the force of suction, after the crushing has been completed. The operation, as now practiced, constitutes one of the greatest advancements in the surgery of the bladder.

Drainage of Cavities in the Lungs.—To whom belongs the honor of first suggesting the bold plan of opening into cavities in the lungs of consumptive patients, and treating them on general surgical principles, is a question which will never be decided. Probably many men have considered the practicability of it without attempting it. Recently it has been accomplished with a considerable measure of success. The walls of such cavities are generally adherent to the chest-wall, and may be opened into without any immediate danger; and there would seem to be no reason in the nature of the case why, when such a cavity is laid open, cleaned out, drained, and properly dressed, it should not heal. The number of cases in which drainage has been resorted to is considerable, and, although only a few have resulted in the entire recovery of the patient, most of them have been sufficiently relieved to justify the operation. A soft drainage-tube is introduced into the bottom of the cavity, which is syringed out daily with carbolic acid, while the wound is dressed antiseptically.

Internal Illumination of the Body.—The desire to see within the body for the purposes of diagnosis is a very natural one to the surgeon, and with modern instruments much may be seen which formerly could only be guessed at. With the laryngoscope, for example, the whole action of the larynx, the production of sound, and morbid processes down to the bifurcation of the trachea, may be exposed to the eye; as with the ophthalmoscope the deeper parts of the eye may be examined. Milliot, in 1867, invented an instrument for lighting up the abdominal cavity so that its contents could be seen through the abdominal wall, but only used it on animals and dead bodies. His experiments led Lazarewitch to apply the same thing to gynæcology. He, however, failed to get light without at the same time getting an amount of heat which rendered the instrument both useless and dangerous. More recently Dr. Nietze, of Vienna, originated the idea of illuminating the interior of the bladder by passing into it a white-hot platinum wire, and the idea has been practically carried out by Leitner, the surgical-instrument maker of that city; hence the name Nietze-Leitner endoscope. The instrument consists of a platinum wire heated by electricity, and surrounded by a current of water to keep it from burning the tissues. Sir Henry Thompson, though speaking very cautiously, says there are some conditions the existence of which we sometimes suspect, but can not positively affirm to exist, whose presence may now be ascertained by this instrument. He refers to the identification of sacculated stone as the cause of existing and unrelieved symptoms; to the detection of growths removable by operation; and to the investigation of the nature of foreign bodies other than calculi which have become lodged there. He says he has recently seen a fatal case of vesical growth which might have been easily removed by operation; and in such a case the new endoscope may possibly render essential service.

Carbolic-acid Poisoning.—The almost universal use of carbolic acid as an antiseptic for the dressing of wounds has resulted in the knowledge of a peculiar form of poisoning. It has been proved that too much of the acid applied to an open sore may be absorbed into the circulation and cause death, with high temperature, a peculiar dark, smoky appearance of the urine, convulsions, and symptoms of heart-trouble. The peculiar diagnostic appearance of the urine is supposed to be due to an escape of the coloring-matter of the blood in the form of indicin. Carbolic acid, when taken into the circulation, is quickly eliminated by the kid-

neys, at the expense of a great deal of irritation and congestion of the organ. The poisonous effects of the acid may occur in a certain small number of cases, in spite of the best management, and in such cases is the result of a rare idiosyncrasy in those affected. Several interesting cases may be cited in proof of this statement. One in particular, from the practice of Dr. Whiteford, which shows the peculiar susceptibility possessed by the members of some families, and also the small quantity which will sometimes suffice to produce symptoms of poisoning. Two children of one family came under his care suffering from ringworm of the scalp. The treatment in both cases was a two-and-a-half-per-cent. solution of carbolic acid applied in the form of a water-dressing. In both, symptoms of poisoning occurred, in one case exceedingly severe, and coming on very shortly after the first application, while in the other the symptoms were delayed for two days and were altogether less severe. Removal of the acid removed all the symptoms in both cases. To satisfy his mind that the acid was really at fault, and that the symptoms were not merely a coincidence, he repeated the experiment twice in each case—once to the scalp, as before, and again to another part of the body—with the result of bringing back the urinary and gastric disturbances and the other symptoms of carbolic irritation. In none of these applications did the size of the portion of the skin in contact with the acid exceed that of a half-dollar. The result of the study of these cases has been to diminish the strength of the solutions of carbolic acid, as well as the frequency of their application, and also to substitute other substances which answer the purpose even better and are attended with less danger, such as eucalyptus globulus, acetate of aluminum, and bichloride of mercury.

Erysipelas.—The proof of the pathogenic nature of the micrococci of erysipelas has been given by Fehleisen, who has not only found them present in all cases of erysipelas examined during life, but also cultivated them, and with equal success inoculated the cultivated organisms in animals and in man. In small portions of skin excised from the diseased part in patients suffering with erysipelas he found in all cases numerous micrococci arranged in chains. They were especially abundant in the parts most recently affected; and here they were found most abundantly in the superficial layer of the corium and in the subcutaneous adipose tissue, filling the lymphatics and the lymph-spaces, while the rest of the tissue showed a cell-infiltration. Contrary to the older observers, they were never found in the blood-vessels. To prove that their presence was not merely accidental, Fehleisen cultivated some small excised portions of skin on gelatin, after carefully disinfecting the affected part, and succeeded, in the course of two months, in producing fourteen generations. The cultivated micrococci formed a whitish film, easily detached from the surface of the gelatin, and consisting entirely of the specific micrococcus. Nine rabbits were inoculated on the ears with the pure and cultivated organisms. In one the effect was merely a slight elevation of temperature; in all the others, after thirty-six to forty-eight hours, the temperature rose, and a characteristic erysipelatous rash appeared and gradually extended to the root of the ear, and thence spread to the head and neck. Within eight days the disease had run its course, and the animal recovered. Not one of the animals died. The light-red color of the affected part, the absence of œdema or suppuration, and the presence of the micrococci in the lymphatics of the affected part (seen in one case where the ear was amputated during the height of the disease), showed that the affection was true erysipelas, and not septicæmia.

More valuable still to show the etiological importance of the micrococci in erysipelas are the inoculations on man. (Such a proceeding was perfectly justifiable, when it is considered that many of the older surgeons have quoted cases showing the curative and beneficial effect of erysipelas when occurring in cases of a more serious nature, as cancer and lupus.) Fehleisen inoculated the pure and cultivated micrococci in seven patients, all suffering from severe and incurable disease. Six out of the seven cases showed, after a period of incubation varying from 15 to 60 hours, typical erysipelas, setting in with chills and high temperature, and running the characteristic course. In some the symptoms were very severe, in one there was threatening collapse, and one was complicated with pleurisy, which, however, soon subsided. As regards the therapeutic effect, the inoculations are of some interest. One case of lupus was almost entirely cured. In another case the cancerous tumors completely disappeared, and there had been no recurrence.

The effect of antiseptics on the vitality of the micrococci was also tried. Two substances only were experimented with—carbolic acid and corrosive sublimate. A three-per-cent. solution of the former stopped the growth of the micrococci after a contact of 45 seconds, while the same effect was produced in 15 seconds with a one-per-cent. solution of the corrosive sublimate. The list of diseases due to a specific organism is thus increased by one.

SWEDEN AND NORWAY, two kingdoms occupying the Scandinavian Peninsula in Northern Europe, united indissolubly, by the Riksact of 1815, in the person of the sovereign. Succession to the throne is hereditary in the house of Ponte Corvo. The throne is to be filled, in case of absolute vacancy, by the joint action of the two Parliaments. The common affairs of both kingdoms are decided upon by a Council of State.

The reigning King is Oscar II, born Jan. 21, 1829, grandson of Marshal Bernadotte, and the fourth sovereign of the line.

SWEDEN. Constitution.—The legislative pow-

ers are vested in the Diet, subject to the approval of the King, save in matters of political administration and taxation, the former of which is the exclusive province of the sovereign, and the latter that of the Diet. The Diet consists of two chambers, both elective. The franchise is limited by a property qualification.

Area and Population.—The area of Sweden is 170,979 square miles. The population in 1880 was 4,565,668. The estimated population on Dec. 31, 1882, was 4,579,115. The mean annual emigration in 1851–60 was 1,690; in 1861–70, 12,245; in 1871, 17,450; in 1872, 15,-915; in 1873, 13,580; in 1874, 7,791; in 1875, 9,727; in 1876, 9,418; in 1877, 7,610; in 1878, 9,032; in 1879, 17,637; in 1880, 42,109; in 1881, 45,992.

Commerce.—The imports increased from 82,-469,000 crowns, in 1860, to 288,060,000 in 1881; the exports from 86,496,000 to 223,196,-000 crowns (1 crown=26·8 cents). The imports from the United States in 1881 amounted to 9,820,000 crowns; exports to the United States, 355,000 crowns. The staple articles of export are timber, pig-iron, and grain. The leading imports are textile manufactures, coal, and colonial merchandise, the latter largely on the increase.

The length of railroads in operation in 1881 was 3,830 miles, of which the state owned 1,365 miles. The length of telegraph lines was 7,210 miles; of wires, 18,380 miles. The number of letters and journals carried by post in 1881 was 68,731,121.

The Army.—The army is composed of five classes of troops: men enlisted for three, four, and six years, forming the guards, hussars, artillery, and engineers; the Indelta, who are enlisted for life and cantoned on the estates of the land-owners; the Gothland militia, not liable to service outside of the island; the conscripted troops, who are called out annually for 15 days; and the volunteer rifle corps, in 1881 numbering 11,065 men. The total strength of the army in 1883 was 182,572 officers and men, with 836 guns and 6,649 horses.

Finances.—The ordinary receipts of the treasury are estimated in the budget for 1884 at 21,270,000 crowns; the balance carried over from former years, 4,100,000 crowns; net receipts of the Bank of Sweden, 1,300,000 crowns; extraordinary receipts, 52,340,000 crowns; total, 79,010,000 crowns. The ordinary expenditures are estimated at 59,185,665 crowns; extraordinary expenditures, 8,221,335 crowns; expenditures on account of the public debt, 10,240,036 crowns; balance carried over, 1,412,964 crowns; total, 79,010,000 crowns. Not only a large part of the army, but a great number of the ecclesiastical functionaries, are paid wholly or in part from the produce of certain public domains. The expenses of public instruction are mainly borne by the communes and provinces.

Politics and Legislation.—For many years past the Government has urged upon the Diet the necessity of army reorganization, without avail, until finally the question has been allowed to rest. The great land-owners, who control the vote of the First Chamber, are not in favor of a change, because the charge of the militia at present bears not so much on them as on the farming class; while the Land-men's party, who are in the majority in the popular house, are averse to the new system because it would greatly increase the burdens of the people. The financial returns for 1883 are favorable for the first time in a long period, and allow of a reduction in the coffee duty instead of the accustomed increase of taxation. In 1883 the stamp-duties were enhanced, and the tax on the manufacture of spirits increased.

NORWAY. Constitution.—The Grundlov of Nov. 4, 1814, vests the legislative power in the Storthing. Laws passed in three Storthings can not again be vetoed. The King has command of the army and navy, and makes all civil appointments. Since 1869 the sessions of the Storthing have been annual. All property-holders are electors. The members of the Storthing are elected indirectly every three years. After assembling they divide themselves into two bodies, three fourths forming the Odelsthing, which originates all bills; and the other fourth the Lagthing, which approves or rejects them.

The executive authority is exercised in the name of the King by a State Council, composed of two Ministers of State and at least seven councilors. Two councilors, who are changed annually, and one of the ministers, form a deputation residing near the person of the King, at Stockholm.

Area and Population.—The area of Norway is 122,869 square miles. The population in 1875 was 1,806,900, as compared with 1,701,365 in 1865. The town population in 1875 was 332,-398, showing an increase of 24 per cent., against 4 per cent. in the rural districts. Emigration has assumed considerable proportions of late years, the movement being almost exclusively to the United States. The number of emigrants in 1871 was 12,276; in 1872, 13,865; in 1873, 10,352; in 1874, 4,601; in 1875, 4,048; in 1876, 4,355; in 1877, 3,206; in 1878, 4,863; in 1879, 7,608; in 1880, 20,-212; in 1881, 25,976; in 1882, 28,804.

Commerce.—The average annual value of the imports in the five years, 1877–'81, was 161,-300,000 crowns (one crown = 26·8 cents); of the exports, 102,300,000 crowns. The imports in 1882 amounted to 160,475,000 crowns. The imports from the United States were valued at 2,569,000 crowns; the exports to the United States at 156,000 crowns.

The tonnage entered at Norwegian ports in 1881 was 1,976,462 tons, of which 1,306,960 were Norwegian. The merchant fleet, which in proportion to population is the largest in the world, comprised in 1881 7,977 sail-vessels, of 1,520,404 tons, against 1,007,908 in 1870, and

859 steamers, of 65,627 tons. The number of sailors was 60,064.

The Army.—The troops are raised mainly by conscription. The military forces are divided into line troops, the train, the militia, or Landvaern, the civic guards, and the Landstorm, or final levy. All men of the age of twenty-two are liable to conscription. They are called out for practice only about thirty days each year, for a period of from three to five years. The active force is limited to 750 officers and 18,000 men, which numbers can only be exceeded by special act of the Storthing.

Finances.—The receipts in 1882 amounted to 39,694,400 crowns from the ordinary revenue, and 8,687,900 crowns from extraordinary sources. The ordinary expenditures amounted to 39,350,300 crowns; the expenditures for railroad construction to 6,627,300 crowns.

The national debt on June 30, 1882, amounted to 106,124,000 crowns, the greater part bearing interest at 4½ per cent., the last loan, contracted in 1880, at 4 per cent. The funds, railroad stock, and other assets of the state, exceeded the debt.

Political Crisis.—The Storthing passed twice over the royal veto a bill to compel the ministers to be present at the sittings and to answer questions. The question raised by the Radical majority was that of the responsibility of the ministers, which had never before been brought to a practical issue. The King insisted on his appointing power and the absolute right to choose his own advisers, and therefore denied the jurisdiction of the Storthing over matters pertaining to the executive. The last Storthing was dissolved with an angry reproof. The new one contained a largely increased Radical majority. When the Storthing was opened in February, by the King in person, the deputies showed an unbending spirit. The King not only contests the principle of ministerial responsibility, but desires to alter the Constitution of the country, and, in fact, deprive the Norwegian people of the cherished right to make their own laws. He proposes to reconstitute the Lagthing and transform it into a real Senate, which will act as a counterpoise to the popular chamber. In this he has with him the Conservative party, which is composed of a portion of the townspeople, and largely of the German and other foreign population in the few large towns of Norway; while he is opposed by the entire farming population, which composes the Liberal party. The King has persisted in selecting his ministers from the Conservative party, and exasperated the people by imposing upon them a Government at variance with the sentiment of the country. The point directly at issue in the constitutional struggle between the King and the people is the absolute veto which he claims over the acts of the Legislature. The ultra-monarchic principles which he endeavors to import into the extremely liberal Norwegian Constitution have excited a strong reaction of feeling in favor of a republican form of government. The ministers still refused to occupy the seats placed for them in the legislative hall. In April, on the recommendation of the parliamentary committee, the Odelsthing decided to impeach the ministers and Councilors of State. Toward the close of the year the tribunal, composed of certain members of the Lagthing and of the nine judges of the Supreme Court, was constituted, and the recalcitrant ministers were summoned to stand their trial.

SWEDENBORGIANS. See NEW JERUSALEM CHURCH.

SWITZERLAND, a federal republic in central Europe. The legislative and executive authority of the confederacy is vested in the State Council, composed of 44 members, chosen by the twenty-two cantons, and the National Council or Nationalrath, chosen by direct election at the rate of one member for every 20,000 inhabitants. Every male citizen over twenty years of age is a voter. Clergymen are not eligible. Both Chambers united form the Federal Assembly. The executive authority is delegated to the Bundesrath, or Federal Council, consisting of seven members, chosen for three years by the Federal Assembly. The President and Vice-President of the Federal Council are elected by the Federal Assembly for one year, and are not eligible for the next consecutive term.

The President of the Confederation for 1883 was L. Ruchonnet; the Vice-President, Dr. E. Welti. The other members are Dr. K. Schenk, W. F. Hertenstein, B. Hammer, N. Droz, and Dr. A. Deucher.

Area and Population.—The area of Switzerland is 41,389 square kilometres, or 15,992 square miles. The population, Dec. 1, 1880, was 2,846,102, against 2,669,138 in 1870. The number of Protestants was 1,667,109, or 58·6 per cent.; of Catholics, 1,160,782, or 40·8 per cent. of the total population; there were 7,373 Israelites, and 10,838 of other creeds. The number of emigrants in 1882 was 10,896, of whom 10,047 settled in the United States.

Education.—The number of elementary schools in Switzerland is 4,586; the number of pupils 434,080 in 1883; of teachers, 5,840 males and 2,525 females. Of the pupils, 218,191 were boys and 215,889 girls. Switzerland expends for primary instruction about 15,000,000 francs a year, and for new school-buildings about 3,000,000.

Railroads, Posts, Telegraphs.—The Swiss railroads in 1882 had a total length of 2,571 kilometres, or 1,594 miles. The length of telegraph lines was 6,744 kilometres at the end of 1882; length of wires, 16,336 kilometres. The post-office in 1882 forwarded 84,069,486 letters and post-cards, of which 57,872,718 were internal and 26,196,768 international.

Finances.—The gross receipts of the Federal treasury in 1882 were 43,736,106 francs; expenditures, 43,247,797 francs; receipts com-

puted in the budget for 1883, 48,382,000 francs; expenditures, 48,674,000 francs; the net receipts of the cantons in 1876, 39,743,726 francs; of the Confederation, 17,239,733 francs; total, 56,983,459 francs; the net disbursements of the cantons, 44,103,073 francs; of the Confederation, 18,303,499 francs; total, 62,406,572 francs. The total assets of the Confederation, Jan. 1, 1883, were 54,664,510 francs, and the total debts 36,457,895 francs, showing a surplus of 18,206,615 francs. The total amount of the cantonal debts in 1877 was 252,793,373, and of the assets 456,267,202 francs, making a reproductive public fortune of 203,473,829 francs; or, including the surplus capital of the Confederation at that time, of 208,074,391 francs.

The Army.—The Federal army is composed of the regular army (Bundesauszug), to which all are liable between the ages of twenty and thirty-two, and the reserve (Landwehr), which comprises all the male citizens between 33 and 44 years of age. The effective of the regular army, Jan. 1, 1883, was 114,620; of the reserve, 90,259 men; total, 205,176.

Religious Conflict.—In 1873 Monsignor Mermillod, the most active champion of Ultramontane doctrines, and one of the most eloquent and successful preachers in Switzerland, persuaded the Pope to renew the attempts made under his predecessors to separate the united sees of Lausanne and Geneva, and erect Geneva into an independent bishopric. Abbé Mermillod had built up the flourishing church of Notre Dame, and since 1864 officiated as auxiliary for Geneva, with the title of a bishop *in partibus*. The Federal Government refused to sanction the creation of a separate diocese of Geneva. The Holy See then constituted it a Catholic vicariate, and appointed Monsignor Mermillod apostolic vicar. He at once installed himself in the post, and paid no attention to protestations of the Federal Council. The Council then forbade him to discharge any ecclesiastical functions, and upon his continued disobedience issued a decree of banishment, and had him conducted across the frontier. The Pope, in an encyclical note, Nov. 21, 1873, denounced the act as infamous, whereupon the Swiss Government, Dec. 12, 1873, broke off diplomatic intercourse with the Vatican.

The Old Catholic movement was then in its most flourishing stage, and the cantonal authorities endowed the schismatic branch with the diocesan subsidies, and attempted to establish it as the state church of the Catholic confession in 1876. This National Church, which obtained the official recognition of the Protestant legislators, dwindled away, while the strength and zeal of the Catholic community were stimulated. The animosities of the conflict between church and state subsided to a considerable extent in Switzerland, as in other lands, after the accession of Leo X. The reestablishment of the Catholic authorities in Geneva was a public necessity. The see of Lausanne and Geneva was left vacant by the death of the late incumbent in the beginning of 1883. The Pope first prepared the way for the restoration of normal conditions by abolishing the office of apostolic vicar, and then, in vindication of the course of the Curia, appointed Monsignor Mermillod Bishop of Lausanne and Geneva, announcing that he would reside in Freyburg, so as to avoid the revival of the old controversy. The appointment was at first greeted with violent remonstrances, but the Federal Government rescinded the decree of exile, and the authorities of Vaud, Neufchâtel, and Freyburg expressed themselves satisfied with the appointment, though Geneva still objected. He came back as the representative of a conciliatory policy, and surprised his old enemies by using his authority to repress the political activity of the clergy, and by favoring the liberal section of the church.

There were other difficulties between the civil and Catholic ecclesiastical authorities, in the diocese of Ticino and elsewhere. Yet far more exciting was the controversy over the suppression of the missionary meetings and expulsion of the English Salvationists, a question which agitated Switzerland for many months. (See SALVATION ARMY.)

T

TARIFF. See page 129 *et seq.*

TENNESSEE. State Government.—The following were the State officers during the year: Governor, William B. Bate, Democrat; Secretary of State, D. A. Nunn; Treasurer and Insurance Commissioner, Atha Thomas; Comptroller, P. P. Pickard; Attorney-General, B. J. Lea; Superintendent of Public Instruction, J. H. Paine; Commissioner of Agriculture, Statistics, and Mines, A. T. McWhirter; Register of Lands, W. S. Winbourn; Railroad Commissioners, J. H. Savage, G. W. Gondon, and J. A. Turley. Judiciary, Supreme Court: Chief-Justice, J. W. Deaderick; Associates, W. F. Cooper, T. J. Freeman, Robert McFarland, and Peter Turney.

Legislative Session.—The Legislature convened on January 1st, and adjourned on March 30th. Among the acts passed were the following:

To exempt from execution tobacco to the amount of 300 pounds, in the hands of the actual producers; to prevent the sale, loan, or gift of pistol-cartridges; to prohibit the sale of toy-pistols; to provide for a more efficient management of public schools, and taxing districts where there is an incorporated system of public schools; to protect employés and day-laborers of corporations and partnership firms against the insolvency of such corporations and firms; providing an improved system for the assessment and collection of taxes; to

provide for the infliction of the death-penalty in private; to prevent the owners of billiard, bagatelle, or pool tables permitting minors to play thereon; to regulate pool-selling, book-making, and combinations upon turf, trotting, and pacing races; to punish criminal abortions; to provide for the erection of an insane hospital in the eastern division of Tennessee; to empower municipal corporations and taxing districts to compromise and fund their indebtedness; to provide for the lease and management of the State Penitentiary; to define the measure of damages recoverable in case of the death of a person caused by the wrongful act, fault, or omission of another; to provide for the regulation of railroad companies and persons operating railroads; to prevent discrimination upon railroads, to provide for the punishment of the same, and to appoint a railroad commission; to protect contractors and laborers for work performed and materials furnished for railroads; to provide for the redemption of the notes of the Bank of Tennessee, and to protect the State therein.

Debt Question.—The act of 1882 providing for compromising and funding the bonded indebtedness of the State was repealed, and a new act was passed, based in its terms upon the Democratic platform of 1882. The most important portions of this law, which its friends hope will prove a final settlement of the much-vexed debt question, are the following:

Such part of the State debt proper as now bears interest at the rate of six per cent. per annum shall be funded by adding to the sum of the face of the existing bond the matured interest thereon, evidenced by the coupons thereto attached, including the coupons maturing the 1st day of July, 1883, and from the total sum of the face of the bonds and matured interest thereon, evidenced by the coupons attached, twenty-four per cent. will be deducted and the remainder funded in coupon bonds, bearing interest at the rate of six per cent. per annum. Such part of the State debt proper as now bears interest at the rate of five and one fourth per cent. per annum shall be funded by adding to the sum of the face of the existing bonds the matured interest thereon, including the coupons maturing the first day of July, 1883, evidenced by the coupons thereto attached; and; from the total sum of the face of the bonds and the accrued interest, twenty-one per cent. will be deducted and the remainder funded with coupon bonds bearing interest at the rate of five and one fourth per cent. per annnm. Such part of said State debt proper as now bears interest at the rate of five per cent. per annum shall be funded by adding to the sum of the face of the existing bond the matured interest thereon, including the coupons matured first day of July, 1883, evidenced by the coupons thereto attached, and from the total sum of the face of the bond and the accrued interest twenty per cent. will be deducted, and the remainder funded into coupon bonds bearing interest at the rate of five per cent. per annum:

Provided, however, That none of the bonds or parts of bonds heretofore issued under the previous funding acts for matured coupons shall be funded under this section as State debt proper bonds, but the same shall be funded at fifty cents on the dollar.

Be it further enacted, That such part of the before-recited public debt of the State as may have been funded under the act of 1882, shall be funded under this act upon the following basis: To the sum of the face of each of said bonds shall be added the coupons, now matured, thereto attached, including the coupons maturing the 1st day of July, 1883, and five sixths of such total amount of said bonds to be funded into coupon bonds, and said bonds to bear interest at the rate of three per cent. per annum, except such State debt proper bonds as are designated in section one of this act, and funded under the act of 1882, which shall be funded by adding to the face of each of said bonds the matured coupons thereto attached, including the coupons maturing the 1st day of July, 1883, to which shall be added 26⅔ per cent. on bonds which bore 6 per cent. when originally issued and funded into new coupon bonds bearing interest at the rate of 6 per cent. per annum, and to such part of said State debt proper bonds as bore interest at the rate of 5½ per cent. when originally issued shall be added 31⅓ per cent., and they shall be funded into new coupon bonds bearing interest at the rate of 5½ per cent. per annum, and to such part of said State debt proper bonds as bore interest at the rate of 5 per cent. when originally issued shall be added 33⅓ per cent., and they shall be funded into new coupon bonds bearing interest at the rate of 5 per cent. per annum.

Education.—The scholastic population of the year was 418,822 white and 142,624 colored; number of schools, 4,727 white, 1,384 colored; total 6,111, sixty-nine of which were under the control of city boards. White pupils enrolled, 261,297; colored, 65,934; total, 327,231; average daily attendance, white, 144,306; colored, 31,498—total, 175,804. Number of white male teachers employed, 3,762; female, 1,518; colored male, 1,031; colored female, 422—total, 6,733. The receipts of the year were $1,206,392. Expenditures (of which $795,483 was for teachers, and $57,804 for school-sites), $918,863; balance, $287,529.

The present school law, which was passed March 6, 1873, created a school fund, of $2,512,500, with interest at 6 per cent. per annum.

Finances.—The cash received by the Treasurer from Dec. 19, 1880, to Dec. 19, 1882, was $1,870,224.02, which, with $222,424.39 cash in the treasury, made a total cash account of $2,092.648.41. The disbursements from Dec. 19, 1880, to Dec. 19, 1882, were only $1,584,633.33, which left in the treasury a cash balance of $508,015.08. The total amount due by delinquents, Dec. 18, 1880, was $375,804.70; Dec. 18, 1882, $345,626.56, being a reduction of $30,178.14 in the two years. The total State tax for 1882 on taxable property assessed at 20 cents on the dollar was $443,849.42; in 1881, at 30 cents, it was $675,869.58, making a deficit in tax of $232,010.16.

The valuation of property in 1882 was as follows:

Value of land in acres	$146,657,883
Value of town lots	48,725,785
Value of other taxables	26,546,245
Total value of taxable property in the State	$221,929,813

Early in January the State Treasurer, M. T. Polk, fled from the State, and upon investigation it was found that he was a defaulter to the amount of $374,864.50.

Railroads.—The total length of railroads in the State is 2,035 miles; and their total taxable value, $31,197,200.

Congressional Districts.—The following are the congressional districts formed under a law of 1882, as amended in 1883:

1. Johnson, Carter, Sullivan, Washington, Unicoi, Hawkins, Greene, Hamblen, Hancock, Claiborne, Cocke, and Grainger counties.
2. Jefferson, Union, Sevier, Blount, Knox, Loudon, Roane, Anderson, Morgan, Campbell, and Scott.
3. Monroe, Polk, Bradley, Hamilton, Meigs, Rhea, Cumberland, James, McMinn, Bledsoe, Sequatchie, Marion, Grundy, Van Buren, White, and Warren.

4. Sumner, Wilson, Macon, Trousdale, Smith, De Kalb, Clay, Jackson, Putnam, Overton, Fentress, and Pickett.
5. Cannon, Coffee, Franklin, Lincoln, Moore, Marshall, Bedford, and Rutherford.
6. Davidson, Robertson, Cheatham, Montgomery, Stewart, Humphreys, and Houston.
7. Williamson, Maury, Giles, Lawrence, Wayne, Lewis, Hickman, and Dickson.
8. Henry, Benton, Perry, Decatur, Hardin, McNairy, Henderson, Madison, and Carroll.
9. Weakley, Gibson, Crockett, Haywood, Lauderdale, Dyer, Obion, and Lake.
10. Hardeman, Fayette, Shelby, and Tipton.

TENNEY, William Jewett, an American journalist, born in Newport, R. I., in 1814; died in Newark, N. J., Sept. 20, 1883. His father was the Rev. Dr. C. J. Tenney, pastor of the orthodox church in Newport, and his mother was Ruth Channing. Mr. Tenney was graduated at Yale College in 1832, and studied medicine in Boston, but turned his attention to law, which he studied in New Haven, Conn. After being admitted to the bar, Mr. Tenney opened an office in New York city; but soon after joined the editorial staff of the "Evening Post," in which connection he continued for two years. He completed Benton's "Abridgment of the Debates of Congress" (left unfinished at Senator Benton's death); edited the "Queens of England" (1852); was editor of "The Mining Magazine," monthly (1853); and was a contributor to Hunt's "Merchants' Magazine." He was also occupied with various other literary works, among which may be named "The Military and Naval History of the Rebellion in the United States" (New York, 1865). He was presiding judge of one of the criminal courts of Brooklyn, N. Y., for two terms, and during Mr. Buchanan's administration he was collector of the port at Elizabeth, N. J.

WILLIAM JEWETT TENNEY.

Thirty years ago Judge Tenney accepted a place in the establishment of D. Appleton & Co., New York. The "Annual Cyclopædia," issued by this house (of which the present volume is the twenty-third in consecutive order), was begun by him, and by him edited year by year, from its inception to his decease. He also did a large amount of other literary and critical work.

Judge Tenney was from time to time elected a freeholder, and was a member of the City Council of Elizabeth, N. J., for fourteen years. He prepared the plan for organizing the public-school system, and was president of the board. Important decisions also were constantly referred to him.

He was twice married. His second wife was a daughter of Orestes A. Brownson.

Judge Tenney was known to his friends as a man of great purity and excellence, as well as possessed of clear intellectual power. He left two sons and three daughters.

TEXAS. State Government. — The State officers during the year were the following: Governor, John Ireland, Democrat; Lieutenant-Governor, Marion Martin; Secretary of State, J. W. Baines; Treasurer, Frank R. Lubbock; Comptroller, W. J. Swain; Attorney-General, J. D. Templeton; Commissioner of Lands, W. C. Walsh; Commissioner of Insurance, H. P. Brewster; State Engineer, J. H. Britton. Judiciary, Supreme Court: Chief-Justice, Asa H. Willie; Associate Justices, John W. Stayton and Charles S. West.

Legislative Session.—The Legislature convened on January 9th, and adjourned on April 13th. On January 23d, Richard Coke, Democrat, was re-elected United States Senator without substantial opposition. Of the 700 bills introduced, about 150 became laws. In reviewing the work of the session, the Governor said:

By the act to protect the wool-growing industry of western Texas, a great enterprise is aided and encouraged. By the act organizing the judicial districts, the disposition of business in the courts will be greatly facilitated. The act to facilitate the collections of claims from the General Government on account of moneys expended in frontier defense, will enable Texas to reclaim money she should have had long since. The railroad bill is a measure designed on the one hand to satisfy a reasonable demand for a system of supervision sufficiently extensive and minute as regards the safe condition of road-beds and bridges,

and as regards fair dealing with shippers; and designed on the other hand to avoid the over-regulation that might work serious injury alike to the public and to legitimate railroad business. The law regulating the management of the penitentiaries was amended so as to forbid the leasing of the same, but authorizes the board to hire convicts to planters for a term of years if in their judgment the interests of the State will be served. The food-adulteration act provides that no person shall manufacture, offer for sale, or sell any article of food, wines, beers, fermented or distilled liquors or drugs, which is by him known to be adulterated, within the meaning of this act.

Four amendments to the Constitution were passed, and directed to be submitted to a vote of the people on the second Tuesday of August. These amendments follow: The first provides for the sale of lands set apart for schools. The second limits the amount of taxation by the State to 35 cents on $100, exclusive of taxes to pay the public debt and for free schools; and by counties and towns to 25 cents on $100, except for debts incurred before the amendment, or for permanent improvements. The third relates to taxes for a free-school fund. The fourth regulates the terms of the county courts. These were ratified by the following vote:

AMENDMENTS.	For.	Against.
First	29,734	21,060
Second	29,432	20,188
Third	30,558	20,237
Fourth	30,640	17,498

Congressional Districts.—The new congressional districts formed in 1882 are as follow:

1. Harris, Chambers, Liberty, Jefferson, Orange, Hardin, Waller, Montgomery, Grimes, Walker, Polk, Tyler, Jasper, Newton, San Jacinto, Brazos, Madison, Trinity, and Angelina counties.
2. Robertson, Leon, Houston, San Augustine, Sabine, Freestone, Anderson, Cherokee, Nacogdoches, and Henderson.
3. Panola, Harrison, Rusk, Gregg, Smith, Wood, Van Zandt, Upshur, Camp, Hunt, Shelby, and Rains.
4. Cass, Marion, Bowie, Red River, Morris, Titus, Franklin, Lamar, Delta, Fannin, and Hopkins.
5. Grayson, Collin, Cooke, Denton, Wise, Montague, Clay, Rockwall, Wichita, Wilbarger, Archer, and Baylor.
6. Ellis, Kaufman, Dallas, Tarrant, Hill, Johnson, and Bosque.
7. Galveston, Brazoria, Fort Bend, Wharton, Matagorda, Jackson, Calhoun, Victoria, Goliad, Refugio, Bee, San Patricio, Nueces, Duval, Cameron, Hidalgo, Starr, Zapata, Encinal, Webb, McMullen, La Salle, Dimmit, Aransas, Maverick, Zavalla, De Witt, and Frio.
8. Austin, Lee, Fayette, Colorado, Lavaca, Gonzales, Caldwell, Hays, Guadalupe, Wilson, Karnes, Live Oak, and Atascosa.
9. Washington, Burleson, Milam, Bell, Falls, McLennan, Limestone, and Navarro.
10. Travis, Comal, Blanco, Bexar, Medina, Bandera, Uvalde, Kinney, Edwards, Kerr, Kendall, Gillespie, Kimble, Burnet, Llano, Mason, Menard, Lampasas, McCulloch, Concho, Coleman, Runnels, Bastrop, Williamson, Crockett, and San Saba.
11. Parker, Hood, Somerville, Coryell, Hamilton, Brown, Comanche, Erath, Eastland, Palo Pinto, Stephens, Jack, Young, Throckmorton, Shackleford, Callahan, Taylor, Jones, Haskell, Knox, Nolan, Mitchell, Howard, Martin, Andrews, Gaines, Dawson, Borden, Scurry, Fisher, Stonewall, Kent, Garza, Lynn, Terry, Yoakum, Cochran, Hockley, Lubbock, Crosby, Dickens, King, Cottle, Motley, Floyd, Hale, Lamb, Bailey, Tom Green, Pecos, Presidio, Childress, Swisher, Deaf Smith, Donley, Gray, Oldham, Hutchinson, Lipscomb, Sherman, Hall, Castro, Randall, Collingsworth, Carson, Hartley, Roberts, Ochiltree, Dallam, Greer, Briscoe, Parmer, Armstrong, Wheeler, Potter, Moore, Hemphill, Hardeman, Hansford, and El Paso.

Finances.—The reduction of the State debt in the past four years has been $1,745,157.21. Of the bonds now outstanding, $1,712,200 bear 6 per cent., $1,254,000 are 7 per cents, $1,068,900 are 5 per cents, and $2,680 are 4 per cents. The school fund, university fund, and other State special funds hold $2,547,100 of these bonds, and Texas counties hold nearly half a million more, leaving only about $1,000,000 held by private parties. The following table shows the appropriations made by the 18th Legislature, used and to be used during the two years from March 1, 1883, to March 1, 1885, with corresponding appropriations by the 17th Legislature for the years beginning March 1, 1881, and ending March 1, 1883;

APPROPRIATIONS.	17th Legislature, two years.	18th Legislature, two years.
Executive Department	$58,820	$50,600
Department of State	84,170	82,570
Treasury Department	27,400	41,200
Comptroller's Department	96,400	119,700
General Land-Office	115,810	157,540
Insurance Bureau	19,400	38,000
Fish Commission	6,500	10,400
Adjutant-General's Office	148,400	161,700
Attorney-General's Office	22,870	28,620
Deaf and Dumb Asylum	55,850	130,872
Lunatic Asylum	278,440	536,960
Blind Asylum	88,815	71,820
Pensions	2,800	92,800
Board of Education	4,000	4,000
Sam Houston Institute	40,000	41,000
Prairie View Institute	21,737	25,600
Summer normal schools	8,000	12,000
Agricultural and Mechanical College	15,000	40,000
Survey University and school lands	4,500	5,000
Quarantine	76,000	105,000
Penitentiaries	413,500	210,500
Interest on public debt	625,455	488,124
Sinking fund	200,000	161,508
To pay university bonds	.....	242,050
To pay school bonds	.....	582,074
Capitol Commission	32,000	21,750
Miscellaneous	90,629	117,581
Judiciary	755,301	779,975
Deficiencies	468,817	82,689
State Cemetery	8,500	.....
Legislature, mileage, etc	140,000	120,000
To retire bonds	1,120,091	.....
State sewer	45,000	.....
Temporary Capitol	50,000	.....
Total	$5,107,775	$4,551,688

These amounts do not include the available school fund derived from taxation, either for the last term or the ensuing two years. The valuation for 1884 is estimated at $527,500,000.

Education.—Texas has more liberally endowed all the State educational institutions than any other State in the Union. This endowment amounts to nearly $100,000,000. To this may be added buildings at the Agricultural and Mechanical College, some $200,000, and college lands, $12,000; buildings and lands at Prairie View Normal School (for colored teachers),

$15,000; buildings, etc., at Sam Houston Normal School, $10,000; university grounds and buildings, $100,000, and school-houses in many of the counties belonging to the State. The scholastic census shows a population of about 310,500, to which is to be distributed about $1,375,000, or about $4.41 per capita, which will probably support a term of 5½ months. The change in the Constitution separates the school-tax from that for general purposes, and will permit an increased school revenue.

The State University was opened in the autumn. The State, by the last Constitution, gave a million acres of land to the institution, which was located in the pastoral regions of southwest Texas, and which will probably be leased and produce a handsome income. Also, at the last session of the Legislature, a further donation of a million acres of land was made, which is in Northwest Texas. The university permanent fund now comprises about $539,198.40 in bonds and 2,000,000 acres in lands.

The Agricultural and Mechanical College, endowed by act of Congress, has a permanent fund in State bonds of $209,000, and enjoys annual appropriations from the State treasury, supporting 93 State students. At the last session of the Legislature the sum of $40,000 was appropriated to equip the agricultural and mechanical departments.

The two permanent normal schools, one at Huntsville for white, and the other at Prairie View for colored students, are liberally supported. Not only are the students provided free tuition, but their board and lodging are paid for out of the State treasury. The State also, during one or two months in the summer, supports thirty-one normal schools for whites, and eleven for colored teachers. The average attendance is about 25 each, or about 1,000 teachers preparing for the public schools.

The Penitentiaries.—During the year the Legislature made a change from the system of leasing the penitentiaries and convicts so long in vogue. Under the new system contracts are made for working 1,500 of the 2,300 State convicts in the walls of the two penitentiaries.

Railroads.—The following figures relate to the close of 1883:

Total miles of railroad (including side-tracks)	6,465·24
Total miles of wood bridges	154·07
Total miles of combination bridges	2·50
Total miles of iron and steel bridges	5·50
Total number of locomotives	601
Total number of passenger-cars	269
Total number of baggage, express, and mail cars	111
Total number of freight-cars	13,242
Total miles of steel rails	2,243·20
Total miles of iron rails	4,222·04

There is little prospect of railway construction being resumed to any very great extent during 1884.

Crops and Shipments.—The following is an exhibit of the amount and value of State products—principally exports—for the year ending Aug. 31, 1883:

	Value.
Cotton, 1,513,810 bales	$75,665,500
Wool, 22,780,230 pounds	4,100,441
Hides, 13,312,746 pounds	1,464,402
Cattle, 703,642 head (including the drive)	16,846,950
Horses, 19,924 head	$480,60
Lumber and shingles	9,224,412
Grain and hay	5,674,815
Cotton-seed, cotton-seed cake and oil	8,423,516
Miscellaneous products	2,576,419
Sugar and molasses	642,210
Total	$119,906,296

THEOLOGICAL SCHOOLS OF THE UNITED STATES. The early New England colonists brought from the Old World their Puritan doctrines and customs. Many of the first preachers had received their training in the English universities. When the earliest colleges were founded, the prime object contemplated was the fitting of young men to preach the gospel, which accounts for the fact that the colleges on this continent are mostly denominational. No professors of divinity were appointed, nor were theological topics introduced into the courses of study; but the presidents of the colleges were expected to be able to give timely and special counsel to young men who might contemplate devoting themselves to the work of the ministry. Dr. Dwight, at Yale College, taught theology in his Sunday sermons, which were so arranged as to form a body of divinity. Rev. Charles Backus (born 1749, died 1803), while a pastor in Connecticut, educated nearly fifty theological students. The first actual experiment in public theological instruction was begun by the Rev. Dr. John M. Mason, of New York. Dr. Mason was graduated at Columbia College in 1789, went to Edinburgh to study theology, and in 1793 assumed the pastorate of the Reformed Church in New York city. He gathered ministerial candidates about him, and for some years gave them regular instruction in Greek and Hebrew exegesis, and kindred topics. At length he projected the plan of a theological seminary, which (the first on this continent) was established in New York in 1804, Dr. Mason being its professor of theology. In 1808 the Congregationalists organized a theological seminary at Andover, Mass., which was the first in the United States having a fully equipped faculty. In 1812 the Presbyterians founded a theological seminary at Princeton, N. J. In 1817 the Protestant Episcopal Church founded the General Theological Seminary in New York. Since the above dates such institutions have multiplied rapidly, and now all the larger denominations have well-organized theological schools.

The regular course of study in all the fully organized theological schools extends over a period of three years. A few of the seminaries have recently added a fourth year, for post-graduate study. The curriculum is designed for college graduates, but others are admitted if their previous studies enable them to pursue it profitably. Young men who have not enjoyed the benefits of liberal culture are

permitted to take a partial course, omitting the advanced studies, and more difficult and critical questions. Among the topics embraced in the regular course are the following: 1. Biblical interpretation, including study of the Hebrew language, exegesis of parts of the Greek Testament, and history of manuscripts. 2. Theology, including a systematic examination of the proofs of the existence of God, origin and inspiration of the Scriptures, and Jesus Christ, his deity, his humanity, his theanthropic personality, the atonement, etc. 3. Ecclesiastical history, including study of the ancient, mediæval, and modern Church, schisms, history and development of doctrines, the Reformation, Reformed Churches, etc. In addition to class recitations from textbooks, the student is expected to do much collateral reading, and to prepare essays upon the subjects gone over. The professors of the department also give instruction by lectures. 4. Homiletics, or a study of the best methods of preparing and delivering sermons. 5. Practical duties of the pastor. 6. Elocution. In addition to instruction in breathing and voice-culture, particular attention is given to the reading of Scripture and hymns, and to lectures on pulpit oratory. 7. Lectureships. During the past few years provision has been made in nearly all of the larger institutions for a course of lectures each year, by men who have been successful as ministers and of acknowledged eminence in scholarship, on subjects relating to preaching, and to the practical work of the pastor.

The following is a statistical summary, from the latest reports available, January 1, 1884, of the theological schools in the United States:

STATES.	Number of seminaries.	Number of professors.	Number of students.
Alabama	3	4	58
California	3	10	15
Colorado	1	4	1
Connecticut	3	27	157
Georgia	3	5	122
Illinois	16	55	464
Indiana	3	9	79
Iowa	5	11	66
Kansas	1	2	2
Kentucky	5	18	216
Louisiana	4	5	68
Maine	2	9	45
Maryland	5	31	334
Massachusetts	7	40	260
Michigan	2	6	49
Minnesota	3	28	66
Mississippi	2	4	23
Missouri	3	12	158
Nebraska	2	2	7
New Jersey	5	27	306
New York	14	62	627
North Carolina	5	10	68
Ohio	13	44	274
Pennsylvania	14	68	454
South Carolina	3	4	69
Tennessee	7	21	259
Texas	2	3	26
Virginia	4	16	171
Wisconsin	6	27	270
District of Columbia	2	6	75
Totals	148	565	4,784

DENOMINATION.	Seminaries.	Professors.	Students.
Baptist	19	67	968
Congregationalist	11	58	337
Christian	6	11	162
Free-will Baptist	2	7	51
Lutheran	19	49	476
Methodist	17	56	570
New Jerusalem	1	..*	6
Presbyterian	17	79	697
Protestant Episcopal	20	67	336
Reformed	5	18	96
Roman Catholic	21	121	1,008
Unitarian	2†	10†	43
Universalist	2	8	31
Others	6	19	78
Totals	148	565	4,784

TIME, STANDARD AND COSMOPOLITAN. The subject of fixing upon a uniform standard of time, with which the local time of all places may be compared, has been discussed for many years. The confusion which may arise from the existence of so many varying standards of time as now prevail at different meridians has long been recognized by sailors, who, when they have reached a point half-way around the earth from the one whence they started, are accustomed to add a day to their reckoning, or to subtract one, according as they have sailed east or west. The same difficulties exist, but lessened in a degree, in all the continents and in all single countries of considerable extent. They have not, however, forced themselves upon the attention of the general public as matters demanding practical treatment until since the general extension of the railroad systems and telegraph lines. They have been felt with peculiar force in the United States, because of the great longitudinal extent of the country, which causes a difference of four hours in time between the Atlantic and the Pacific States, and of the intricacies of the railroad connections. Previous to the adoption of the uniform standards, in November, 1883, the managers of the several railroads in the United States endeavored to conform to the local time of the most important or most central stations on their respective lines. Sometimes they used one standard to control the running of the trains on one part of their line, and another standard on another part. Sometimes they had to arrange for time-connections with other railroads running by standards differing from their own and from one another. It was computed that there were about 75 different standards controlling the moving of the trains in different parts of the country. A traveler going from Boston to Washington would have to set his watch five times in order to keep correct time while on the journey. From Boston to Providence he would be traveling on Boston time; from Providence to New London on Providence time; from New London to New York on New York time; from New York to Baltimore on Philadelphia time; and from Baltimore to Washington on Washington time, which is 24

* In several schools as well as this the number of teachers is not given in reports.

† Including Divinity at Harvard, marked "non-sectarian."

minutes slower than Boston time. Sometimes three or four standards of time competed with each other in the same city, as in Hartford, Conn., where some of the trains left on Boston time and others on New York time, while the local time was used in the city at large. The same embarrassment had already been felt, though on a much smaller scale, in England; and, to remedy it, on Jan. 13, 1848, all the clocks in the kingdom were set to conform to Greenwich time; and they have been regulated by that standard ever since.

The question of introducing a uniform system in the United States was discussed for several years before a practicable plan was found. It was agreed that the adoption of a single standard for the whole United States would be impracticable, because it would introduce too many and too great discrepancies between the time by the clock and the solar time, and would be repugnant to the habits and convenience of the people. Four standards were accordingly proposed, so adjusted as to be one hour apart, and to differ by exact hours from the time at Greenwich; the effect of which would be, that the only difference should be in the numbering of the hours, while the numbering of the minutes and seconds should be the same at all places using the standards as well as at all places using Greenwich time. The details of a plan embracing these principles were worked up by Mr. W. F. Allen, Secretary of the General and Southern Railway Time Conventions; and at the meetings of the time conventions, held in New York and Chicago in April, 1883, the following resolutions were adopted:

1. That all roads now using Boston, New York, Philadelphia, Baltimore, Toronto, Hamilton, or Washington time as standard, based upon meridians east of those points, or adjacent thereto, shall be governed by the 75th meridian or Eastern time (four minutes slower than New York time).

2. That all roads now using Columbus, Savannah, Atlanta, Cincinnati, Louisville, Indianapolis, Chicago, Jefferson City, St. Paul, or Kansas City time, or standards based upon meridians adjacent thereto, shall be run by the 90th meridian time, to be called Central time, one hour slower than Eastern time and nine minutes slower than Chicago time.

3. That west of the above-named section the roads shall be run by the 105th and the 120th meridian times, respectively, two and three hours slower than Eastern time.

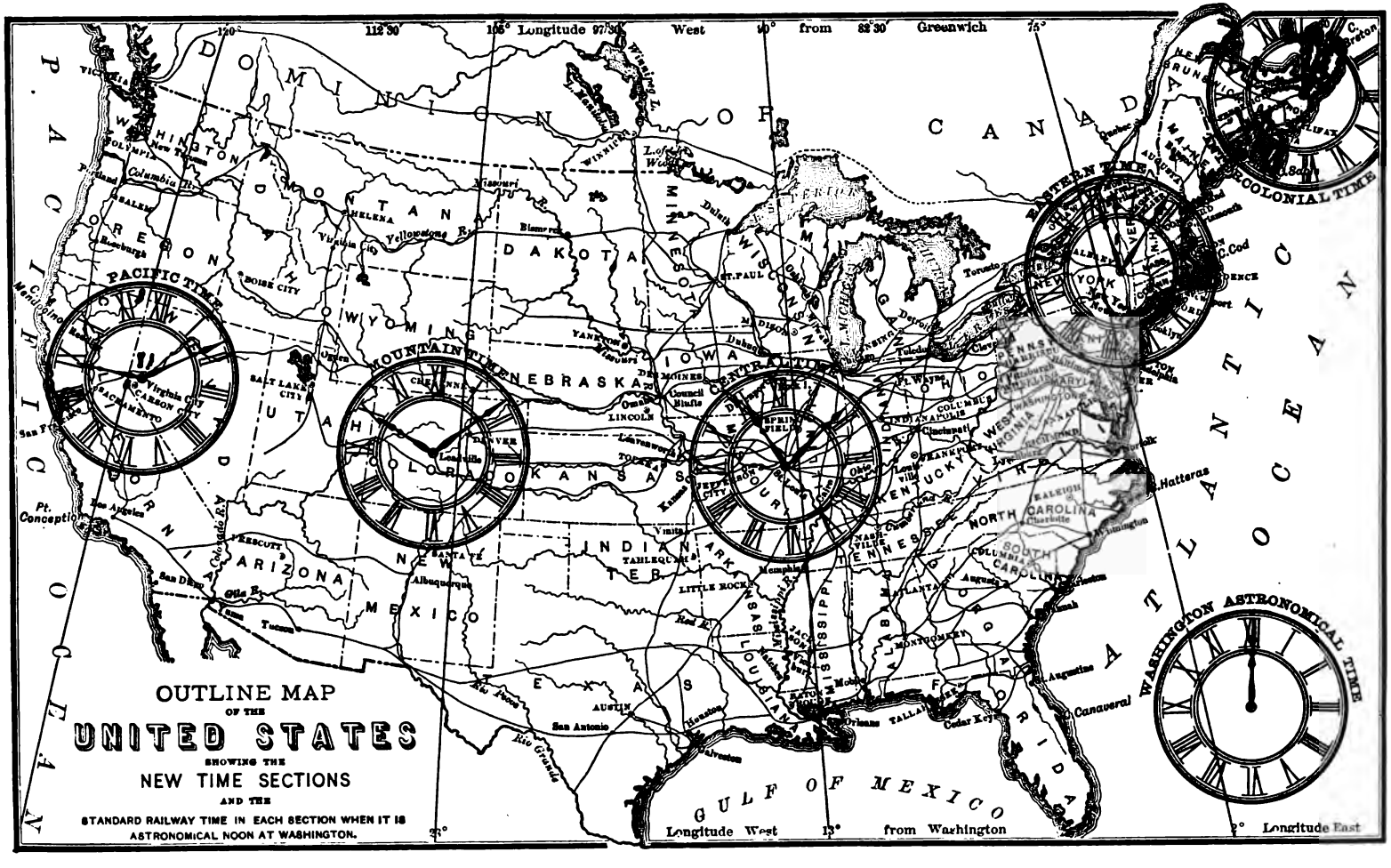
4. That all changes from one hour standard to another shall be made at the termini of roads or at the ends of divisions.

This scheme was received favorably by most of the railroads whose time would be regulated by that of the Eastern and Central meridians, and was put in operation by the principal railroads of the New England States on October 7th, and, with few exceptions, by those of the other States east of the Rocky mountain region on November 18th. The local time at most of the towns and cities was also made to conform to the new standards, the greatest alteration in clocks required to do so being about half an hour. The following table gives a general view of the relations in round minutes of the standard meridians to Greenwich and to the true local times of the places adopting them:

SECTION.	West of Greenwich.	Standard time, compared with true local times. + = Faster than. − = Slower than.	Designation of standard time.
		Min.	
Newfoundland	60°	29− St. Johns, N.F.	
New Brunswick		24+ St. John, N.B.	
Nova Scotia		14+ Halifax, N.S.	
Canada	75°	15− Quebec	Eastern time.
		18+ Toronto	
		16− Boston	
Maine to Florida		3− New York	
		8+ Washington	
		19+ Charleston	
Ohio to Alabama		45+ Montgomery	
		14+ Buffalo	
		30+ Detroit	
Lower Lakes		38+ Cincinnati	
Mississippi valley	90°	0+ New Orleans	Central time.
Missouri valley		1+ St. Louis	
Upper Lakes		12+ St. Paul	
Texas		18+ Kansas City	
		19+ Galveston	
		10− Chicago	
Rocky Mt. region	105°	0+ Denver	Rocky Mountain time.
		28+ Salt Lake City	
Pacific States	120°	12− San Diego	Pacific time.
British Columbia		10+ San Francisco	
		11+ Olympia	
		12+ Victoria	

The belt of country situated 7½° on either side of a standard meridian generally (with such exceptions as the peculiar relations of certain places may make it expedient to recognize) is expected to adopt the time of that meridian.

Related to the subject of Standard time for the United States is that of Cosmopolitan time, or the selection of a uniform meridian and standard of time for the whole world. A scheme for an international system of time-reckoning, embodying this principle, was proposed independently by the Hon. Sandford Fleming, Chancellor of Queen's University, Toronto, and Prof. Cleveland Abbe, of the United States Signal Service, and was presented by President Barnard, of Columbia College, to the International Association for the Reform and Codification of the Law of Nations, at its meeting in Cologne, in August, 1881. It recommended that 24 standard meridians be fixed upon, distant from each other 15° or one hour each in longitude, to which only the arbitrary local times kept at all places on the earth's surface shall be referred; that the prime meridian, by reference to which all the other hour meridians shall be determined, be that of 180° or twelve hours from the meridian of Greenwich; a meridian which passes near Behring strait and lies almost wholly on the ocean; that the diurnal change of count in the monthly calendar begin when it is midnight on this prime meridian, and take place for the several meridians successively; that the hour of the day at each place be reckoned by the standard meridian nearest to it in longitude, it being reckoned as twelve o'clock, noon, at the moment the mean


OUTLINE MAP
OF THE
UNITED STATES
SHOWING THE
NEW TIME SECTIONS
AND THE
STANDARD RAILWAY TIME IN EACH SECTION WHEN IT IS
ASTRONOMICAL NOON AT WASHINGTON.
Longitude West from Greenwich
Longitude West from Washington
Longitude East
PACIFIC TIME
MOUNTAIN TIME
CENTRAL TIME
EASTERN TIME
COLONIAL TIME
WASHINGTON ASTRONOMICAL TIME
DOMINION OF CANADA
PACIFIC OCEAN
ATLANTIC OCEAN
GULF OF MEXICO
WASHINGTON
OREGON
CALIFORNIA
NEVADA
IDAHO
MONTANA
WYOMING
UTAH
ARIZONA
NEW MEXICO
COLORADO
NEBRASKA
DAKOTA
KANSAS
INDIAN TER.
TEXAS
IOWA
MISSOURI
ARKANSAS
LOUISIANA
MISSISSIPPI
ALABAMA
GEORGIA
FLORIDA
TENNESSEE
KENTUCKY
OHIO
MICHIGAN
WISCONSIN
MINNESOTA
NORTH CAROLINA
SOUTH CAROLINA
VIRGINIA
PENNSYLVANIA
NEW YORK
Pt. Conception
Hatteras
Canaveral
C. Cod

sun passes such standard meridian, while the minute and second shall be the same at all times and for all places; that the hours of the day be numbered from one to twenty-four; that for special purposes, as with a view to promote exactness in chronology and to facilitate synchronous observations in science, the day and the time of the day, as determined by the prime meridian, be employed as a kind of universal time-reckoning, under the name of "Cosmopolitan Time," its hours to be denoted by distinct symbols (as by the letters of the alphabet), to distinguish them from the hours of local time. The Government of the United States recommended the calling of an international conference, to perfect some scheme of uniformity. The subject was again considered at the seventh General Conference of the International Geodetic Association, which met in Rome, Oct. 16, 1883, the United States being represented by Gen. Cutts, of the Coast Survey. A full report was made upon it by Prof. Hirsch, of the Observatory of Neufchâtel, Switzerland, and the Conference resolved that:

The unification of longitudes and of hours is desirable as well in the interest of the sciences as in that of navigation, of commerce, and of international communication; the utility, scientifically and practically, of this reform far surpasses the sacrifices in labor and changes required of a minority of civilized countries. It ought, then, to be recommended to the governments of all countries interested, to be adopted and consecrated by an international convention.

Notwithstanding the great advantages which the general introduction of the decimal division of the quadrant for geographic and geodetic co-ordination, and the corresponding expressions for time, is destined to realize, scientifically and practically, reasons eminently sound appear to justify the passing by the consideration thereof in the great measure of unification proposed in the first resolution. Meanwhile, to satisfy at the same time important scientific considerations, the Conference recommends on this occasion the extension, in multiplying and perfecting the necessary tables, of the application of the decimal division of the quadrant, at least for the great numerical calculations for which it presents incontestable advantages, even if it be desired to preserve the sexagesimal division for observations, maps, navigation, etc.

This Conference proposes to the governments to choose as initial meridian that of Greenwich, defined by the middle of the pillars of the meridian instrument of the Observatory of Greenwich, because this meridian fulfills, as point of departure of longitudes, all the conditions required by science, and because, being already the most extensively used, it offers better prospects of being generally adopted. The longitude should be reckoned from the meridian of Greenwich, in the sole direction of from west to east.

This Conference recognizes the utility for certain wants of science, and for the service of important lines of communication, adopting a universal hour, to be used together with the local or national time, which will necessarily continue to be used in ordinary life.

This Conference recommends, as the point of departure of the universal hour and of cosmopolitan date, the mean noon of Greenwich, which coincides with the instant of midnight or with the beginning of the civil day, under the meridian situated at 12 hours or 180° from Greenwich, the universal hours to be counted from zero to 24.

It is desirable that those countries which, in order to adhere to the unification of longitudes and of hours, have to change their meridian, should introduce the new system of longitudes as early as possible in their official ephemerides and almanacs, in their geodetic, topographic, and hydrographic works, and into their new maps. It would be advisable, in new editions of old maps, to inscribe alongside the numbers of the old meridian what it would be according to the new system. Then the new system should be introduced without delay into the schools.

The Conference hopes that, if the whole world is agreed upon the unification of longitudes and hours in accepting the Greenwich meridian as the point of departure, Great Britain will find in this fact an additional motive to take on her side new steps in favor of the unification of weights and measures, by joining the Metrical Convention of May 20, 1875.

These resolutions will be made known to the governments and recommended to their favorable consideration, with an expression of the wish of this Conference that an international convention, consecrating the unification of longitudes and hours, may be concluded as early as possible by means of a special conference.

TONQUIN, the most populous province of the kingdom of Anam, with which it was incorporated in 1802. Anam is an absolute monarchy. The total area is about 440,500 square kilometres; the total population about 21,000,000, exclusive of the tributary states of the Laos and the independent Moi tribes. The residence of the King is Hué, which has 50,000 inhabitants. Tonquin has a population of 15,000,000. The capital is Hanoi, containing 150,000 inhabitants, of whom 3,000 are Chinese. The mass of the people worship tutelary gods. The majority of the educated class follow the doctrines of Confucius. The Christian religion is professed by about 420,000 persons, under six Catholic bishops. The Anamese army musters about 150,000 men. The total commerce of the port of Haiphong in 1881 amounted to 2,171,428 taels. The principal exports are silk, lac, tin, medicinal drugs, cotton, mushrooms, and anise-seed oil. The trade is chiefly in the hands of the Chinese. The French possessions in Farther India consist of the six provinces of Lower Cochin-China, ceded to France in 1862 and 1867, and containing 1,597,013 inhabitants in 1880.

Historical Review.—The political and military power of France in Farther India dates from before the Revolution. A French force landed in 1789, by the aid of which, after a ten years' war, Nguyen Anh, or Giacong, established himself upon the throne. This Emperor did not acknowledge the suzerainty of China, of which four centuries before Anam, with Cochin-China and Tonquin, had formed an integral part. His son and successor paid homage to the Emperor of China in order to escape through his protection the tutelage of the missionary priests, who were the officious vehicles of French domination. In 1825 he refused to receive a French embassy. Tonquin, which was incorporated in the new empire of Anam, but chafed under the foreign rule, welcomed the missionaries because they were obnoxious to the Emperor. This was the occasion of a long and cruel persecution of the missionaries by the Anamite authorities. The horrors only ceased upon the death of the tyrant in 1841. His successor, Thieutri, was disposed to repeat

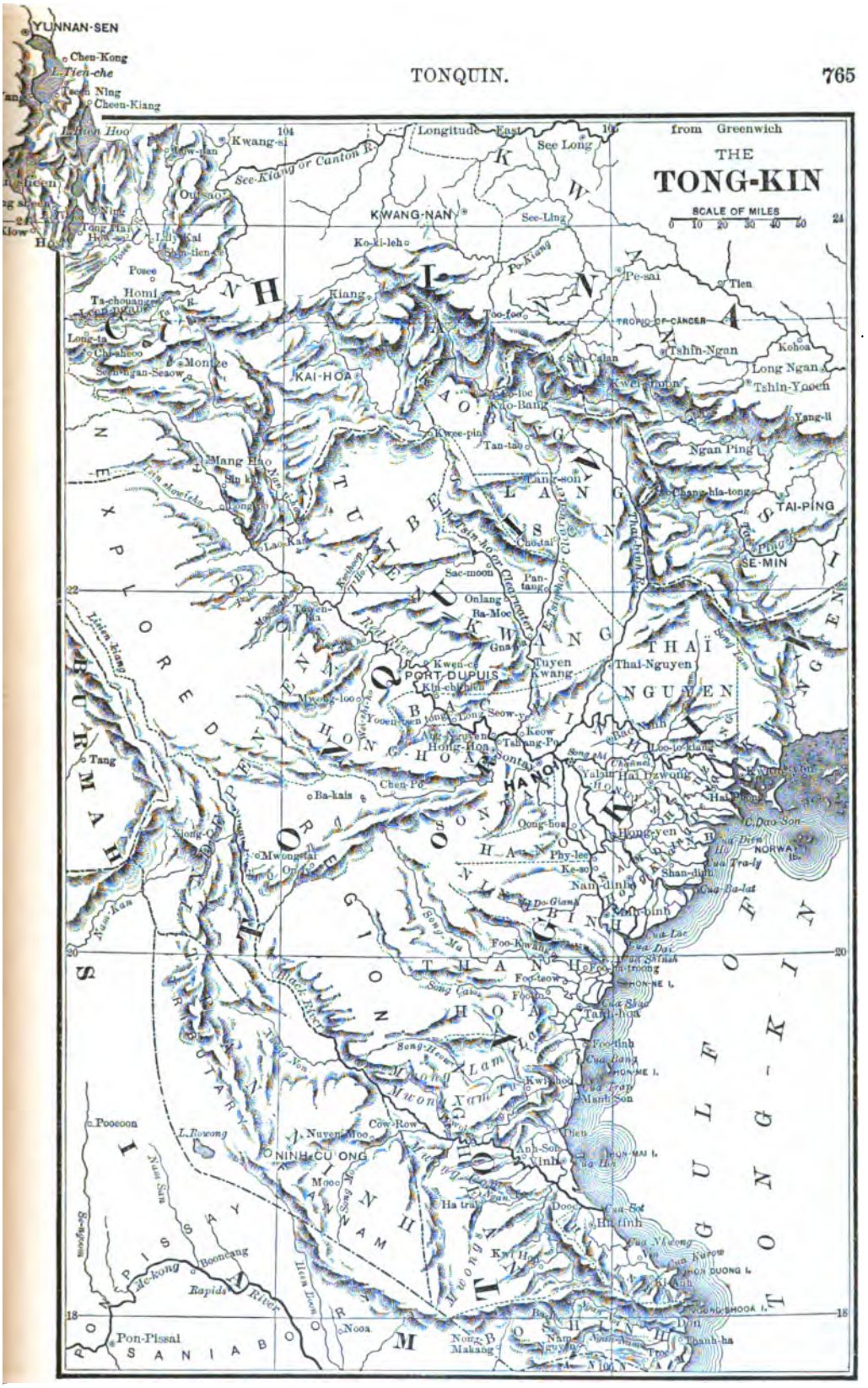
the crimes of his father, but took warning from the successes of English arms in the opium war. In 1847 Commodore Lapierre arrived in Turon with two war-vessels, to demand the religious freedom from the Anamite monarch which the Emperor of China had recently granted by treaty. The French commander was warned during the negotiations of an intended massacre, and prepared for combat. Anamite armed craft collected in the harbor, and, when they did not depart upon Lapierre's warning, he opened fire and annihilated the whole fleet. A few months later Thieutri's son succeeded him, under the name of Tuduc. On the pretext that the Christian priests intrigued with one of the imperial princes, he ordered his officers to throw into the water every missionary who fell into their hands. In 1851 and 1852 many were executed. After the termination of the Crimean War, another French vessel of war brought a written message, which the Emperor refused to receive. The commander thereupon bombarded the port and landed troops. Yet after long procrastination the French force sailed away without obtaining any definite terms. This emboldened Tuduc to persist in his persecutions. One of the missionaries, Bishop Pellerin, at last moved Napoleon III to dispatch another expedition, which, under the command of Admiral Rigault de Genouilly, arrived at Turon in August, 1858. The French took the town by assault, and proceeded to fortify it, but by the unwholesome climate the force was soon so reduced that it could not hold the place. The troops therefore re-embarked, and in the beginning of 1859 took Saigon, in Cambodia, by storm. Admiral Rigault de Genouilly was replaced by Admiral Page. While the latter was planning operations against Turon and Hué, the former commander convinced Napoleon of the importance of Saigon and its district. The consequence was, that in the following years the French continued the conquest of Cambodia, fortified and garrisoned Saigon, and repelled the Anamites several times. On June 5, 1862, Tuduc was obliged to sign a treaty which reduced his sovereign rights, and accepted French protection. He would not have submitted to such terms if the Tonquinese had not broken out in rebellion at that time. The leader of the rebel army was Pedro Phuong, a descendant of an ancient dynastic family and a zealous Catholic. The French availed themselves of the difficulties between Anam and Tonquin to encroach upon the powers of Tuduc until, in 1874, after the campaign of 1873, in which François Garnier lost his life, they extorted from him a treaty which reduced him to vassalage. It admitted the French to three ports of Anam, with the right of maintaining a garrison, required the King of Anam to conform his foreign policy to the wishes of France, and promised him assistance in preserving order, suppressing piracy, and defending his land against foreign attacks.

Tuduc, instead of carrying out his part of the compact, embraced the ancient feudatory relation to China, which the Peking Government now hastened to reassert, in order to escape the French protectorate. The French Government made no attempt to enforce the treaty, but postponed the matter year after year, until the events in Egypt and the new impulses to external activity spurred them to action.

The absorption of Anam and Tonquin would open the gates of China under as favorable conditions as were enjoyed by English merchants in Hong-Kong and Canton. The Alpine province of Yunnan, inhabited by Chinese Mohammedans and aboriginal Mino-tses, is bound by very loose political ties to the Celestial Empire. They held out many years against the Peking Government before their rebellion was suppressed in 1872. It was this rebellion which suggested to the Indian Government, to which the rebels appealed for assistance, the possibility of reopening the great commercial route of antiquity through Burmah to the mouth of the Irrawaddy. The British home authorities, reluctant to give any encouragement to the rebel King, Suleiman, recalled the expedition of Maj. Sladen. The second expedition, in 1874, was driven back by the Chinese, after the interpreter Margary had first been murdered. The route has only recently been explored by Mr. Colquhoun. The rebellion of Suleiman first put, likewise, the Red river route into the minds of the French, and was the occasion of the last war in Tonquin. The French merchant Dupuis was commissioned by the Governor of Yunnan to explore the Red river with reference to transporting materials of war into the disturbed province. The Tonquin authorities forbade the transport of arms and ammunition, Dupuis appealed to his government to punish the Tonquinese, and gallant young French officers were eager for the adventure. With an incredibly small force they stormed citadels, routed armies of the worthless Anamese troops, and occupied the whole country, meeting with no formidable resistance until they encountered the Black Flags.

The inaccessible regions in the interior of China were the objective point of the aggressive policy in Burmah of the late British Government. The Red river has every advantage over the overland commercial route from British Burmah. It is an uninterrupted water route; the distance from the ocean is much shorter; and it passes through a country capable of a high material development.

Controversy with China.—The treaty was concluded at Saigon, March 15, 1874, between France and Tuduc. The text was communicated to the Chinese Government on March 25, 1875. A protest was immediately (June 10th) returned by China, which declared that it refused to recognize the treaty. In 1880 the Marquis Tseng interrogated M. de Freycinet with reference to a rumored French expedition to Tonquin, and was assured that no


THE
TONG-KIN
SCALE OF MILES
0 10 20 30 40 50
Longitude East from Greenwich
104
106
24
22
20
18
TROPIC OF CANCER
YUNNAN-SEN
Cheu-Kong
L. Tien-che
Cheen-Kiang
Kwang-si
See-Kiang or Canton R.
See Long
KWANG-NAN
See-Ling
Ko-ki-leh
Po-Kiang
Pe-sai
Tien
Kiang
Too-foo
Tshin-Ngan
Kohoa
Long Ngan
Tshin-Yooen
Yang-li
KAI-HOA
Kao-Bang
Kwee-pin
Tan-tao
Ngan Ping
Mang Hao
Lang-son
Chang-hia-tong
TAI-PING
SE-MIN
Lao Kai
Cho-tai
Sac-moon
Pan-tang
Onlang
Ba-Moc
Red River
Clearwater
THAI NGUYEN
Thai-Nguyen
Tuyen Kwang
PORT DUPUIS
Hong-Hoa
Sontai
HANOI
Bac-Ninh
Hai Dzwong
Hai Phong
C. Dao Son
NORWAY Is.
Hong-yen
Phy-lee
Ke-so
Nam-dinh
Ninh-binh
Shan-dinh
Ba-kais
Chen-Po
Mwongtai
Tang
BURMAH
SIAM
EXPLORED
INDEPENDENT
UNEXPLORED REGION
TONG-KIN
THANH HOA
Thanh-hoa
Black River
Song-Ma
Foo-Kwang
HON-NE I.
HON-ME I.
Kwi-hoa
Manh Son
Cow-Row
Nuyen Moo
NINH-CU ONG
L. Rowong
Poocoon
Vinh
Anh-Son
HON-MAI I.
Ha-tinh
Kwi Hoa
HON DUONG I.
Ki-Anh
HONG-SHOOA I.
Thanh-ha
Nong-B
Makang
Nooa
Boondang
Me-kong
Rapids
River
Pon-Pissai
SANIABO
LAOS
AN NAM
GULF OF TONG-KIN

expedition was contemplated, but that France was considering the question of upholding the treaty of Saigon. Subsequently, upon the circulation of fresh rumors, the Chinese representative addressed a letter of inquiry to the succeeding Minister for Foreign Affairs, M. St. Hillaire, asking whether the intentions of the French Government had undergone any change with regard to the kingdom of Tonquin, "whose prince has hitherto received investiture as a vassal from the Emperor of China." The reply, of the date of Sept. 27, 1880, declared the intention of France to conform to the treaty of 1874, which "guaranteed the kingdom of Anam its entire independence of all the powers," and "placed all the European interests in Anam under the protection of France." The Marquis Tseng wrote, under the date of Sept. 24, 1881, that the Peking Government does not recognize the treaty of 1874, or the right of the Prince of Anam to change by his sole act China's "unquestionable rights of suzerainty." M. Gambetta, who succeeded in the ministry, sent the reply, Jan. 1, 1882. He described Anam as an "empire." "I can not," he wrote, "allow you to protest against the treaty of 1874. That treaty was duly notified, and in its reply of June 10, 1875, your Government made no protest. Anam was mentioned solely as formerly a tributary of China, which is merely of historical interest." On this plea the French minister refused to agree to a protest against a treaty "the time for carrying out which has arrived," but declared that "the Government of France cherishes no designs which can harm Chinese interests." The Marquis replied on Feb. 12, 1882, after M. Gambetta had given place in the Foreign Office to M. de Freycinet, correcting the allusion to the colony of Cochin-China, and denying the construction put upon the Chinese protest of June 10, 1875, to the treaty of Saigon. The terms used by Prince Kung in that reply, he asserted, far from referring to the tributary position of Anam as merely a question of historical interest, "signify that Anam has been, and still is, a country tributary to China, whose constant acts of submission still make it a vassal state. 'If Prince Kung did not discuss the articles of the treaty,' he explains, 'it was because he refuses to recognize it; for the Chinese Government protested against the treaty of 1874 as soon as it was submitted to it.'"

In April, 1882, when rumors of the capture of Hanoi reached the Chinese embassador, he sought explanations from M. de Freycinet, who assured him that the affair was of no importance, and that what had been done was without the sanction of the French Government. This explanation was forwarded to the Peking Government, and on May 6, 1882, the Marquis Tseng informed the French minister that he had tranquillized the court at Peking. On the 31st of May he received from M. de Freycinet a dispatch correcting the interpretation which had been put upon his words, couched in the following terms: "I confined myself to saying that the French Government had given orders for carrying out the treaty of 1874. I added that the consequences of the influence I intended to exercise concerned only the signatories of the treaty, and that consequently we had no explanation to give to the Chinese Government." In his reply, dated June 14, 1882, the Marquis Tseng protested against this position in the following language: "If a suzerainty of centuries over Tonquin, a contiguous frontier for thousands of *lis*, a numerous colony settled in the country, commercial interests whose extent yields to those of no other country, and the navigation of a river which is the outlet of the southwest of China —if, I say, all these titles put together, do not give the Imperial Government a right of being interested in what happens in Tonquin, I should be glad to know what could confer such a right." This remained unanswered, and for many months there was little intercourse with the European representative of China.

Meanwhile negotiations were opened at Peking, and in November, 1882, M. Bourée, the French minister, agreed upon a scheme of arrangement which, however, was rejected by the French Government. On May 16, 1883, M. Bourée was recalled to France, and M. Tricou, embassador to Japan, was sent on a special mission to China, and entered into negotiations with the Viceroy, Li Hung Chang, who was proceeding to take command of the Chinese troops in the four southern provinces. On July 4th M. Tricou announced that any aid given by China to Anam would involve a *casus belli*. The Chinese Government disavowed any responsibility for the acts of Chinese subjects in Anam.

About this time the scene of negotiations was again transferred to Europe. On Aug. 18, 1883, the Marquis Tseng declared the bases on which China was willing to treat, which were the preservation of Chinese suzerainty and the evacuation of Tonquin by France, on the one hand, and the opening of the Red river to commerce on the other. M. Challemel-Lacour, in reply, August 27th, denied the suzerainty, and declared that the affairs of Tonquin must be settled with Anam alone. A new situation was now created by the French military successes, the change of rulers in Anam, and the treaty concluded at Hué, August 25th. The Chinese diplomats protested that there could be no king in Anam without investiture by the Emperor of China, and that the treaty therefore possessed no force or validity. Thence ensued a month's negotiations between the Marquis Tseng and MM. Jules Ferry and Challemel-Lacour, in which Lord Granville unofficially played the part of mediator. On September 15th propositions were submitted by the French Government, agreeing to the establishment of a neutral zone and providing for the opening of the town of Man

Hao, in Yunnan, to foreign commerce. The answer of the Chinese Government, October 15th, was to the effect that, if France was determined to disregard the suzerainty of China and the integrity of Anam, it would accept a neutral zone between the southern frontier of Tonquin and the 20th degree of latitude, and make Kuang Ho Khuang, opposite Sontay, a treaty port. By this arrangement China would acquire possession of the delta of the Songcoi and the control of the route to Yunnan, abandoning the other less valuable portions of the kingdom to be annexed to French Cochin-China. The Chinese Government offered to suppress piracy, subdue the Black Flags, and keep the Songcoi river open for commerce.

M. Jules Ferry, on Nov. 22, 1883, declared that France was inclined to respect the traditional bond between Anam and China, so far as it was not incompatible with the French protectorate. He announced that it was necessary to occupy certain new positions in Tonquin. In a communication, dated November 24th, the Marquis expressed regret that the French contemplated the occupation of Hanoi, Sontay, and Bacninh, which did not accord with the declarations of former ministers, who spoke only of a protectorate. M. Ferry replied, November 30th, that the object was to secure the protectorate, and added: "The plan of our military campaign in Tonquin has not been changed, and can not be changed. The responsibility for a conflict would rest upon China."

The Black Flags.—More formidable than the Anamese army were the irregular soldiers known as the Black and the Yellow Flags. These troops were not Anamese, but Chinese, and it is not known to what extent they were augmented by volunteers from the neighboring Chinese provinces. They are survivors of the valorous Taeping rebels who held the military power of the Chinese Empire at bay for many years. In 1865 the rebels, who had retired before the Chinese troops into the province of Kwangsi, were finally driven across the border into Tonquin, and found a secure retreat in the mountains on both sides of the Red river valley. This band of exiles, numbering about 5,000, were accompanied by their wives and families. Their chief was Watsong, one of Taeping Wang's principal lieutenants, and many of them continued the freebooting practices into which the rebellion degenerated in its latter period. They offered no further hostility to the Chinese Government, but rather became the supporters and instruments of Chinese policy and influence in Anam. The Anamese troops were sent against them several times, but were invariably defeated. In 1868 they held undisputed possession of the whole right bank of the Red river above the capital. With the assistance of the Chinese Viceroy of Canton, or Governor-General of the two Kwang, they were finally expelled from the low country and confined to the upper course of the river. Soon after Watsong died, and his followers divided into two bands. The main body of the original Taeping rebels were disposed to settle down to peaceful pursuits, and to make their submission to the Chinese and Anamese authorities. They adopted the yellow flag for their ensign, and chose for their chief Hwang Tsong In, who had been a soldier in the Chinese territorial army of Kwangsi. The smaller band, which retained the black flag, was composed of criminals and desperate characters who had joined the band of Watsong in the hope of plunder or to escape from justice, and their new leader was formerly the most famous brigand in the province of Kwangsi. The principal settlement of the Black Flags is at Laokai, on Red river; that of the Yellow Flags at Hagiang, farther in the interior and east of that place. The Anamese subsidized the Yellow Flags, partly to act as a check upon the troublesome Black Flags, and were glad to avail themselves of both in their conflicts with the French. It was through a want of precaution against the skill and courage of the Black Flags that Garnier lost his life in 1873, and through a repetition of the same blunder Rivière suffered defeat and death in 1883. Both the Black and Yellow Flags have greatly increased in number since they were expelled from Chinese territory, the former numbering in 1883 probably not fewer than 5,000 warriors, and the latter perhaps twice as many.

French Military Expedition.—Capt. Rivière, a naval officer, obtained command of the expedition sent out for the purpose of enforcing the treaty of 1874, and embarked in October, 1881. The changes in the Foreign Office, which was directed successively by St. Hillaire, Gambetta, Freycinet, Duclere, and Challemel-Lacour, were the cause of Capt. Rivière being left with his small force in Tonquin without support or instructions, to act at his own discretion. The worthless Anamite militia offered no formidable resistance to his insignificant band of marines. He ascended to Hanoi, and took the citadel by assault, the Anamite garrison being driven out at the first onset, in May, 1882. Nothing further was done until the following spring, when the Government at home began to consider a forward movement, and the hostile natives showed signs of activity. There was no declaration of war against Anam, nor any expressed intention of effecting political changes. The declared object of the expedition was to clear the Red river of the Black-Flag pirates, and keep it open for European commerce. A desultory warfare was carried on with the natives. The Black Flags were re-enforced by Anamites and by volunteers from China, who united to harass and compel the retreat of the hated foreigners. Yet, during this time, the official assumption was that the French had to do simply with pirates, and were acting on behalf of the Emperor of Anam. After many vacillations, in May, 1883, the French Government decided to send a mili-

tary expedition on a larger scale, which would be sufficient to subjugate the country, and announced to China and Europe its intention practically to annex the province of Tonquin.

Campaign of 1882.—About the same time the fresh activity of the hostile Anamites drove Commandant Rivière to resume offensive operations. He had in vain appealed to the Government for re-enforcements. The moment was now favorable, and his fresh action was an incitement to French politicians to take up the mooted scheme of the acquisition of Tonquin. M. de Kergaradec was sent to Anam as the bearer of an ultimatum of the French Government to the King Tuduc, whereby he would virtually resign the government of his country into the hands of the French, and accept the position of a mediatized Indian prince. The Assembly was asked for a vote of 5,300,000 francs to enforce these demands.

The French commander feared that the communications between Hanoi and the sea would be cut off by the entrance into southern Tonquin of the bands on the Bodé, or chief arm of the Red river, and their occupation of the country in combination with forces from Anam. Commandant Rivière therefore determined to occupy the fortress of Namdinh, the most important point in the Bodé region. commanding the river. The city is the capital of a rich province, and was one of the centers of the hostile Anamite and Mandarin sentiment. He requested the governor several times to pull down his flag and admit a French garrison, but was answered: "Why have you come here? If you want to fight, let us fight; otherwise stay away." On March 27th Rivière embarked, in seven small steamers and gunboats, a force of 800 men to attack Namdinh, which was captured after a bombardment of several hours. The same day the Anamites, in the absence of the commander and a large part of the garrison, assailed the citadel at Hanoi. Commandant Rivière telegraphed home for 2,000 more troops.

On May 15th the vote of credit for the Tonquin expedition came up in the French Chamber and was carried by a large majority. M. Challemel-Lacour, in defending the project, characterized the objections of China as purely platonic, since it was not a military nation. There would be no conquest of Tonquin, because the King of Anam had no fighting troops, but merely a military demonstration. The expeditionary corps would occupy certain points in Tonquin until Tuduc showed a willingness to renew and revise the treaty in the desired sense. The collection of customs during the occupation would pay all the costs of the expedition. He represented that the Tonquinese were weary of the yoke of Anam and would welcome the French as deliverers. Immediately after the Chamber determined to prosecute the operations for the enforcement of the treaty, news came of the annihilation of a French force before Hanoi, and of the death of the commander.

A heavy cannonade from the Anamite guns annoyed the French troops for several days. The Black Flags became bolder and more dangerous, and their commander sent a challenge in extravagant language, of the kind which is usual in Chinese warfare, threatening to kill the French commandant with his own hands. On May 19th Commandant Rivière called out his troops for a sortie in force. Commandant Berthe de Vilers led the column, consisting of 400 men, with sailors to draw the guns. The Anamites fell back as they took up a position in the open and advanced with confidence, until they reached the spot where François Garnier fell. Here they were brought up short by a stockade concealed by bushes, in which a strong force of Black Flags were waiting for them. A heavy fusillade was opened upon the French column, and before a shot was fired in reply 80 soldiers fell dead or wounded. Commandant Rivière attempted to bring up his artillery, and, while he and Cadet Moulin were assisting the sailors with the cannon, they were both killed. Commandant de Vilers was mortally wounded, and two other officers were killed. The soldiers retreated precipitately. When the news was brought to Saigon, Chef-de-Bataillon Chevalier was sent with 500 regular troops and two gunboats.

On receiving the news of this disaster, May 26th, the Chamber, which had been wrangling over the appointment of a civil commissioner, at once passed the bill for the expedition. Transports were dispatched under the command of Admiral Courbet, followed by others, until in July 7,000 troops were landed in Tonquin, 4,000 of whom were sent up to Hanoi. Admiral Courbet commanded the sea-forces, Gen. Bouet the land troops, and Dr. Harmand was appointed civil commissioner.

This triumvirate, in communication with the authorities at home, planned an extensive campaign. The French troops proceeded at once to take possession of the delta of the Red river. At the apex of the triangle is the city of Hanoi, and the two arms of the river constitute the lines of communication between the principal points. They already had possession of Namdinh on the southern arm. They next occupied without difficulty the seaport of Haiphong, at the mouth of the northern arm. Between the latter and the main position of the French at Hanoi the fortress of Haiziuong remained in the hands of the defenders of the country. On August 13th, Col. Brionval marched on this position, and captured it without loss. About the same date, Gen. Bouet, the chief in command, undertook an expedition against the city of Sontay, on the Red river, twenty miles above Hanoi. While this operation was being carried out from Hanoi, Admiral Courbet was expected to gain possession of the forts at the mouth of the Hué river, with a squadron and a division of land-troops, and then advance upon Hué.

Gen. Bouet set out from Hanoi on the evening of August 14th, with a force of 2,000 men and six guns, advancing in three columns, one of which, commanded by Col. Revillon, followed the river, with the intention of storming or flanking the works along the bank. Five gunboats ascended the river to support the troops. The first intrenchments, not four miles from Hanoi, were vacated after a few shells had been sent into them from the gunboats. A second fortified position was speedily deserted by the Anamites. The third was the town of Phouhai, palisaded with stout bamboo stakes. After pouring in a hot fire of shells from the vessels, Revillon's infantry advanced to the assault, but met with such vigorous resistance that they were obliged to retreat. The gunboats shelled the place again for more than an hour, but a second attack was repelled. A third was not more successful, and Revillon prepared for a final effort at the break of day.

The middle column, under Col. Coronat, had by this time advanced without meeting with any resistance, to the village of Yenoi, where it awaited the issue of the *détour* undertaken by the column on the left, commanded by Col. Thier. The latter sent out a detachment to reconnoitre, which found the road a little distance ahead closed by intrenchments and stockades. The road, leading through bogs and overflowed fields, was so narrow that the guns could not deploy properly, and the horses and wheels stuck fast in the mire. The column advanced to the point where the road was blocked by fortifications, which was at the village of Vong, beyond the spot where, on the same narrow road, Rivière had lost his life. The cannon opened fire at a distance of a thousand paces from the village. The artillery fire was not answered; but when the troops approached the fortifications they were met with a sharp fire of musketry, which drove them back. When the Anamites saw the French in retreat, they sallied in force and strove to flank the retiring column on the left, where were the Cochin-China auxiliaries and Yellow Flags, who had now joined the French. The situation in the afternoon of the 16th was at times exceedingly critical. The Anamites and Black Flags followed the French a long distance, though the latter several times turned front and poured volleys into their pursuers, supported as well as was possible by the artillery. Thier reached Hanoi by evening, and the middle column, after waiting in vain for him to join it, returned the following day.

The assault of Revillon on the morning of the 16th was successful, and the village and its pagoda were finally captured after fourteen hours of fighting, with a total loss to the French of 8 officers and 14 men killed and about 50 wounded, not counting the 30 dead and the wounded among the native auxiliaries.

The entire French force, with the exception of a small garrison in the pagoda of the captured village, was back in Hanoi by the 17th. The continued rising of the waters necessitated the abandonment of the captured town and a cessation of operations for some weeks.

On the Hué River, in the center of Anam, the invaders met with better success. The forts at the mouth of the river were bombarded on the 18th, 19th, and 20th of August. A landing could not be made on the north bank on the 19th, but on the following day it was successfully accomplished, in spite of an energetic defense by the Anamites from behind the dunes. The fortifications on the southern bank were occupied without fighting on August 21st. Steamers took part in the bombardment, and delivered their fire to good effect. The landing force consisted of sailors from the first three vessels, two companies of marines, one of native riflemen, two batteries of native artillery-men, and 100 coolies—in all 1,050 men, with 15 guns. The French lost but a few wounded, but their shells caused severe losses on the other side, the Anamite dead numbering over 600.

The fortress of Haiziuong was captured August 19th, by a sudden assault which was so well conducted that the Anamites had no time to spike their guns, and fled in disorder into the interior. This town is the capital of a province, and has a population of 30,000. It was strongly fortified with palisades, after the Anamite manner, and occupies a commanding site on the Taibigne arm of Red river.

After the capture of the fortifications at the mouth of the Hué a truce was made, and Dr. Harmand, the civil commissioner, with M. de Champeaux, the deputy of the Governor of Cochin-China, went to Hué in the Bayard, escorted by two small steamers, with a guard of 90 marines, to negotiate for peace. Re-enforcements were sent from France to hold the positions, and a blockade was declared.

The Treaty of Hué.—King Tuduc, the determined enemy of the French, had died in July, and was succeeded by Vian Lau, also an adherent of the war policy. But on the capture of the Hué forts the new King and his court fled in consternation into the interior, leaving the throne vacant. His rival, Hiep Hoa, or Hiephma, the leader of the peace party, who was amenable to French influences, now assumed the supreme power, and at once sent a request that Dr. Harmand come to Hué to negotiate terms of peace. A treaty was drawn up and signed August 25th. The articles provided for the payment of a war indemnity; the cession of the province of Bin Thuan to France; the recall of Anamite troops from Tonquin, and the transfer of the command of the Anamite army to Gen. Bouet, who would employ the troops, lately in the field against the French, to expel the Black Flags from Tonquin; the confirmation of the French protectorate, established by the treaty of 1874; the opening of the ports of Quinhon, Turon, and Quangai to commerce. The treaty stipulated furthermore that the French should have

control over the Anamite finances and customs, and should permanently occupy the forts at the entrance of the harbors of Hué and Turon. In Tonquin they engaged to preserve order, establish good government, and clear the country of pirates. The right to maintain an armed force there, and to occupy any military positions that were deemed necessary for these objects, was also reserved.

On September 1st, although the country was still inundated, the French advanced within twelve miles of Sontay, to the village of Pallan, where they found the enemy in casemated forts, on which the gunboats produced no effect. After three days of fighting, they carried the works by storm. Leaving 800 men with a gunboat to hold the position, Gen. Bouet returned to Hanoi to await re-enforcements before marching upon Sontay. The Black Flags about this time became more aggressive, interrupting traffic on the Songcoi, and occupying posts within 5 miles of Hanoi.

Differences between Dr. Harmand and Gen. Bouet, who by the terms of his instructions was obliged to act in concert with the civil commissioner, led to the recall of the military commander. Admiral Courbet took command of the armed forces, and in the middle of October Dr. Harmand's joint direction in strategical matters was taken away.

Operations were then suspended until October. The citadel of Ninhbinh was occupied without opposition by Col. Badens on October 18th, and Phunor, near the coast, on the 21st. The pending negotiations with China were a cause of delay in the operations. When the advance upon Bacninh was contemplated and the capture of Sontay about to be undertaken, the Marquis Tseng informed the French Government that they would come into collision with the Chinese regular troops, and that the Chinese Government was determined to defend those points. These Chinese garrisons had been in Tonquin since 1870 or earlier. They had been sent at the solicitation of Tuduc to suppress brigandage, and had accomplished that task at a cost to the Imperial Government of a million dollars. The Marquis broke off all communications with the French Government at this point. The French minister declared in the Chamber that the attitude of the embassador was disavowed by his Government, but this was promptly denied in a dispatch from Peking. The French ministry asked for a further credit of 9,000,000 francs to strengthen the expeditionary force, and continue the operations in 1884, which was sanctioned by the Assembly.

On November 17th the garrison at Haiznong had to sustain a severe attack by Black Flags, which was only repelled by the aid of the gunboat Lynx, that arrived unexpectedly.

Before the middle of December Admiral Courbet advanced with the main body of his troops against Sontay, and fighting began on the 14th, the flotilla assisting. The attack upon the fortifications began at eleven o'clock, and the outer works were carried in the evening by the Algerian troops, together with the infantry, marines, and sailors. The losses were reported by the correspondent of the "New York Herald" to be nearer 1,000 than 200 men, as officially stated. The Chinese, Black Flag, and Anamite garrison began to withdraw, but kept up the defense until the 17th, when the French entered the town. The citadel was still held by the Black Flags, who were expelled after another fight on the 18th.

This victory severely crippled the French army, and the Government prepared to send a much larger force than had been deemed necessary before testing the quality of the Black Flags and the Chinese troops. The movement against Bachninh was postponed until the next year. Re-enforcements were sent which raised the strength of the French army to about 25,000 men, besides 5,000 or 6,000 Cochin-Chinese auxiliaries. The cost of the new expedition, with the amount already expended, was about 43,000,000 francs. Additional credits to cover this were voted in December. Gen. Millot was selected to take command of all the forces. The question of occupying the islands of Formosa, Hainan, and the Chusan group, and exacting a heavy indemnity from China, was discussed. At the end of December Hunghoa, another important point, was captured. In the beginning of December there was another change of rulers in Anam. The King Hiephma was poisoned by his subjects for his submissiveness to the French. His successor was Hiephoa, a youth of fifteen, a nephew of Tuduc. The French hastened to reduce the new King to a state of subjection. A French garrison took possession of the citadel of Hué, while the French diplomatic agents, M. Champeaux and M. Tricou, who had been recalled from the futile mission to Peking, imposed their authority upon him without reserve. Although they held the King in their power, and had a large army in Tonquin in possession of every strong position in the delta, yet the French were far from being masters of the country, which swarmed with enemies.

TUBERCLE BACILLUS. The discovery of a microscopic organism supposed to hold a constant causative relation to tubercle in the lung marks one of the advances in medical science of the past year. The bacilli are believed to be present in all cases of fully-developed phthisis, as well as in cases which are still in the early stage and exhibit no physical signs. They are not found in chronic, non-phthisical pulmonary affections; and the quantity present seems to bear no relation to the intensity of the morbid process, and hence has no prognostic value. The conditions necessary for the generation of phthisis are found first in the presence of bacilli in the lungs, and, second, in an hereditary or acquired predisposition which favors the occurrence of congestive and inflammatory changes in the lungs, par-

ticularly at the top, where the circulation is naturally retarded. The coexistence of these two factors seems to be essential to the production of true pulmonary phthisis. The treatment of the disease must regard both of these factors, and hence the indications are, first, to promote the general health, improve the condition of the blood and of the vessels, and exercise the respiratory function, in order to prevent stagnation of the blood and inflammation in the apices of the lungs; second, to prevent the access of bacilli, and to destroy them by antiseptic applications when they have once effected an entrance.

For the detection of the tubercle bacillus under the microscope, two solutions are necessary, one of magenta, which colors the bacillus, and one of chrysoïdine, which colors the surrounding substances but spares the bacillus. The formula for the magenta solution is as follows:

Magenta crystals	2 grammes.
Aniline, pure	3 grammes.
Alcohol	20 grammes.
Distilled water	20 grammes.

The solution of chrysoïdine is prepared by making a saturated solution of chrysoïdine in distilled water, then by adding a crystal of thymol in a little absolute alcohol to preserve the solution. It is also necessary to have a dilute solution of nitric acid (one part of the acid to two parts of distilled water). A fragment of tuberculous expectoration is placed on a glass and allowed to dry; it is then passed three or four times through the flame of a lamp, and again allowed to cool. A few drops of the magenta solution are placed in a small glass, which is exactly covered with the glass holding the sputum, the latter being in contact with the coloring fluid without the interposition of any air. It is left thus for fifteen or twenty minutes, and then treated with the nitric acid, which removes all the coloring-matter in a few minutes. It is then washed in distilled water and subjected to chrysoïdine, which colors the entire preparation, again washed in distilled water, then treated with absolute alcohol, dried, and mounted in Canada balsam. The bacillus is so highly colored as to be visible to the most inexperienced with a low magnifying power.

TUNIS. See page 358.

TURGENIEFF, Ivan Sergyevich, a Russian novelist, born at Orel, Nov. 9, 1818; died at Bougival, near Paris, Sept. 3, 1883. He came of a noble and ancient family, was taught by French and German tutors on his mother's estate, learned English in the Lasareff Institute at Moscow, entered the University there at the age of sixteen, proceeded to the St. Petersburg University after the death of his father in 1833, and, after graduation, went to Berlin in 1838 to study history, philosophy, and the classics. Returning in two years to St. Petersburg, he was appointed to an office in the Ministry of the Interior. He published his first poem, "The Old Proprietor," in 1841, and continued to write poetry until 1846, but attached little value to these productions. In 1843 appeared a dramatic sketch in prose, and in 1844 his first novel, "Andrei Kolossoff," which attracted little attention. Those which followed, however, were received with avidity. They were published under the initials "T. L." (Turgenieff-Lutovitoff), but the pseudonym was soon deciphered by curious inquirers. The first of the sketches of serf-life, collected in "Memoirs of a Sportsman" (1852), appeared in the "Contemporary Review," in 1847. The effect of these natural and life-like pictures of the narrow joys and many sufferings of serfdom was like that produced in the United States by Mrs. Stowe's "Uncle Tom's Cabin." They raised Turgenieff to the highest rank in Russian authorship, and created, among the serf-owning class, his first political enemies. The Emperor Alexander declared that this book first turned his mind to the question of liberation. The last of these sketches appeared in 1857. A French translation was

IVAN SERGYEVICH TURGENIEFF.

published the same year, and a German translation in 1858. Other contributions to Russian magazines, tales, dramas, and critical essays, with an occasional article in the *Revue des deux mondes*, were published during this period. In 1852 Turgenieff drew upon himself the vengeance of the bureaucracy by uttering some sharp, but not illegal, strictures on Russian officialism, in a notice of Gogol, after the latter's death. For this he was deprived of his office, thrown into prison, and then banished to his estate in the distant Government of Orel. After this decree was canceled, through the intercession of the Grand Duke Alexander, afterward Alexander II, in 1854, he lived most of the time abroad, first in Baden-Baden, and then in Paris. In 1859 appeared "A Nest of Nobles," a novel, which attracted much attention. The next novel, "Fathers and Sons" (1862), created a sensation such as had never before been stirred up in Russia by a literary production. It depicted, in artistic contrast and with realistic candor, the conservative and the radical phases of political life in Russia. Both schools were indignant at his analysis of their feelings and motives, most of all the holders of advanced opinions akin to his own. The epithet "Nihilist," which he attached to the materialistic and revolutionary tendencies, was accepted by the party of action and caught up by the Government, which applied it to all democratic and socialistic aims. This work was translated into English by Eugene Schuyler. It was succeeded by "Smoke" (1867), in which the author's own views of the future of Russia were expounded. This widened the breach made between him and the school of thought with which he most sympathized by his objective delineations. His friend Nekrassoff, editor of the "Contemporary Review," was alienated, and the students of Russia turned against him. While he was branded as a renegade by his own party at home, the admirers of his genius multiplied in France, Germany, and the English-speaking countries. In purity of style, as well as in the power of exploring the human soul and touching the springs of sentiment and action, and in minuteness of observation and circumstantial naturalism, he resembled Balzac, with a satirical quality added, recalling the incisive humor of Thackeray. His principal subsequent work (1877) described the life and activities of the secret revolutionary party. It was translated into English under the title "Virgin Soil." Though he was denounced as a reactionist by the Liberals of Russia, the Nihilists claimed him as a friend and sympathizer. In the later years of his life public opinion turned again in his favor. His sorrow at being misunderstood and deserted by his former friends, and the intensity of his patriotism, are revealed in the poems in prose, published under the title of "Senilia" (1883). His last novel, "Clara Militch," is a mystical romance of an original stamp. A collection of his earlier novels and tales was issued in 1856, and a complete collection of his writings appeared in 1865, at Carlsruhe, and was reprinted in several editions at Moscow.

TURKEY, an empire in Europe and Asia. The fundamental laws are derived from the precepts of the Koran and the Multeka. When not in conflict with the sacred Mohammedan laws the will of the Sultan is absolute. The Constitution proclaimed by Abdul-Hamid, Dec. 23, 1876, is modeled upon European forms of government; but, like the previous Constitution of Sultan Abdul-Medjid, it has not been carried into effect. The reigning Sultan is Abdul-Hamid II, born Sept. 22, 1842, who succeeded to the throne upon the deposition of his brother Murad, Aug. 31, 1876.

The executive and legislative authority is exercised under the Sultan by the Grand Vizier, who is the head of the temporal government, and the Sheik-ul-Islam, who is the chief interpreter of the Koran and head of the Ulema, or council summoned to expound the laws.

The Grand Vizier and President of the Council of Ministers is Said Pasha; the Sheik-ul-Islam, Ahmed Essad Effendi.

Area and Population.—The Treaty of Berlin reduced the area of the dominions under the rule of the Sultan in Europe from 138,264 to 56,868 square miles, and the population from 8,815,000 to 3,982,000. The area and estimated population of the divisions of the Ottoman Empire, including the vassal and tributary states, are as follow:

GEOGRAPHICAL DIVISIONS.	Square miles.	Population.
Europe:		
Immediate possessions	63,850	4,900,000
Eastern Roumelia	13,500	815,951
Bosnia, Herzegovina, and Novi-Bazar	23,570	1,826,449
Bulgaria	24,369	1,998,998
Total Europe	115,289	8,631,400
Asia	729,850	16,172,000
Africa:		
Tripoli	398,873	1,010,000
Egypt	1,152,980	16,400,000
Total Africa	1,551,853	17,410,000
Total Turkish Empire	2,396,692	42,213,400

The population of Constantinople is between 600,000 and 700,000.

Fully half the population of Turkey in Europe, about 17½ per cent. of the population in Asia, and about 23 per cent. of the total population of the empire, are Christians of the various Oriental and Occidental rites, and Jews.

Commerce.—The total imports in the year 1878–'79 are reported as amounting to 1,969,498,742 piasters (1 piaster = 4·3 cents), the exports as 839,586,490 piasters; the imports of 1879–'80 as 1,931,403,524 piasters, the exports as 863,209,246 piasters. The year 1880–'81 was unfortunate in every respect. The majority of the farming population did not produce

enough food for their needs, and were obliged to borrow money at high rates of interest. The importation of food-stuffs amounted to 3,600,000 Turkish liras (about $16,200,000), the exports to 600,000 liras. Another such disastrous year would have brought famine, but happily average crops were obtained in 1881–'82. The total exports of 1880–'81 amounted to about 9,300,000 liras ($41,850,000), including 6,958,531 okes (about 19,715,000 pounds) of tobacco, which pays no export duties. The values of the leading exports were as follow: raisins, 998,558 liras; tobacco, 810,000 liras; raw silk, 836,500 liras; opium, 447,618 liras; valonia, 377,253 liras; olive-oil, 347,876 liras; coffee, 346,852 liras; cotton, 289,510 liras; figs, 225,235 liras; sheep and goat skins, 224,514 liras; sesame, 205,455 liras; soap, 199,474 liras; wheat, 219,022 liras. The export of raisins to France for the manufacture of wine has recently sprung up and become the most important branch of the export trade. Since the rise of this demand a large part of the coast regions has been planted to vineyards.

The Army.—The reform in the military organization, approved by the Padishah in April, 1880, has made considerable progress, though retarded by the lack of financial means and the opposition of the older officers, whose emoluments are threatened with diminution. The army is divided into the nizam, or active army; the redif, or reserve; and the mustahfiz, or levy in mass. The duration of military service in the three bans is twenty years, of which six are passed in the active army and its reserve. The war effective of the active army is to be 610,200 men, with 1,512 guns. The actual strength of the nizams in 1883 was 10,311 officers and 150,106 men, with 650 guns. There is great lack of horses and war material, though contracts have been made in the United States and Sweden for rifles, torpedoes, etc.

Finances.—The budget for the year ended March 13, 1881, makes the total revenue 16,155,840 liras, and the expenditure 19,148,763 liras. A commission appointed to inquire into the condition of the finances reports that for 1882–'83 the total revenue amounts to 15,000,000 liras, and the expenditures to 20,340,000 liras. Estimates for 1883–'84 make the total revenue 16,313,006 liras, and the current expenditures of the Government 12,126,001 liras, leaving 4,187,005 liras for the state creditors.

The loans of 1858, 1860, 1862, 1863–'64, 1865, 1869, 1872, and 1873, consolidated at 5 per cent. interest, and the railroad debt, represented by the Turkish lottery bonds, amounted to £190,997,980 and the defaulted interest to £61,803,905. The Turkish Government began contracting a foreign debt in 1854. Except the guaranteed loan of 1855, £5,000,000 in amount, bearing 4 per cent. interest, the various loans, bearing interest at 6 and 5 per cent., were issued at a discount ranging from 30 to 60 per cent. In 1875, when the borrowing power of the Government was quite exhausted, the creditors were notified that only half the interest would be paid in money, and the following year it was announced that no more payments would be made until the internal affairs of the empire were more settled. In July, 1881, delegates from the bondholders met at Constantinople and effected an arrangement with the Government. The Council of Administration, created under this arrangement, took charge of the ceded revenues in March, 1882. One fifth of the product is to be applied to the reduction of the capital, and four fifths to be paid out in interest. The interest is never to exceed 4 per cent., and when the yield of the ceded revenues exceeds 5 per cent. of the debt in amount, the surplus is to be turned over to the treasury. The quotas of Servia, Greece, Bulgaria, and Montenegro, in the expenses of the public debt, are to be applied to amortization.

The Council of Administration paid in September, 1882, and March, 1883, the semi-annual interest at the rate of 1 per cent. on the reduced amount of the consolidated debt. Arrangements are made for a tobacco *regie*, to begin operations in April, 1884.

Revision of Commercial Treaties.—The Porte took the opportunity of the expiration of the treaties of commerce with England, France, Italy, Russia, and the United States, to secure an augmentation of its revenues by increasing the customs duties. It proposed to abolish ad valorem duties and substitute for them specific duties, adopting provisionally, pending the negotiations, a general ad valorem rate of 8 per cent. The proposal was resisted resolutely by the interested governments, particularly Great Britain and the United States. The British Government, in the interest of the Lancashire cotton-manufacturers and other English importers, insisted on being treated, under the most-favored-nation clause, on the same terms with Germany, whose commercial treaty has yet eight years to run. Gen. Wallace, the American minister, contested particularly the increase in the duty on petroleum. The imports of American petroleum are so large, amounting in 1882 to 400,000 cases, and the demand for this article so strong, that the Turkish Government expected to derive from this source a large and steady accession to its income. The British Government likewise objected to the application to British subjects of the tax for trade-licenses, a newly-established source of revenue and one of those which were abandoned to the bondholders.

The Armenian Question.—The Porte had thrice promised Great Britain to carry out administrative reforms in the Armenian vilayets. Minister Layard obtained the promise of a gendarmerie under English officers to defend the Armenian Christians from the violence and oppression of the Kurds and Circassians. An article in the Treaty of Berlin provided for Armenian reforms, and the special convention be-

tween England and the Porte, concluded prior to the Berlin Congress, treats of the reform of Turkish administration throughout Asia Minor. The interest of England in Armenia is chiefly negative. It is to prevent the advance of the Russians, who crossed the Caucasus in the beginning of the century and established their power in ancient Georgia, and then acquired successively the Persian khanate of Erivan, Turkish Georgia, and after the last war a part of Turkish Armenia. They not only have a large army within striking distance, but have acquired great influence over the Armenians. Upon their approach, the Armenian question loomed up, ancient history was searched for records of the kingdom of Armenia, grievances became chronic, and soon the Sultan had an "Asiatic Bulgaria" to reckon with. Relying on the sympathies of the Russians and of the English, a party in Armenia conceived that, if they showed the proper degree of spirit and resolution, their rival protectors would force the Sultan to grant them an independent government. The revolutionary agitation advanced at the close of 1882 to the stage of insurgency, and an attempted rising took place at Erzerum. The Ottoman Government, which has really lived in the best accord with the Armenians for centuries, proceeded energetically to crush the incipient revolution. The leaders were put on trial for high treason. Authors of revolutionary songs and other appeals were imprisoned or banished. The trial for treasonable conspiracy resulted in the conviction of the prisoners, but the Porte, deeming the sentences too severe, and moved by the intercessions of the foreign patrons of the Armenians, ordered a new trial. The Mohammedan brigands took license from the new condition of affairs, and committed many outrages on Armenians and Greeks. The English Government renewed its efforts to secure Armenian reforms, and, before Lord Dufferin's departure for Egypt, representations were made to the Porte. The Turkish Government, more reluctant even than usual to submit to foreign dictation in its internal affairs, evaded action by the old device of promising to consider the question of a comprehensive reform in all the Asiatic provinces.

Cretan Troubles.—The spirit of rebellion, which is always latent in Crete, owing to the large degree of autonomy already extorted by insurrection and foreign pressure, came to an outburst again in 1883, as it usually does after a period of prosperity. The immediate cause of the ferment was a controversy over the Vacouf taxes. About half the real estate of the island is affected to the mosques, partly by the assignment of the revenues of certain villages by the Sultan, and partly by the bequest of proprietors. The imperial taxation was abandoned by the convention of 1878, which conferred practical autonomy on the island, to the Assembly. The Vacouf taxes amount to about one sixth of the total obligations of the island. The diversion of so much of the revenue to the support of the Mohammedan religion, which is professed by only one fifth of the population, is a cause of dissatisfaction. The Assembly, on June 8, 1883, passed a resolution declaring that the religious taxes would no longer be paid, distinguishing the taxes from the rents from property given to the mosques. Photisdes Pasha, the governor, was directed to collect the taxes, by force if necessary. After appealing to the people in vain, he sent a body of troops into Apokorona; but the whole population rose against the military demonstration and drove out the troops, and, when he ordered another force into the province of Canea, the officers resigned.

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UNITED STATES. There were comparatively few important official changes under the United States Government during the year. Postmaster-General Timothy O. Howe died on March 25th, and on April 4th Judge Walter Q. Gresham, of Indiana, was appointed to the vacant place, it having been decided by the Attorney-General that under the law the duties of the office could be performed by a person temporarily designated for a period of ten days only. Mr. Gresham was born at Corydon, Ind., March 17, 1833. He was graduated from Bloomington University, and entered upon the practice of law in his native county. He served in the State Legislature prior to 1861, and after the outbreak of the civil war entered the military service as lieutenant-colonel of the Thirty-eighth Indiana Regiment. He was a brigadier-general under Grant in the Vicksburg campaign of 1863, and was in command of a division under Sherman before Atlanta in 1864, where he received a severe wound in the leg. The brevet title of major-general was given him in 1865. He took a somewhat prominent part in politics after the war, and was twice a candidate for Congress against the late M. C. Kerr, but was defeated. Judge William C. Woods, of the Supreme Court of Indiana, was appointed to succeed Judge Gresham as United States District Judge on the 2d of May. Gen. Green B. Raum, Commissioner of Internal Revenue for nearly seven years, resigned on April 28th, and on May 21st Walter Evans, of Kentucky, was appointed as his successor. United States Treasurer James Gilfillan resigned on April 1st, and the Assistant Treasurer, A. U. Wyman, was appointed to the place. Edward O. Graves, chief of the Redemption Bureau, was made Assistant Treasurer. Pierre C. Van Wyck, Superintendent of the Assay-Office in New York, died in April, and on the 24th of that month, Andrew Mason, previously the melter

and refiner in that office, was advanced to the post of Superintendent. On September 1st Mr. Marble retired from the office of Commissioner of Patents, and Benjamin Butterworth, of Ohio, was subsequently appointed to that office.

Some slight political agitation was caused by official changes in New York city at the beginning of March. Elihu Root was appointed District Attorney in place of Stewart L. Woodford, who had sought a reappointment. Naval Officer Silas L. Burt was superseded by Charles K. Graham, previously Surveyor of the Port; James L. Benedict was made surveyor; A. P. Ketchum was promoted from general appraiser to appraiser of merchandise; and Andrew J. Perry was made general appraiser.

Appointments made during the year in the diplomatic service were: Lucius H. Foote, of California, Minister to Corea; Seth Ledyard Phelps, of the District of Columbia, Minister to Peru; John W. Foster, of Indiana, Minister to Spain; W. W. Thomas, Jr., of Maine, Minister to Sweden and Norway; Richard Gibbs, of New York, Minister to Bolivia; Wickham Hoffman, of New York, Minister to Denmark; S. G. W. Benjamin, of New York, Minister to Persia; Dwight T. Reed, of New York, Secretary of Legation at Madrid.

Foreign Relations.—In reply to a resolution of inquiry from the Senate, the Secretary of State, on February 27th, submitted to the President the following explanation regarding the action of the American Minister to Peru:

The Secretary of State has the honor to report that he received a dispatch from Mr. Partridge, who stated that for reasons therein given the representatives of Great Britain, France, Italy, and the United States (Germany declining to take any part) were led to consider, at an informal meeting at Mr. Partridge's house, by what mode a solution of the existing difficulties might be reached. Mr. Partridge and his colleagues accordingly agreed on a memorandum which was to be sent by each of the ministers to his own Government as setting forth their views and hopes. The ministers state in substance that they are unanimously of the opinion that each should declare to his Government that they believe the only possible means of bringing about a cessation of hostilities, of saving Peru from complete destruction, and of arresting the ruin of neutrals, would be an agreement between the Governments to address representations to the Chilian Government, and cause it to understand that their wish is to see peace made on the basis of a cession of Tarapacá, reserving all further conditions for further negotiation. The ministers further declare that they consider it a duty to invite their respective Governments to agree among themselves to take the step indicated at once as an urgent necessity. Upon the receipt of this dispatch Mr. Partridge was telegraphed by the Secretary of State in substance that the leave of absence which he had requested was granted, and that he was expected to return to the United States by the first steamer. He was further informed that the action set forth in his dispatch having been taken by him without authority, was disapproved, and he was directed to so inform those of his colleagues who had acted with him. A telegram was at the same time sent to the Ministers of the United States in London, Paris, and Rome, informing them that Mr. Partridge had joined with the representatives of Great Britain, France, and Italy in a recommendation to their respective Governments to intervene in the Chili-Peru difficulties, and instructing them to inform the Governments to which they are respectively accredited, that this action was taken by Mr. Partridge without authority, and has not been approved.

Ratifications of new trade-mark and extradition treaties between the United States and Spain were exchanged at Washington on April 15th. The former was intended to secure reciprocal protection in the exclusive use of trade-marks in the two countries, and the latter increased the list of crimes for which extradition would be granted, adding embezzlement, kidnapping, extorting money or other property by threats of injury, false devices, etc. A commercial agreement was negotiated by Minister Foster at Madrid, involving the removal of differential duties between the United States and the Spanish colonies. (See page 649.)

Among the extensions of the diplomatic relations of the United States effected during the year, was the appointment of a minister resident and consul-general at the capital of Persia. Mr. S. G. W. Benjamin was appointed to that post, and arrived at Teheran in June. Treaty relations with Corea were perfected by an exchange of ratifications on May 15th at Seoul. An American representative remained at that capital, and a Corean embassy visited the United States during the year to learn something of their institutions and promote commercial intercourse. A Chinese consulate was established in New York in June, the first incumbent being Ow Yang Ming.

Consular and commercial treaties with Servia and Roumania were perfected and proclaimed during the year, and a new treaty was effected with Madagascar. Notice of the termination of the fishery clauses of the Treaty of Washington was given by the President, in pursuance of a joint resolution of Congress, to take effect July 1, 1885. The sending of pauper emigrants from Ireland by government assistance was the subject of remonstrance, and assurance was received that precautions would be taken to prevent it in the future. The action of France and Germany in prohibiting or restricting the importation of the pork products of the United States was also the subject of correspondence which reached no definite result. (See PORK, PROHIBITION OF AMERICAN.)

Political Movements.—The general political movements of the year were without special importance. The National Committee of the Republican party held a meeting at Washington on Jan. 17th to consider the basis of representation and the method of selecting delegates for the next National Convention. Stephen W. Dorsey, of Arkansas, resigned the post of secretary of the committee, and John A. Martin, of Kansas, was chosen in his place.

Two propositions were offered for securing representation proportioned to the strength of the party in the different States. One of these, offered by Mr. Martin, of Kansas, would give to each State four delegates-at-large and one for each congressional district, and an additional

delegate-at-large for every 12,000 votes cast for Republican electors in 1880. That submitted by Mr. Chandler, of New Hampshire, gave to each State four delegates-at-large, with one additional for every Republican senator, and two delegates from each congressional district, with one additional for each Republican representative in Congress. These plans were antagonized with the proposition that the old basis of four delegates-at-large for each State, two delegates for each congressional district, and two for each Territory and the District of Columbia, be retained. This was adopted by a vote of 21 to 17. The following resolution was adopted after some debate:

Resolved, That the Republicans of the various congressional districts shall have the option of choosing their delegates at separate conventions held within the districts, or by subdivision of State conventions, but all district delegates selected shall be accredited by the officers of such district conventions.

It was decided that State conventions should be held not less than thirty nor more than sixty days before the National Convention, and that separate district conventions, when held, should be within fifteen days prior to the State Convention. The question of holding the next National Convention was decided in favor of Chicago, and Tuesday, June 3, 1884, was fixed as the date. The Democratic National Committee made no preparation during the year for the convention of the party.

There was a convention of delegates of the colored race from various parts of the country at Louisville, Ky., in September. It was characterized by a good deal of excitement, arising out of antagonistic feeling in regard to declaring in favor of the adhesion of the race to the Republican party. On the last day, September 27th, an address to the people of the country was adopted, of which the following are the most significant passages:

We do not ask for any more class-legislation. We have had enough of this. But we do believe that many of the laws intended to secure to us our rights as citizens are nothing more than dead letters. In the Southern States, almost without exception, the colored people are denied justice in the courts, denied the fruit of their honest labor, defrauded of their political rights at the ballot-box, shut out from learning trades, cheated out of their civil rights by innkeepers and common-carrier companies, and left by the States to an inadequate opportunity for education and general improvement.

We regard the labor question, education, and sound moral training paramount to all other questions. We believe that these questions, especially in the South, need recasting, and that the plantation credits and mortgage system should be abolished; that honest labor should be remunerated; that the landholders of the South should recognize that this question is to be solved by encouraging the negroes to industry, to frugality, and to business habits by inciting them to habits of thrift, by assisting them to acquire an interest in the soil, by paying them honest wages for honest work, and by making them contented and happy in the land of their nativity.

A National Free-Trade Conference was held at Detroit. On the last day, June 1st, an address was adopted setting forth the demands of those taking part in the conference, and officers were chosen, David A. Wells, of Connecticut, being president. The following are the material passages of the address:

American manufacturers need cheaper materials in order to contend successfully in the markets of the world against foreign competitors. The protected manufacturers are few among the many, and even these have generally been hindered rather than helped by so-called protection. American labor, even in protected industries, is discovering that it gets no higher wages by protection; that it can buy less with its money and can save less. The poorer a man is the more the tariff hurts him. The higher wages which generally prevail in America are due to superior advantages which would be increased by the removal of the tariff restrictions. While there is absolute free trade in labor, and manufacturers can import the cheap labor of Europe, the laborer is denied the right to buy goods in the cheapest market. The Government of the United States has no constitutional or other right to impose taxes on the people except with the intent and result of getting sufficient money in the public treasury to pay the public debt, provide for the common defense, and provide for the general welfare; and all tariff taxes called protective, laid with different intent and result, ought to be abolished. We favor the promotion of reciprocity and the repeal of the navigation laws which have destroyed our merchant marine. We do not counsel the immediate formation of a new party, though we recognize that many Republicans and many Democrats are losing faith in their own parties and desire to unite politically for genuine revenue reform. But in case the existing parties, in their utterances, in their candidates, or in designating their leaders in Congress, persistently oppose or evade reform, we advise revenue reformers to prepare for independent political action.

Some time before the meeting of Congress in December, an unusual contest was developed over the speakership of the House of Representatives, owing to different tendencies in the Democratic party on the tariff question. Samuel J. Randall, of Pennsylvania, was known to be an advocate of the policy of protection for American industry, and was supported for the speakership on the ground that he would be opposed to reopening the question of tariff revision. He was also understood to favor the abolition of all internal revenue taxes. John G. Carlisle, of Kentucky, was a prominent advocate of a further revision of the tariff and of the principle of a tariff for revenue, with only such incidental protection as might accrue from duties arranged primarily with a view to meeting the financial needs of the Government. He was not favorable to an immediate repeal of the internal revenue taxes. Samuel S. Cox, of New York, whose views on the tariff question were not materially different from those of Mr. Carlisle, was also a candidate for Speaker, but his support rested largely on considerations of locality and long service in the House of Representatives. A caucus of Democratic members of the House was held on the eve of the session of Congress, when on the first ballot Mr. Carlisle received 106 votes, to 52 for Randall, and 30 for Cox. He was thereby made the Democratic candidate for Speaker, and received the full support of the members of his party, being elected over J. W. Keifer,

of Ohio, the Republican candidate. There had been some opposition to Mr. Keifer among the Republicans, and an effort was made to secure his withdrawal before the caucus.

Second Star-Route Trial.—The second trial of the alleged Star-Route conspirators continued until about the middle of June, and ended in an acquittal. (For an account of the first trial and beginning of the second, see "Annual Cyclopædia," 1882, pp. 753–767.) Special incidents of the second trial were the substitution of a plea of "guilty" for that of "not guilty," on the part of Montfort C. Rerdell, and his testimony for the Government against the other defendants, and the testimony of Thomas J. Brady, S. W. Dorsey, John W. Dorsey, and Harvey M. Vaile, in their own behalf. The taking of evidence closed April 12th. Mr. W. W. Ker occupied several days in summing up for the Government, finishing on April 27th. He was followed by George Bliss on the same side, who spoke for seven days, closing May 8th. A question arose as to the right of the Government to two closing addresses, the plea of counsel being that Mr. Merrick should make the principal closing address, to be followed by the Attorney-General. When the point was discussed, a letter from the Attorney-General to Mr. Merrick was read, in which he argued in favor of that method.

Judge Wylie said the former arrangement had been a matter of agreement between counsel, and he saw now no reason for departing from the usual rule. It was the universal practice in jury cases to allow only one reply to the Government, and that order would be preserved in this case. The argument for the defendants was begun by Mr. Wilson on May 9th. He was followed by other counsel, the longest address being made by Robert Ingersoll. The final summing up for the prosecution by Mr. Merrick began on May 28th, and was finished on June 8th. The charge to the jury was delivered on June 12th. In its interpretation and application of the law there was no material variation from the charge on the first trial. The jury retired on the evening of June 12th, and on the morning of the 14th rendered their verdict, "Not guilty as indicted."

On April 18th, William P. Kellogg was indicted for receiving money while a Senator of the United States for services rendered in relation to a Star-Route contract, and Thomas J. Brady was indicted for receiving money while Second Assistant Postmaster-General, in relation to the same matter. Pleas in abatement were overruled in July, as were also motions to quash the indictments. Postponements took place, and the case did not come to trial during the year.

The Army.—There was no material change during the year in the force of the United States army, or the manner of its employment. On November 1st it consisted of 2,143 officers and 23,335 enlisted men. The only warlike incident of the year was the pursuit of a band of Indians into Mexico and the capture of a part of it by Gen. Crook, of the Department of Arizona. This band belonged to a branch of Apaches known as the Chiricahuas. They crossed the frontier from Mexico on March 21st, and made a raid through southern Arizona and New Mexico, running off cattle and horses and plundering and terrifying the inhabitants. They moved with such rapidity that the troops in pursuit failed to come up with them before they had again crossed the border and betaken themselves into the fastnesses of the Sierra Madre mountains. One of the number, Pe-Nal-Fisher, known by the *sobriquet* of "Peaches," had deserted and made his way to the San Carlos Agency, where he was seized and turned over to Gen. Crook. He agreed to conduct that officer to the stronghold of the hostile savages in the Sierra Madre, on the border-line between the Mexican States of Sonora and Chihuahua. Gen. Crook concluded to trust him and accept his services. On the 1st of May he left San Bernardino Springs with 193 Apache scouts, commanded by Capt. Emmett Crawford, Third Cavalry, assisted by Lieuts. C. B. Gatewood, Sixth Cavalry, and J. O. Mackay, Third Cavalry, and Capt. A. R. Chaffee's company of the Sixth Cavalry (42 enlisted men and two officers, Lieuts. Frank West and W. W. Forsyth). This force was the maximum which could be supplied by the use of every available pack-animal in the department. They had supplies, field rations for 60 days, and 150 rounds of ammunition. Officers and men carried only such clothing and bedding as were absolutely necessary, and instead of keeping up their own messes shared the food of the packers. The pack-train comprised over 350 animals. The forced moved southeast down the San Bernardino, through a country that had been completely laid waste by the Apaches. Following a trail under the guidance of "Peaches," they entered the Sierra Madre on the night of May 8th. In his report, Gen. Crook said:

> The indications of the proximity of the enemy had now become so marked that I concluded to keep the pack-trains back in the stronghold guarded by Chaffee's company, while the Apache scouts under Crawford should scour the country in front and on our flanks. On May 15th the scouts discovered the camps of Indians, which were afterward found to be those of Chato and Bonito. In accordance with my careful instructions, they would have been surrounded but for the fact that some of the scouts incautiously fired upon a buck and squaw. The surprise was complete, and in the subsequent fight, which lasted several hours, the Indians were thoroughly beaten, the camps and their contents captured, and five half-grown girls and young boys taken prisoners. Nine dead Indians were found afterward that had been killed in the fight, the extremely rugged nature of the country, the camps being situated half-way up the face of a precipitous mountain, gashed with ravines and arroyos, preventing any exact count being made without extreme danger from the Indians who might be wounded or hidden in the rocks. The eldest of the captive girls said that, if permitted, she would go out to her people and have a delegation of them come in next day, as she was sure they wanted to make peace. Her manner satisfied me of her sincerity, and I allowed her to leave the camp.

After considerable parley with messengers from the Indians, all the chiefs surrendered. They desired to make peace, and to be placed on the San Carlos Reservation. Efforts to bring in the scattered warriors were but partly successful, and when Gen. Crook felt compelled to begin his return march on account of his scanty supplies, he had with him 384 Chiricahua Indians and six Mexican captives who had been found in their possession. Other Indians were to be sent in afterward according to agreement with Hieronymo. The force reached the supply-camp at Silver Springs, Arizona, on June 10th, and 52 warriors and 273 women and children were sent to the San Carlos Reservation. Gen. Crook strongly urged the retention of the surrendered Indians and such others as should come in at the San Carlos Reservation. This was objected to by Secretary Teller, of the Interior Department, and the general was summoned to Washington for consultation, which resulted in an arrangement for retaining the Indians on the reservation as prisoners of war under the direct charge of that officer.

The expenditures of the War Department, for the fiscal year ending June 30th, were $49,791,055, and $1,663,151 was credited to the subsidized Pacific Railroads, for transportation services rendered the War Department during the fiscal year 1883 and prior years.

The cost of maintaining the Soldiers' Home was $139,557.63. The number of national cemeteries under the care of the Quartermaster's Department was 83, in which there were 321,369 interments. The total number of deaths reported from the army for the year was 242, of which 162 were from disease, and 80 from wounds, injuries, and accidents. From the casualties of actual warfare there was but one death and nine injuries. The cost of medical and hospital supplies was $180,139.73. There were nearly 3,600 desertions from the army during the year. At the national armory, Springfield, Mass., 33,621 small-arms were manufactured. Contracts were entered into for making, converting, and testing rifled cannon, but it was impossible to secure those for the larger steel forgings in the United States, and resort was had to the works of Great Britain.

Gen. William T. Sherman retired from the head of the army on November 1st, and was succeeded by Lieut.-Gen. Philip H. Sheridan, Maj.-Gen. J. M. Schofield being transferred to the Division of the Missouri, with headquarters at Chicago.

The Navy.—The naval vessels in commission at the beginning of 1884 were as follow:

North Atlantic Station, Rear-Admiral George H. Cooper. The Tennessee, first rate, 22 guns, Capt. Joseph N. Miller; Vandalia, second rate, 8 guns, Capt. Rush R. Wallace; Alliance, third rate, 6 guns, Commander Allan V. Reed; Galena, third rate, 8 guns, Commander Oliver A. Batchellor; Swatara, third rate, 8 guns, Commander Philip H. Cooper. *South Atlantic Station*, Commodore Thomas S. Phelps. Brooklyn, second rate, 14 guns, Capt. Aaron W. Weaver; Nipsic, third rate, 6 guns, Commander Henry B. Seely. *European Station*, Rear-Admiral Charles H. Baldwin. Lancaster, second rate, 10 guns, Capt. Edward E. Potter; Quinnebaug, third rate, 8 guns, Commander Nicoll Ludlow; Kearsarge, third rate, 7 guns, Commander William R. Bridgman. *Pacific Station*, Rear-Admiral Aaron K. Hughes. Pensacola, second rate, 22 guns, Capt. Henry Erben; Hartford, second rate, 16 guns, Capt. Charles C. Carpenter; Lackawanna, second rate, 9 guns, Capt. Augustus P. Cooke; Shenandoah, second rate, 9 guns, Capt. Charles S. Norton; Iroquois, third rate, 7 guns, Commander James H. Sands; Adams, third rate, 6 guns, Commander Joseph B. Coghlan; Wachusett, third rate, 7 guns, Commander Alfred T. Mahan; Onward, fourth rate, 3 guns, Lieut.-Commander Francis W. Dickins. *Asiatic Station*, Acting Rear-Admiral John L. Davis. Richmond, second rate, 14 guns, Capt. Joseph S. Skerrett; Trenton, second rate, 10 guns, Capt. Robert L. Phythian; Ossipee, third rate, 8 guns, Commander John F. McGlensey; Juniata, third rate, 8 guns, Commander Parnell F. Harrington; Essex, third rate, 6 guns, Commander Alexander H. McCormick; Enterprise, third rate, 6 guns, Commander Albert S. Barker; Monocacy, third rate, 6 guns, Commander Francis J. Higginson; Alert, third rate, 4 guns, Commander Charles J. Barclay; Palos, fourth rate, 6 Lowitzers, Lieut.-Commander George D. B. Glidden. *Training Squadron*, Commodore Stephen B. Luce. Minnesota, first rate, 24 guns, Capt. James H. Gillis, at New York; New Hampshire, first rate, 16 guns, sails, Capt. Edmund O. Matthews, at Newport, R. I.; Jamestown, third rate, sails, 12 guns, Commander Charles V. Gridley, at New York; Saratoga, third rate, 12 guns, Commander William H. Whiting, training-ship, at New York; Portsmouth, third rate, sails, 12 guns, Commander William C. Wise, at Norfolk for repairs. There were also on special service, the Alarm, fourth rate, torpedo-ram, and the Dispatch, fourth rate, at Washington; the Michigan, fourth rate, at Erie, Pa.; the Pinta, fourth rate, on the way to San Francisco; Powhatan, second rate, 14 guns, Capt. Andrew W. Johnson, at Boston; Ranger, third rate, 4 guns, Commander Charles E. Clark, surveying Central American coast; St. Mary's, school-ship, at New York; Tallapoosa, dispatch-vessel, at Norfolk; Yantic, third rate, 4 guns, Commander Frank Wildes, at New York Navy-Yard. The Colorado, first rate, 30 guns, Capt. William A. Kirkland, was a receiving-ship at New York; Franklin, first rate, 26 guns, Capt. Lester A. Beardslee, like service at Norfolk; Wabash, first rate, 26 guns, Captain Fr. M. Bunce, same at Boston; Independence, third rate, at Mare island; St. Louis, third rate, at League island; Wyandotte, fourth rate, at Washington Navy-Yard. The Speedwell, fourth rate, arrived at Norfolk in January. The ironclads Ajax, Catskill, Lehigh, Mahopac, and Manhattan were laid up at City Point, Va., in command of Commander D. W. Mullen.

Authority was given by an act of Congress, approved Aug. 5, 1882, to strike from the register of the navy such vessels as should be deemed of no further service to the Government. Under this authority 47 vessels were so stricken from the register. An act approved March 3, 1883, authorized the Secretary of the Navy to dispose of such of these vessels as might be deemed expedient, by sale in accordance with sealed proposals. A circular was issued June 21st, inviting such proposals for the purchase of 24 of these vessels, their names, location, and appraised value being as follow:

The Congress, $25,400; Guard, $2,800; Kansas, $6,100; and Sabine, $10,400, at Portsmouth, N. H. Iowa, $44,600; Niagara, $29,000; and Ohio, $15,700, at Boston. Blue Light, $500; and Florida, $64,400, at New London, Conn. New Orleans, $200 (on the stocks), at Sackett's Harbor, N. Y. Susquehanna, $9,000, at New York. Burlington, $3,000; Glance,

$400; Supply, $1,200; Sorrel, $200; and Dictator, $33,800, at League island, Pa. Frolic, $8,600; and Relief, $2,600, at Washington. Worcester, $25,400; Shawmut, $5,300; and Savannah, $10,600, at Norfolk. Roanoke, $37,200, at Chester. Pawnee, $5,600; and Sea-weed, $500, at Port Royal, S. C.

Proposals were received until September 24th, and the vessels were awarded to the highest responsible bidders. The aggregate amount realized was $384,753. Condemned stores and supplies were also sold to the amount of $135,000. The other vessels stricken from the register were not considered of sufficient value to be sold, and were condemned to be broken up on the stocks.

The Advisory Board appointed to consider the needs of the United States Navy, recommended the gradual substitution of new steel vessels for all the old type of wooden vessels. It fixed the standard for the navy at 70 vessels, 43 for service at sea, and 27 to be held in reserve, and recommended that they be built at the rate of seven a year. Under authority of the acts of Aug. 5, 1882, and March 3, 1883, proposals were invited for the construction of three cruisers, one dispatch-boat, and three double-turreted monitors. The cruisers were to be of steel, and were intended to equal anything afloat in speed and efficiency. The Chicago was to be of 4,500 tons, and the Boston and Atlantic of 2,500 tons each. The contract for the three cruisers and the dispatch-boat Dolphin was awarded to John Roach, of Chester, Pa., the aggregate of his bids being $2,440,000, and less on each vessel than those of any other bidder. The three monitors, Puritan, Amphitrite, and Terror, were launched on the Delaware before the close of the year, and a similar one, the Monadnock, was launched in California. The contracts for the engines and fittings of the monitors require their completion by July 15, 1884, and the cruisers must be finished during that year.

The Advisory Board recommend the immediate construction of three more large cruisers, together with two gunboats of 1,500 tons, and two of 750 tons, at an estimated cost of $4,283,000. They also recommend one steel ram, one cruising torpedo-boat, and two harbor torpedo-boats.

A commission was appointed to examine the navy-yards, with a view to determining whether any of them should be dispensed with, and what should be done to put the others in a better state of efficiency. A report was made to the Secretary of the Navy in December.

The commissioners recommended the retention of the Mare Island Navy-Yard, as it was the only one on the Pacific coast. Of that at Portsmouth, N. H., they reported that it affords ample depth of water, is rarely obstructed by ice, is in a region where skilled labor can always be obtained, has a healthful climate, is susceptible of defense, and has excellent plant for the construction and repair of wooden ships. In view of these advantages they did not recommend the sale of this yard. They did not think it advisable to sell the navy-yard at Boston, of which they said: "Its geographical position, excellent plant, fine dry-dock and buildings, and adaptability to further improvements, give it too much value to be relinquished. Sooner or later defensive works for the protection of the city of Boston must be constructed, when the yard will be safe from attack." The discontinuance of the yard at New London, Conn., was recommended, and the use of the site for a Naval Asylum was suggested. The commissioners then set forth and considered the advantages and disadvantages of the Brooklyn Navy-Yard, and expressed the opinion that it should not be sold. They recommended, however, the sale of a portion of land, comprising about fifty-eight acres, lying to the eastward of Marine Barracks, and including a part or the whole of the hospital-grounds. The commissioners next review the situation, plant, and capability of defense of the League Island Navy-Yard, and say: "Your commissioners do not recommend the sale of this yard. Of all the places on the Atlantic seaboard the Delaware is the best for iron-ship building, and on the Delaware League island has been selected by several boards as the site for a navy-yard." The commission advised against the abandonment of the naval station at Sackett's Harbor, N. Y. The recommendations with regard to the other navy-yards were as follow: *Washington Navy-Yard.*—The sale of this yard is not recommended. *Pensacola Navy-Yard.*—The commissioners do not recommend the sale of this yard, as it is the only one on the Gulf. *Norfolk Navy-Yard.*—The commissioners do not recommend the sale of this yard, because the advantages it undoubtedly possesses far outweigh its deficiencies. *Key West Naval Station.*—The commissioners do not recommend the sale of this station, believing that, in any maritime war, Key West must be retained at whatever cost.

The New London Navy-Yard has been already abandoned, and that at Pensacola closed.

The Post-Office.—The revenues of the Post-Office Department for the fiscal year ending June 30th were $45,508,692, and the expenses $42,816,700. There was an increase of 8·6 per cent. in the receipts over those of the previous year. The estimated receipts for the year ending in 1885 are $47,104,078; expenditures, $50,062,189. The anticipated deficiency is due to the reduction of letter-postage from three to two cents per half-ounce, which went into effect October 1st (see page 185, *et seq.*). The number of post-offices increased during the fiscal year from 46,231 to 47,863, and the number of employés in the department, from 65,777 to 69,020. The free-delivery system was in operation in 154 offices, at an annual expense of $3,173,386. The cost of inland mail transportation for the fiscal year was $19,234,899, an increase of $358,847 over that of the previous year. The service on Star-routes, which in 1880 cost

$7,321,499 for 76,070,995 miles of transportation, was done at a cost of $4,739,478 for 77,998,782 miles of transportation. At the close of the fiscal year there were 993 railway post-office lines, against 769 the previous year. The miles on which the railroad companies were paid had increased from 100,565 to 109,827, and the service upon the lines was measured by 86,180,430 miles. There were 5,927 money-order offices, at which the aggregate issues for the year were $125,047,238.42; and payments, $120,407,468.83. The fees amounted to $1,272,060.60, affording a net profit on the business of $159,104.34. The total number of letters and packages received at the dead-letter office was 4,440,822, an increase of about 4 per cent. The number of registered letters and parcels was 10,594,716, on which the fees amounted to $926,549.71. The cost of ocean transportation of mails to foreign ports, under the provision of the law which limits the compensation to the postage on the mails conveyed, was $316,522.13, of which $265,621.52 was for transatlantic service.

The Postmaster-General confirmed and renewed the orders of the department, made in 1879, forbidding the delivery of registered letters and the payment of money-orders to the managers of lotteries. Specific instructions were given to the Postmaster of New Orleans not to deliver mail-matter to the Louisiana State Lottery, or to M. A. Dauphin, its president. An arrangement having been made for the payment of money-orders and the delivery of registered letters to the New Orleans National Bank on account of the lottery company, instructions were also issued forbidding delivery and payment to the bank. The result of this action was a suit against the Postmaster-General for $100,000 damages, brought by the lottery company, and a suit against the Postmaster of New Orleans, brought by the National Bank, for an injunction restraining him from interfering with mail-matter addressed to the bank, and from refusing to pay money-orders payable to it on account of the lottery company. The latter case was decided early in January, 1884, by Judge Pardee, at New Orleans, in favor of the bank, on the technical ground that the Postmaster-General could not revive an order which his predecessor had revoked. He could issue a new order based on evidence presented to himself, but he could not appeal to evidence which his predecessor had discarded, and declare that an order previously revoked was still in force, as he had undertaken to do in this case.

Pensions.—On June 30th there were 303,658 pensioners on the Government rolls, of whom 198,648 were army invalids, 74,374 army widows, minor children, or dependent relatives, 2,468 navy invalids, 1,907 navy widows, minor children, or dependent relatives, 4,831 survivors of the War of 1812, and 21,336 widows of those who served in the War of 1812. During the year preceding, 38,958 names had been added to the rolls, and 20,997 dropped, leaving a net increase of 17,961. The average annual value of pensions was $106.18, and the aggregate annual value of all pensions $32,245,192.43. The total amount paid for pensions during the fiscal year was $60,064,009.23, nearly half the sum being for arrears. The total number of claims allowed for pensions since 1861 is 510,958, and the aggregate amount paid during the 22 years is $621,073,297.60. (See page 248, *et seq.*) A new building for the use of the Pension Bureau is in process of construction at Washington, for which an appropriation of $400,000 has been made. Many complaints were made of the swindling practices of pension-agents or attorneys during the year, and an effort was made by the Pension Commissioner to break them up. The assistance of the Department of Justice was invoked, and the matter was taken up by the District Attorney of the District of Columbia. In a letter to the Secretary of the Interior announcing his purpose to bring the matter before the Grand Jury, the District Attorney said:

> The character of the enormous frauds which are being perpetrated upon applicants for pensions by certain claim agents of Washington will, if the allegations are sustained by the evidence, surprise the public. The devices employed are as numerous as the skill of dishonest men can contrive. Some of the cases before me are heart-rending in their details. Maimed and decrepit soldiers, and the poor widows and helpless orphans of soldiers, pay their pittance of $1, $2, $4, or $10 to agents who must know their claims are worthless and can never be paid, and these agents merely file a formal application to enable them to collect money from their deluded clients.

Several firms and individuals charged with the fraudulent practices were suspended from the privilege of prosecuting claims before the bureau, and others discontinued business. No new regulations were adopted at the time, but in December a number of the agents accused of deceiving and defrauding their clients were indicted by the Grand Jury of the District.

Revenue Questions.—On June 25th an executive order was issued making important changes in the internal revenue collection districts. The total number of districts was reduced by consolidation from 126 to 82. As a rule, where two districts were consolidated into one, the collector most recently appointed was retained, and the other was dismissed; but in some cases a new collector was appointed.

A question arose in the early part of the year as to the date on which the repeal of the tax on the capital and deposits of banks took effect. The law had required the payment of these taxes half-yearly, on the 1st of January and the 1st of July, and returns of the average amount of capital and of deposits for the six months preceding were required to be made within ten days of those dates. The act of March 5, 1883, simply repealed these provisions, without designating any time for the repeal to take effect. The Attorney-General gave it as his opinion that the tax could not be collected for any part of the half-year already

begun when the repealing act was passed, and this view was acted on.

Miscellaneous.—The amount of public lands disposed of during the last fiscal year was 19,480,032·80 acres, of which 339,285.90 were Indian lands, and 1,999,835·71 acres were grants to railroads. The receipts for lands disposed of were $11,713,888.70, an increase on 1882 of $3,319,367.66. There were pre-emption and private entries of 4,465,665 49 acres; timber-culture entries, 3,110,930·23 acres; homestead entries, 56,565 in number, aggregating 8,171,914·38 acres.

The work of educating the Indians was extended during the year, and there is now provision for the education of 11,000.

A noteworthy event of the year was the completion of the main line of the Northern Pacific Railroad in September. The last spike was driven on the 9th of that month, at a point on the Pacific slope of the Rocky mountains 50 miles west of Helena, Montana, and 30 miles west of the Grand Divide, 2,500 miles from the Atlantic Ocean, and 800 miles from the Pacific. The opening of the line from Lake Superior to the Pacific was celebrated by the company, under the direction of its president, Henry Villard, an excursion being made over the whole line in September.

The President made a trip to Florida in the spring, leaving Washington April 5th. On the 30th of July he left the capital for a trip to the West. He attended the opening of the Exposition at Louisville, Ky., on Aug. 1st, and proceeded to the Yellowstone Park by way of Chicago, St. Paul, and the Northern Pacific Railroad. He reached Chicago on his return Sept. 5th, and two days later arrived at the capital, but made no extended stay there until nearly two months later.

UNITED STATES, FINANCES OF THE. The most noteworthy events in the financial history of the year 1883 were the reduction of the internal revenue taxes and the revision of the tariff; the steady decrease of the public debt, involving the redemption of the remainder of the 3½ per cent. bonds and the calling in of a part of the 3 per cents.; the agitation of the question of a further revision of the tariff, in order to bring about the reduction of the revenue which the first revision seems to have failed to produce; and the discussion of plans to avert the contraction of the currency, which it is feared may follow the rapid redemption of the bonds most desirable as a basis for the bank circulation.

Receipts and Expenditures.—The receipts and expenditures of the Government for the calendar years 1882 and 1883 were:

RECEIPTS.	1882.	1883.
Customs	$225,786,130 84	$202,160,389 56
Internal revenue	145,783,158 82	130,789,936 83
Sales of public lands	5,718,446 46	10,687,311 87
Tax on national banks	9,161,188 28	6,149,868 57
Profits on coinage, etc	4,188,296 91	4,449,466 78
Customs fees, fines, etc	1,442,576 61	1,251,828 00
Fees—consular, patent, and lands	2,985,843 28	3,479,698 39
Repayment of interest by Pacific Railway companies	1,461,856 43	1,5 8,108 68
Sinking fund for Pacific Railway companies	1,269,850 34	1,286,089 46
Deposits for surveying public lands	2,265,308 66	557,513 56
Sales of Government property	342,866 55	412,289 36
Sale of Post-Office property in New York city	.....	648,694 89
Indian trust funds	3,200,308 76	4,682 14
Donations for liquidating the public debt	968,891 87	.....
Japanese indemnity fund	.....	1,889,583 99
Immigrant fund	88,540 00	247,351 50
Revenues of the District of Columbia	1,962,569 08	1,645,578 88
Miscellaneous sources	2,826,309 47	2,068,854 98
Total ordinary receipts	$409,446,612 26	$370,086,552 22

EXPENDITURES.	1882.	1883.
For civil and miscellaneous expenses	$64,871,480 64	$67,047,450 24
For Indians	10,000,099 13	7,143,484 41
For pensions	55,368,891 78	67,772,009 72
For the military establishment, including river and harbor improvements and arsenals	44,996,957 09	45,578,637 64
For the naval establishment, including vessels, machinery, and improvements at navy-yards	15,001,608 90	15,329,466 14
For interest on the public debt	68,775,410 95	55,704,556 57
Total ordinary expenditures	$254,009,448 44	$258,570,604 72
Surplus revenue	$155,437,163 82	$111,515,947 50

The surplus revenue for 1883, with $3,624,-333.36 drawn from the cash in the treasury, and $1,500 recovered of moneys heretofore charged off as unavailable, making a total of $115,141,780.86, was expended in the redemption of the public debt.

There was a falling off of $44,328,925.45 in 1883, as compared with the preceding calendar year, in the receipts from the following sources: Customs, $23,625,791.28; internal revenue, $14,993,221.99; tax on national banks, $3,-011,274.66; and miscellaneous, $2,698,637.52. There was an increase of $4,968,865.41 in the receipts from sales of public lands, making a net decrease of $39,360,060.04 in the total revenues of the Government.

There was an increase of $15,488,625.38 in the expenditures during the year on the fol-

lowing accounts: Civil and miscellaneous, including foreign intercourse, public buildings, lighthouses, collection of the revenue, and the District of Columbia, $2,175,969.60; pensions, $12,408,117.99; the military establishment, $576,680.55; and the naval establishment, $327,857.24. There was a decrease of $2,856,614.72 in the expenditures on account of the Indians, and of $8,070,854.38 in the interest on the public debt, making a net increase in the expenditures of $4,561,156.28, which added to the decrease of $39,360,060.04 in the receipts, made a falling off of $43,921,216.32 in the surplus revenues applicable to the redemption of the public debt.

The following table, giving the receipts from customs and internal revenue by quarter-years for 1882 and 1883, shows in a summary form the reduction in the receipts from those sources under the act of March 3, 1883, reducing internal revenue taxes and duties on imports:

CUSTOMS.

QUARTER.	1882.	1883.
First	$58,585,485 83	$52,711,024 34
Second	53,591,231 79	48,386,058 87
Third	64,908,875 71	57,402,975 67
Fourth	48,700,538 01	43,660,280 68
Total	$225,786,130 84	$202,160,339 56

INTERNAL REVENUE.

QUARTER.	1882.	1883.
First	$30,362,181 93	$28,363,601 89
Second	40,675,698 47	36,611,438 67
Third	37,760,504 58	29,662,078 60
Fourth	36,984,523 84	31,152,817 67
Total	$145,783,158 82	$130,789,936 83

The receipts from customs in the last half of 1883 were $101,063,256.35, as compared with $113,609,413.72 for the corresponding period in 1882, a reduction of $12,546,157.37. This falling off was not entirely caused by the reduction in the rates of duty, but was due in part to a decrease in importations. The receipts from internal revenue fell off from $74,745,328.42 in the last six months of 1882 to $60,814,896.27 in the last half of 1883, a reduction of $13,930,432.15.

The reduction in the rates of duty took effect July 1st, but the receipts for the second quarter were somewhat affected by importers postponing until July 1st the withdrawal from warehouse and entry for consumption of goods on which the rates were reduced. The opposite course was pursued with goods on which the rates were increased. The repeal of the internal revenue taxes on bank deposits and capital, and the reduction in the tax on tobacco, cigars, and cigarettes, and in the special taxes on dealers in, and manufacturers of, tobacco, took effect May 1, 1883, and therefore affected the receipts from internal revenue for the second quarter.

The following is a condensed statement of the receipts and expenditures for the fiscal years ending June 30, 1882 and 1883:

RECEIPTS.	1882.	1883.
Customs	$220,410,730 25	$214,706,496 98
Internal revenue	146,497,595 45	14[illegible]
Sales of public lands	4,753,140 57	7,955,864 42
Tax on national banks	8,956,794 45	9,111,008 85
Miscellaneous	22,906,989 76	21,798,842 77
Total	$403,525,250 28	$396,287,581 95

EXPENDITURES.	1882.	1883.
Civil and miscellaneous	$57,219,750 98	$68,678,022 21
War	43,570,494 19	48,911,382 93
Navy	15,082,046 26	15,268,437 17
Indians	9,736,747 40	7,862,590 34
Pensions	61,445,193 95	66,012,573 64
Interest on public debt	71,077,206 79	59,160,181 25
Total	$257,981,439 57	$265,408,187 54
Surplus revenue	$145,543,810 71	$132,879,444 41

The receipts for the fiscal year 1883 as compared with 1882 increased $3,202,724.05 in sales of public lands and $154,214.40 in tax on national banks; and decreased $5,704,233.32 in customs revenue; $1,777,226.47 in internal revenue and $1,113,146.99 in miscellaneous; making $5,237,668.33 of net decrease. The customs receipts were larger than for any fiscal year except 1872 and 1882, when they were $216,370,286.77 and $220,410,730.25, respectively. The receipts from public lands were larger than in any year since 1856, when they were $8,917,644.93. The net receipts were larger than in any year since 1870, except 1882. The expenditures increased $11,458,271.23 in civil and miscellaneous; $5,340,888.74 in the War Department; $251,890.91 in the Navy Department; and $4,667,379.69 in pensions; and decreased $2,374,157.06 in the expenses on account of the Indians and $11,917,075.54 in interest on the public debt.

The amounts received from the various sources of internal revenue during each of the last two fiscal years were:

SOURCE.	1882.	1883.
Spirits	$69,873,408 16	$74,868,775 20
Tobacco	47,891,988 91	42,104,249 79
Fermented liquors	16,158,920 42	16,900,615 81
State banks and bankers	5,258,458 47	3,748,994 60
Miscellaneous	7,850,497 74	7,430,709 46
Total	$146,523,273 72	$144,553,344 86

The State of the Treasury.—The condition of the treasury on Dec. 31, 1883, as compared with Dec. 30, 1882, is thus shown:

LIABILITIES.	Dec. 30, 1882.	Dec. 31, 1883.
	Dollars.	Dollars.
Post-Office Department	6,891,189 71	8,043,206 37
Disbursing officers	25,567,480 00	32,175,362 28
Funds for retirement of bank circulation	39,098,793 10	38,814,572 60
Five per cent. redemption fund	14,583,922 38	14,511,274 73
Other funds held for special purposes	6,458,160 50	4,167,481 91
Matured bonds and interest	16,882,742 60	17,405,223 96
Gold certificates	64,619,840 00	91,081,920 00
Silver certificates	72,848,660 00	109,898,611 00
Clearing-House certificates	9,565,000 00	14,560,000 00
Balance	149,783,040 03	143,173,156 03
Total	406,218,728 82	473,783,810 87

ASSETS.	Dec. 30, 1882.	Dec. 31, 1883.
	Dollars.	Dollars.
Gold coin	119,528,186 04	152,608,393 46
Gold bullion	51,981,482 85	66,406,846 17
Standard silver dollars	94,016,542 00	119,449,385 00
Fractional silver coin	26,521,692 20	27,224,126 33
Silver bullion	4,468,198 10	4,584,572 98
United States notes	28,454,894 86	39,644,248 72
Gold certificates	25,105,080 00	27,446,780 00
Silver certificates	4,405,000 00	13,180,890 00
National-bank notes	6,5 2,020 95	8,955,820 16
U. S. bonds and interest	28,721,580 52	.....
Minor coin and miscellaneous items	2,758,356 45	1,020,367 77
Deposits held by national-bank depositaries	13,736,099 55	13,313,080 33
Total	406,218,728 32	473,783,810 87

The gross amount of gold coin and bullion held by the treasury ran up during the year from $171,504,568.39 to $219,014,789.63. The gold belonging to the Government, after deducting the amount held for the redemption of gold certificates actually outstanding, increased $23,439,841.24, from $131,989,758.39 to $155,429,599.63. The standard silver dollars held ran up from $94,016,842 to $119,449,385, or $25,432,543, while the amount not represented by outstanding silver certificates ran down from $25,573,182 to $22,731,664. The gold certificates actually outstanding increased during the year from $39,514,810 to $63 585,140, and the outstanding silver certificates from $68,443,660 to $96,717,721—adding $52,844,391 to the paper circulation of the country.

The Public Debt.—The changes during the year 1883 in the character and amount of the public debt are shown below:

CHARACTER OF DEBT.	Dec. 30, 1882.	Dec. 31, 1883.
Bonds at 4½ per cent	$250,000,000 00	$250,000,000 00
Bonds at 4 per cent	738,950,550 00	737,632,750 00
Bonds at 3½ per cent	99,326,200 00	.....
Bonds at 3 per cent	289,563,950 00	274,987,250 00
Refunding certificates at 4 per cent	404,750 00	315,150 00
Navy pension fund at 3 per cent	14,000,000 00	14,000,000 00
Interest accrued on the above loans	12,067,188 54	11,881,895 22
Debt on which interest has ceased	14,387,015 26	15,138,795 26
Interest on matured debt	446,814 88	336,198 78
Demand and legal-tender notes	346,740,311 00	346,739,696 00
Clearing-House certificates	9,585,000 00	14,560,000 00
Gold certificates	64,619,840 00	91,031,920 00
Silver certificates	72,848,660 00	109,898,611 00
Fractional currency	7,022,074 17	6,989,428 31
Unclaimed Pacific Railway interest	5,339 96	4,229 96
Total	$1,920,467,693 81	$1,873,415,924 48
Less cash in the treasury	312,924,016 47	375,374,200 68
Net debt	$1,607,543,676 84	$1,498,041,723 80
Decrease in the debt during the year		$109,501,953 04

The decrease during the year in the principal of the debt proper, excluding the various classes of certificates for the redemption of which moneys are held in the treasury, was as follows:

Bonds at 4 per cent	$1,317,800 00
Bonds at 3½ per cent	107,651,200 00
Bonds at 3 per cent	4,918,750 00
Refunding certificates at 4 per cent	89,600 00
Demand notes	615 00
Fractional currency	32,645 86
Debt other than above on which interest has ceased	1,131,170 00
Total	$115,141,780 86

Calls were issued during the year for the redemption of $45,968,700 in 3½ per cent. bonds, and $40,614,500 in 3 per cent. bonds, a total of $86,583,200, and "calls" amounting to $107,716,100 fell due during the year.

The only refunding operation of the Government during the year was the completion of the conversion of the "continued" 3½ per cent. bonds into the 3 per cent. bonds authorized by the act of July 12, 1882. These exchanges continued until July 26, 1883, when a call was issued for the redemption of the remainder of the outstanding 3½ per cents.

The exchanges made prior to Dec. 30, 1882, amounted to	$289,563,950 00
The exchanges during the year were	16,017,300 00
Making the total amount of 3 per cents issued in exchange for 3½ per cents	$305,581,250 00
And effecting an annual saving of interest of	$1,527,906 25

The following table shows the changes during the year in the denominations of United States notes outstanding:

DENOMINATION.	Jan. 1, 1883.	Jan. 1, 1884.
	Dollars.	Dollars.
One dollar	27,726,002 80	30,778,487 80
Two dollars	26,012,096 20	27,686,588 20
Five dollars	69,020,712 50	73,079,670 00
Ten dollars	72,207,801 00	72,528,886 00
Twenty dollars	65,760,019 00	58,842,149 00
Fifty dollars	23,992,895 00	22,831,045 00
One hundred dollars	34,459,490 00	33,022,750 00
Five hundred dollars	14,244,500 00	14,524,000 00
One thousand dollars	11,657,500 00	14,587,500 00
Five thousand dollars	2,390,000 00	240,000 00
Ten thousand dollars	210,000 00	110,000 00
Total	347,681,016 00	347,681,016 00
Deduct for unknown denominations destroyed	1,000,000 00	1,000,000 00
Outstanding	346,681,016 00	346,681,016 00

The increase in the notes of the lower denominations, which has been going on since 1879, kept up during the year. The notes of denominations less than $10 in circulation have increased from about $90,400,000 to about $131,500,000 in the last four years and a half.

The National Banks.—During the year ending Nov. 1, 1883, 262 national banks were organized with an aggregate authorized capital

of $28,654,350. Circulating notes amounting to $7,909,190 had been issued to these associations to that date. The number of banks organized was greater than in any year since 1865. Of these new banks seven, with $1,275,000 capital, were organized in the Eastern States; forty, with $3,115,200 capital, in the Middle States; forty-six, with $3,798,650 capital, in the Southern States; one hundred and thirty-two, with $18,295,500 capital, in the Western States; eleven, with $620,000 capital, in the Pacific States; and twenty-six, with $1,550,000 capital, in the Territories. Forty banks, with $7,786,000 capital, and $4,137,033 circulation, voluntarily ceased doing business during the year; and two banks, with $250,000 capital, failed. The number of banks in operation Nov. 1, 1883, was 2,522.

The condition of the national banks, Dec. 31, 1883, is shown below, there being 2,529 banks then in operation:

RESOURCES.

Loans and discounts		$1,302,223,212 35
Overdrafts		5,268,087 99
United States bonds to secure circulation		845,595,800 00
United States bonds to secure deposits		16,846,000 00
United States bonds on hand		13,160,550 00
Other stocks, bonds, and mortgages		71,609,889 62
Due from approved reserve agents		126,999,606 92
Due from other national banks		77,905,564 28
Due from State banks and bankers		19,399,267 91
Real estate, furniture, and fixtures		49,540,750 35
Current expenses		4,378,818 44
Premiums paid		8,687,584 98
Checks and other cash items		17,634,799 73
Exchanges for Clearing-House		134,402,278 68
Bills of other national banks		28,909,729 00
Fractional currency		427,784 85
Specie, viz.:		
Gold coin	$46,404,061 08	
Gold treasury certificates	28,555,260 00	
Gold Clearing-House certificates	27,043,000 00	
Silver coin	8,470,646 96	
Silver treasury certificates	3,803,190 00	
		114,276,158 04
Legal-tender notes		80,559,796 00
United States certificates of deposit for legal-tender notes		10,840,000 00
Five per cent. redemption fund with Treasurer U. S.		15,287,684 97
Due from Treasurer other than redemption fund		1,578,258 88
Aggregate		$2,445,880,917 49

LIABILITIES.

Capital stock paid in		$511,837,575 00
Surplus fund		144,809,252 18
Other undivided profits		58,787,945 91
National-bank notes issued	$309,699,950 00	
Amount on hand	4,755,819 00	
Amount outstanding		304,944,131 00
State-bank notes outstanding		181,121 00
Dividends unpaid		7,082,682 28
Individual deposits		1,106,453,008 23
United States deposits		10,026,777 79
Deposits of U. S. disbursing officers		3,768,562 04
Due to other national banks		200,867,280 06
Due to State banks and bankers		84,776,421 60
Notes and bills rediscounted		8,248,562 67
Bills payable		4,106,297 78
Aggregate		$2,445,880,917 49

The paid-in capital stock of the national banks, as shown by their reports, increased during the year from $484,883,492 to $511,837,575; their individual deposits from $1,066,901,719.85 to $1,106,453,008.23, and their loans and discounts from $1,225,889,530.22 to $1,302,223,212.35.

The circulation shown to be outstanding by the books of the national banks at the close of the year was $304,944,131 as against $315,230,925 on Dec. 30, 1882—a decrease of $10,286,794, caused by banks voluntarily giving up their circulation. The amount outstanding, as shown by the books of the Comptroller of the Currency, including the notes of banks which have failed, gone into voluntary liquidation, or made deposits of lawful money for the retirement of their circulation, decreased during the year from $362,651,170 to $350,482,829. The lawful money deposited during the year for the redemption of the circulation of insolvent, liquidating, and reducing banks, amounted to $23,909,383, and the circulation redeemed out of the money so deposited to $24,644,924. The total amount deposited on these accounts is $199,916,952; the total redeemed, $160,387,444, and the balance on deposit in the treasury, Dec. 31, 1883, $39,529,508.

The national-bank notes redeemed and assorted by the Treasurer, under the act of June 20, 1874, during the years 1882 and 1883, were disposed of as follows:

	1882.	1883.
Notes fit for circulation, assorted and returned to the banks which issued them	$4,766,400	$22,782,100
Notes unfit for circulation, assorted and destroyed	82,402,965	88,266,492
Total	$87,169,365	$111,048,592

The increase during the last year was $23,879,227.

The United States bonds held by the Treasurer of the United States to secure the circulation of national banks, on Dec. 30, 1882, and Dec. 31, 1883, were:

CLASSES OF BONDS.	Dec. 30, 1882.	Dec. 31, 1883.
Six per cents	$3,526,000	$3,588,000
Five per cents	15,000	.....
Four and one half per cents	35,915,500	42,564,000
Four per cents	106,080,600	107,512,300
Three and one half per cents	22,300,850	422,000
Three per cents	192,698,700	193,481,900
Total	$360,581,650	$347,588,200

The deposits and withdrawals of United States bonds during the year were:

CLASSES OF BONDS.	Deposited.	Withdrawn.
Six per cents	$224,000	$212,000
Five per cents	.....	15,000
Four and one half per cents	9,668,100	2,994,600
Four per cents	10,070,100	8,688,400
Three and one half per cents	.....	21,878,850
Three per cents	25,224,200	24,436,000
Total	$45,181,400	$58,174,850

The act of July 12, 1882, under which the 3 per cent. bonds were issued, provided that

those bonds should be payable at the pleasure of the United States, but should not be called in and paid so long as any bonds of the United States theretofore issued bearing a higher rate of interest than 3 per cent., and redeemable at the pleasure of the United States, should be outstanding and uncalled. The only bonds answering to this description were those which had been continued at 3½ per cent. The "call" for the redemption of the last of these bonds having fallen due Nov. 1, 1883, the 3 per cent. bonds by the terms of the authorizing act became redeemable, and "calls" for the redemption of $40,000,000 of them were issued before the close of the year, of which $30,000,000 matured during the year. All other classes of the United States bonds had risen to so high a premium, that the 3 per cent. bonds had been very largely deposited with the Treasurer of the United States by the national banks as security for their circulation, and for public money deposited with them. Of $374,464,500 in bonds on deposit for these purposes on July 31, 1883, $210,656,850 was in 3 per cent. bonds, being more than two-thirds of the entire amount outstanding. The calling in of large amounts of these bonds for redemption, and the certainty that under the present revenue laws their rapid retirement will continue, must have a very serious effect on the bank circulation. The premium on the 4 and 4½ per cent. bonds is so great as to reduce the profit on circulation to a very low rate. This fact, added to the general dislike of bankers to carrying a large premium account, has deterred the banks from substituting these bonds for their called 3 per cents. The only alternative is to surrender their circulation by depositing the proceeds of their called bonds in the treasury as a fund for its redemption, and this course is being very generally pursued. Various plans to prevent the contraction of the bank circulation have been suggested. The more important of these are discussed in the annual reports of the Secretary of the Treasury and the Comptroller of the Currency, and in the President's message to Congress.

The Comptroller of the Currency repeats the recommendations made in his report for 1882. After adverting to the facts mentioned above, he says:

The contraction of the bank circulation may be avoided by reduction of the redundant revenue, and there is no doubt that this is the true policy. . . .

The contraction of the bank circulation may also be avoided by the conversion of the long bonds into three per cents., by offering inducement to the holders of these bonds to exchange them for three per cents. to mature in 1907, the Government paying to the holders thereof a reasonable amount for their difference in value. . . . The premium to be paid to the holders of these long bonds may be considerably reduced by providing that the circulation to be issued upon the proposed bonds when deposited by the national banks as security therefor shall not be subject to the present tax of 1 per cent. per annum, or by postponing the time for their payment. Such legislation would make the new bonds more valuable for this purpose than for any other, and would be likely to prevent their withdrawal until maturity, if once deposited, and for this reason the bonds would be more desirable as a basis for circulation than any which have heretofore been issued.

The contraction would also be avoided by providing for the removal of the tax on circulation, and the increase of the amount of circulation to be issued to the banks upon the bonds deposited by them. . . .

Other propositions have been suggested in order to postpone or prevent the contraction of national-bank circulation which is now imminent, but the Comptroller considers that, so long as there is a sufficient amount of United States bonds outstanding, legislation should be so shaped as to continue them in use as a basis for national-bank circulation. . . . A law authorizing increase of issue to 90 or 95 per cent. upon the lowest market price during the calendar or fiscal year previous to the deposit, together with the repeal of the tax upon circulation, would result in the deposit of a sufficient amount of the 4 and 4½ per cents. to maintain the circulation at about its present aggregate. . . . If considered desirable, in anticipation of a gradual decline of premium, the proposed law could require the amount of circulation issued to be reduced 1 per cent. yearly, or such per centum that the total amount outstanding could not at any time exceed the value of the bonds on deposit, and the Treasurer also could be authorized to retain the interest upon bonds when necessary upon the request of the Comptroller.

The proposition to convert the long bonds into threes, is more desirable than the proposition to increase the rate of circulation, for the reason already referred to, that the new three per cents. payable in 1891 and 1907 would bear but a comparatively small premium in the market, and that the Government would be enabled to use its surplus revenues to advantage. They would be the only bonds available for circulation, and would not be likely to be withdrawn for sale for the purpose of realizing the market price; and the profit on circulation would be sufficient to induce banks to deposit them whenever additional circulation is required.

The Secretary of the Treasury in his annual report thus discusses the various measures of relief proposed:

The public mind is naturally turned to the inquiry: How shall the national-bank notes be kept in circulation; what shall be taken as a safe foundation therefor, and yet be so low in price as that the banks can afford to buy and deposit; or what can be proposed which will give to the banks safeguard against loss in taking and issuing circulating notes? I am not in favor of anything but the interest-bearing obligations of the United States Government. . . . There are other propositions, the vertebral idea of which is the creation of a new form of public debt. A plausible one is, for the Government to offer a new bond, of its own issue, at low rate of interest, to run a long period, in exchange for its 4 per cents. and 4½ per cents., allowing such a rate of premium upon the latter, but lower than that at present ruling, as would induce the holders to surrender them and take the new; and to make this a security for bank circulation. I doubt not that this is feasible. In that way, a holder of fours or four-and-a-halfs could capitalize the premium allowed on his bond, and draw interest at the new rate on that as well as on the principal, whereby there would be an inducement to exchange, rather than to hold, or, in the present difficulty of desirable reinvestment, to sell. . . . Should this project be favorably considered, details can be furnished. Yet I am so averse to recommending the creation of another or a different public debt, that as great as are, in my judgment, the advantages of the national-bank circulation in safety, in uniformity of value everywhere, and in other matters of convenience and confidence, I

look upon such project as a *dernier ressort*. I rather recommend, and so I do, that the internal revenue tax upon circulation be taken off in whole or in part. This is 1 per cent. per annum, and amounts to about three millions and a quarter each year. . . .

I further recommend that this Department be authorized to allow to the banks circulation to the amount of 90 per cent. upon the average market value, for the twelve months prior to the deposit, of the United States bonds deposited on security. Thus a bank would be enabled to obtain circulation upon the premium it paid for bonds, as well as upon the par value of them. . . . For greater caution, there may be fixed a limit of value, above which the valuation of them for adjusting a ratio shall not go. A collateral advantage, not only to the banks but to the community, is that an amount of banking assets laid away in the premium paid for bonds would thereby be released and brought into active use. It is understood, as was before stated, that in business circles United States bonds are taken as a good collateral up to 95 per cent. of their market value at the time. To be sure, there is the right reserved, in case of lowering fluctuation in market value, to demand an increase of security. There should the same power be given to this department, and the difference of 5 per cent. in the business and governmental margin, will counterbalance the nimbleness of the individual creditor, greater than that of the public agent, in looking after change in market value and in calling for further security.

The statements above made show that there is little danger of ultimate loss to the Government or noteholder, upon a circulation based upon the interest-bearing bonds of the United States, though taken as security at a margin coming near to the current market value thereof.

The President's remarks and recommendations upon the subject of the currency are as follows:

If the revenues of the next four years shall be kept substantially commensurate with the expenses, the volume of circulation will not be likely to suffer any material disturbance.

But if, on the other hand, there shall be great delay in reducing taxation, it will become necessary either to substitute some other form of currency in place of the national-bank notes, or to make important changes in the laws by which their circulation is now controlled.

In my judgment the latter course is far preferable. I commend to your attention the very interesting and thoughtful suggestions upon this subject which appear in the Secretary's report.

The objections which he urges against the acceptance of any other securities than the obligations of the Government itself as a foundation for national-bank circulation, seem to me insuperable.

For averting the threatened contraction, two courses have been suggested, either of which is probably feasible. One is the issuance of new bonds, having many years to run, bearing a low rate of interest, and exchangeable upon specified terms for those now outstanding. The other course, which commends itself to my own judgment as the better, is the enactment of a law repealing the tax on circulation and permitting the banks to issue notes for an amount equal to 90 per cent. of the market value instead of as now the face value of their deposited bonds. I agree with the Secretary in the belief that the adoption of this plan would afford the necessary relief.

Bills designed to carry into effect these various suggestions have been introduced into both houses of Congress. The most important of these are the bills of Senator Aldrich and Representative Potter, which provide for issuing in lieu of the 4 and 4½ per cents. 2½ per cent. bonds, having an equal time to run, paying out of the surplus revenues a premium on the bonds taken up equal to the aggregate present worth of the surrendered interest, computed at 4 per cent., and for reducing the tax on the bank circulation issued on the new bonds from 1 to ½ per cent.; and the bill of Senator McPherson, which provides simply that banks may issue circulation equal in amount to the par value of the bonds which they have deposited as security for their notes. The last-mentioned bill passed the Senate on the 25th of February, 1884, all propositions to make the market value of the bonds in any way the basis of the amount of circulation to be issued to the banks having been voted down.

The Coinage.—The following statement shows the coinage that was executed by the various mints during the fiscal year which ended June 30, 1883:

DENOMINATION.	Pieces.	Value.
GOLD COIN.		Dollars.
Double eagles	1,376,306	27,526,120 00
Eagles	661,179	6,611,790 00
Half-eagles	355,072	1,775,360 00
Three dollars	1,555	4,665 00
Quarter-eagles	4,055	10,137 50
Dollars	8,855	8,855 00
Total gold	2,407,022	35,936,927 50
SILVER COIN.		
Dollars	28,111,119	28,111,119 00
Half-dollars	5,519	2,759 50
Quarter-dollars	16,819	4,079 75
Dimes	7,175,119	717,511 90
Total silver	35,308,076	28,835,470 15
MINOR COIN.		
Five cents	20,455,488	1,022,774 40
Three cents	28,619	858 57
One cent	40,467,400	404,674 19
Total minor	60,951,526	1,428,307 16
Total coinage	98,666,624	66,200,704 81

The deposits of gold coin and bullion were $46,347,106.05; and of silver, $36,869,834.65. Including redeposits, the total amount of bullion and coin received and operated upon by the mints and assay-offices was $87,758,154.05, of which $49,145,559.16 was gold, and $38,612,594.89 silver. Of the bullion deposited, $32,481,642.38 in gold bullion, and $32,758,487.68 in silver bullion, were of domestic production. The total amount of silver dollars coined under the act of Feb. 28, 1878, to June 30, 1883, was $147,255,899, and to Dec. 31, 1883, $161,425,119. Of the latter amount, $119,449,385 was held by the treasury, and $41,975,734 was in circulation.

Exports and Imports.—The following table shows the value of the exports and imports for the fiscal year 1883 in the commerce of the United States with the principal foreign countries, in the order of magnitude:

Order.	COUNTRIES.	Exports.	Imports.
1	United Kingdom (England, Scotland, and Ireland)	$425,424,174	$188,622,619
2	France	58,682,223	97,989,164
3	Germany	66,169,929	57,377,728
4	West Indies	83,300,882	68,809,091
5	British North American Provinces	46,580,258	44,740,876
6	Brazil	9,252,094	44,483,459
7	Belgium	27,778,975	23,161,200
8	Netherlands	18,919,588	12,258,788
9	Mexico	16,587,620	8,177,123
10	Spain	16,931,287	7,794,845
11	China	4,080,822	20,141,881
12	Italy	10,818,558	11,909,658
13	Russia	19,141,751	2,599,995
14	British East Indies	2,185,804	19,467,800
15	Japan	3,876,434	15,098,890
16	British possessions in Australasia	9,795,656	4,021,895
17	United States of Colombia	6,865,971	5,171,455
18	Hawaiian islands	3,776,065	8,288,461
19	Spanish possessions other than Cuba and Porto Rico	324,474	10,617,563
20	Argentine Republic	3,543,196	6,192,111
21	Guiana	2,588,589	6,437,909
22	Venezuela	2,408,705	5,901,724
23	Central American states	2,008,467	5,121,815
24	Portugal	5,485,087	1,093,476
25	Hong-Kong	3,777,759	1,918,894
26	Uruguay	1,452,818	3,990,110
27	Dutch East Indies	2,407,181	2,645,917
28	Denmark	4,508,876	302,886
29	Austria	1,779,904	2,934,923
30	Sweden and Norway	2,824,548	1,381,171
31	British possessions in Africa and adjacent islands	2,438,069	1,840,020
32	Turkey	1,869,708	2,168,967
33	Chili	2,860,496	435,584
34	Peru	493,894	2,526,918
35	All other countries	4,412,205	7,618,108
	Total	$823,839,402	$723,180,914

The dutiable merchandise imported increased from $514,060,567 in the fiscal year 1882 to $515,676,196 in 1883, or $1,615,629, and the merchandise free of duty imported decreased from $210,579,007 in 1882 to $207,504,718 in 1883, or $3,074,289, making a net falling off of $1,458,660 in importations from $724,639,574 in 1882 to $723,180,914 in 1883. The exports of domestic merchandise increased from $733,239,732 to $804,223,632, and of foreign merchandise from $17,302,525 to $19,615,770, making the total exports in 1883, $823,839,402, as against $750,542,257 in 1882, and increasing the total foreign commerce from $1,475,181,881 in 1882 to $1,547,020,316 in 1883.

The value of the exports of products of agriculture, manufacture, mining, forestry, and the fisheries, during the last fiscal year, is shown below:

PRODUCTS OF—	Value.	Per cent. of total.
Agriculture	$619,269,449	77·00
Manufactures	111,890,001	13·91
Mining (including mineral oils)	51,444,857	6·40
Forestry	9,976,148	1·24
The fisheries	6,276,375	·78
All other commodities	5,366,807	·67
Total	$804,223,632	100·00

The value of the exports of agricultural products increased from $552,219,819 in 1882 to $619,269,449 in 1883, and of manufactures from $103,132,481 to $111,890,001.

The following table shows by articles the value of the merchandise imported into the United States during the fiscal years 1882 and 1883, in the order of their magnitude in 1883:

Order.	ARTICLES.	Values, 1883.	Values, 1882.
1	Sugar and molasses	$99,826,895	$100,469,022
2	Wool, and manufactures of	55,224,283	48,457,570
3	Silk, and manufactures of	50,807,616	51,875,959
4	Chemicals, drugs, dyes, and medicines	43,126,285	42,957,860
5	Coffee	42,050,518	46,041,609
6	Iron and steel, and manufactures of	40,796,007	51,377,638
7	Cotton, and manufactures of	37,654,221	35,141,136
8	Hides and skins, other than furs	27,640,080	27,841,126
9	Tin, and manufactures of	23,917,587	21,641,173
10	Flax, and manufactures of	19,737,542	19,228,198
11	Fruits of all kinds, including nuts	19,318,041	18,518,606
12	Tea	17,302,849	19,392,102
13	India-rubber and gutta percha, and manufactures of	15,844,302	14,586,927
14	Breadstuffs, and other farinaceous food	15,380,605	19,295,094
15	Wood, and manufactures of	14,887,578	14,582,604
16	Leather, and manufactures of	13,104,415	12,145,761
17	Jute, and other grasses, and manufactures of	12,606,513	10,872,382
18	Wines, spirits, and cordials	12,308,307	9,849,583
19	Tobacco, and manufactures of	11,771,596	9,847,762
20	Provisions, including eggs, fish, and potatoes	10,653,273	12,691,355
21	Earthen, stone, and china-ware	8,620,527	6,979,659
22	Fancy goods, perfumery, and cosmetics	8,358,471	10,212,101
23	Furs, dressed and undressed	7,959,759	8,080,970
24	Glass and glassware	7,762,543	6,634,871
25	Precious stones	7,692,365	8,444,525
26	Articles, the produce or manufacture of the United States, brought back	6,514,999	5,796,898
27	Paper materials	5,329,876	6,014,188
28	Hemp, and manufactures of	5,118,508	6,292,810
29	Buttons and button materials	4,223,161	3,940,860
30	Animals, living	4,042,367	4,812,989
31	Books and other publications	3,651,590	3,573,924
32	Straw and palm-leaf, manufactures of	3,565,187	3,449,041
33	Paintings, engravings, and statuary	3,403,874	3,086,822
34	Metals, and manufactures of, not elsewhere specified	2,897,972	3,026,531
35	Oils of all kinds	2,736,758	3,042,996
36	Watches, and watch materials	2,522,111	2,554,420
37	Hair, and manufactures of	2,496,699	1,902,508
38	Spices	2,474,088	2,608,281
39	Household and personal effects, old and in use	2,315,358	2,429,023
40	Coal, bituminous	2,083,972	2,189,298
41	Paper, and manufactures of, not elsewhere specified	1,958,113	2,034,289
42	Seeds	1,702,845	2,346,392
43	Salt	1,674,308	1,673,515
44	Musical instruments	1,652,528	1,580,144
45	Paints, of all kinds	1,336,229	1,218,112
46	Bristles	1,228,543	1,082,355
47	Cocoa, not including chocolate	1,218,371	1,528,993
48	Clothing (except of silk, and hosiery, etc., of cotton and wool)	1,182,355	1,365,405
49	Malt-liquors	1,122,010	970,326
50	Stone, and manufactures of	1,011,363	930,071
51	Cork bark and wood, unmanufactured	933,935	1,124,216
52	Manufactures of gold and silver, not elsewhere specified	912,625	712,781
53	Guano, except from bonded islands	575,742	856,622
54	Brass, and manufactures of	530,281	682,886
55	Bolting-cloths	418,711	359,584
56	Copper, and manufactures of	394,765	564,128
57	Barks, used for tanning	343,998	490,588
	All other articles	27,334,337	24,364,655
	Total	$723,180,914	$724,639,574

Goods entered for Consumption, and Duties collected. — The following statement shows the value of dutiable merchandise entered for consumption * in the United States during the year ending June 30, 1883; the duties collected on each commodity or class of commodities, and the average ad-valorem rates of duty:

DUTIABLE MERCHANDISE ENTERED FOR CONSUMPTION DURING THE YEAR ENDING JUNE 30, 1883.

Order.	ARTICLES DUTIABLE.	Values.	Duties.	Average ad-valorem rates of duty.
1	Sugar, molasses, and confectionery	$91,406,717 67	$46,172,378 55	50·51
2	Wool, and manufactures of	51,044,444 22	32,320,592 52	63·32
3	Silk, manufactures of	33,307,112 37	19,654,946 28	59·01
4	Cotton, manufactures of	32,359,343 70	12,284,871 24	37·81
5	Flax, and manufactures of	23,088,891 13	7,584,342 87	32·85
6	Steel, and manufactures of	20,581,582 59	8,392,115 29	40 87
7	Iron, and manufactures of	20,305,343 60	8,198,388 64	40·37
8	Fruits, including nuts	18,157,686 79	4,606,455 38	25·35
9	Tin, manufactures of	16,797,321 75	5,075,052 15	30·21
10	Chemicals, drugs, and medicines	16,184,208 94	6,058,574 13	37·42
11	Breadstuffs not otherwise specified	12,667,786 23	3,754,719 38	29·66
12	Leather, and manufactures of	12,658,722 46	3,770,547 82	29·80
13	Hemp, jute, etc., and manufactures of	12,615,892 82	2,565,560 01	20·34
14	Spirits and wines	12,586,869 36	8,741,957 96	69·45
15	Tobacco, and manufactures of	10,515,906 00	7,661,687 64	72·86
16	Wood, and manufactures of	9,580,364 12	1,702,096 20	17·87
17	Earthenware and china	8,693,272 62	3,746,488 74	43·10
18	Fancy articles	7,908,102 43	3,039,082 96	38·43
19	Diamonds (cut), cameos, mosaics, etc.	7,608,752 51	761,488 41	10·01
20	Glass, and manufactures of	7,597,897 43	4,182,616 58	55·05
21	Furs, and manufactures of	5,142,022 65	1,130,574 90	21·99
22	Embroideries	4,929,445 37	1,725,805 88	35·00
23	Buttons and button materials	4,061,298 00	1,160 895 50	28·57
24	Animals, living	4,030,822 51	806,164 47	20·00
25	Books and other printed matter	3,109,702 66	771,508 05	24·81
26	Paintings, etc., not by American artists	3,068,673 34	309,847 94	10·08
27	Clocks and watches	2,960,908 04	784,443 11	26·49
28	Braids, plaits, flats, laces, trimmings, etc	2,360,783 55	708,221 57	30·00
29	Coal	2,084,151 46	515,097 23	24·71
30	Paper, and manufactures of, not otherwise specified (except books)	1,864,549 30	645,691 34	34·63
31	Provisions, not otherwise specified	1,857,447 42	407,462 74	21·94
32	Spices	1,682,168 23	873,885 70	51·95
33	Seeds	1,542,996 78	314,228 59	20·36
34	Fish	1,474,958 68	357,978 61	24·27
35	Metals, and manufactures of, not otherwise specified	1,489,445 09	423,917 08	28·46
36	Musical instruments and strings	1,486,251 15	445,898 19	30·00
37	Salt	1,476,946 43	705,844 48	47·79
38	Paints and colors	1,284,206 11	422,244 58	32·88
39	Bristles	1,193,797 00	147,586 09	12·36
40	Beer, ale, and porter	1,146,796 74	511,382 75	44·59
41	Potatoes	1,091,990 08	358,544 81	32·38
42	Hair, and manufactures of	1,021,328 25	217,189 78	21·26
43	Hay	954,813 09	95,486 21	10·00
44	Vegetables, not otherwise specified	894,232 58	176,082 14	19·68
45	Zinc, and manufactures of	802,932 81	332,428 27	41·40
46	Hats, bonnets, and hoods	802,396 67	320,958 68	40·00
47	Cement	802,294 06	160,458 80	20·00
48	Mats and matting	702,274 76	208,795 13	29·73
49	Oils, vegetable, fixed or expressed	684,709 01	317,086 63	46·31
50	Corsets and corset-cloths	684,074 20	242,623 61	35·47
51	Marble, and manufactures of	607,630 82	385,576 65	63·51
52	Jewelry, not elsewhere specified	592,978 15	148,244 53	25·00
53	Brass, and manufactures of	570,666 57	182,664 30	32·01
54	Glue	450,861 13	90,072 23	20·00
55	Brushes of all kinds	434,705 74	173,882 27	40·00
56	Pickles, not otherwise provided for	369,919 28	122,471 75	33·00
57	Gold and silver, manufactures of	339,670 76	113,707 81	33·48
58	Soap	304,118 77	136,810 63	44·99
59	India-rubber, manufactures of	288,956 79	91,358 29	32·16
60	Oils	257,140 07	83,233 42	32·37
61	Clay	204,741 89	107,310 17	52·41
62	Copper, and manufactures of	191,285 02	65,210 16	34·09
63	All other dutiable articles	7,094,744 05	2,140,995 99	30·18
	Total dutiable	$493,916,383 81	$209,659,698 86	42·45
	Total free of duty	206,913,289 47	.....	.....
	Additional and discriminating duty	.....	977,594 51	.....
	Total	$700,829,673 28	$210,637,293 37	29·92

Of the total duties collected, 22·02 per cent. was collected on sugar, molasses, and confectionery; 15·42 per cent. on wool and manufactures thereof; 9·37 per cent. on manufactures

* The value of the merchandise entered for consumption amounted to $700,829,673, and embraced both goods entered for immediate consumption on arrival in the United States, and goods withdrawn from warehouse during the year for consumption. The value of the imports into the United States amounted to $723,180,914, embracing goods entered for immediate consumption on arrival, goods entered for transportation to interior ports without appraisement, and goods entered for warehousing awaiting the payment of duties.

of silk; 5·84 per cent. on manufactures of cotton; 3·91 per cent. on iron and manufactures thereof; 4 per cent. on steel and its manufactures; and 3·62 per cent. on flax and its manufactures. The aggregate amount of duties collected on these seven commodities and classes of commodities was $134,557,435.69, and 64·18 per cent. of the total amount.

The free goods entered in the fiscal year 1882 amounted to $210,721,981, and the dutiable goods to $505,491,967, making the total entries $716,213,948, as compared with $700,829,673 in 1883.

The following statement shows the amount of duties collected during each of the last two fiscal years on the six commodities yielding the greatest revenue:

ARTICLE.	1882.	1883.
Sugar, molasses, and confectionery	$49,193,812	$46,172,279
Wool and its manufactures	29,253,016	32,320,898
Iron and steel, and their manufactures	24,175,547	16,590,504
Manufactures of silk	22,683,137	19,654,946
Manufactures of cotton	12,227,108	12,284,371
Wines and spirits	6,771,488	8,741,958

The Reduction of Taxation.—The report of the Tariff Commission, appointed under the act of May 15, 1882, with a schedule of the changes in the rates of duties recommended by it, was submitted to Congress Dec. 4, 1882, the beginning of the second session of the Forty-seventh Congress. It was referred to the Committee on Finance in the Senate and to the Committee on Ways and Means in the House. The commission said that the average reduction in duties at which it had aimed was not less than 20 per cent., and that in its opinion it would reach 25 per cent. The Ways and Means Committee, on Jan. 16, 1883, reported a "bill to impose duties on imports and for other purposes." This measure was based on the commission's schedule of proposed duties, but made a less reduction in the duties on many important articles than that recommended by the commission. A computation made on the importations for the fiscal year ending June 30, 1882, showed that the reduction proposed by the committee would amount to $20,855,799.08 on $215,395,628.58 duties collected in that year, or less than 10 per cent. This bill was, however, never completed by the House. Its consideration was abandoned on the 17th of February, the House having, after a long and tedious discussion, passed upon only 45 of its 140 pages. In the mean time the same question was being considered by the Senate. A bill to reduce internal revenue taxation had passed the House at the preceding session, and was still pending in the Senate. This bill, having been recommitted to the Committee on Finance, was reported on January 4th with an amendment embracing an entire revision of the tariff, based like the House bill on the commission's report. The reduction of revenue which the bill would cause was estimated by the chairman of the committee (Senator Morrill) at $45,049,000 in the duties on imports and $34,790,324 on internal revenue, including national-bank taxes, making a total reduction of $79,839,324.* This bill, having been exhaustively debated, item by item, by the Senate, and amended in many particulars, passed that body on the 20th of February, and was sent to the House. The House adopted an amendment of its rules, declaring that it should be in order at any time during the remainder of the session by a majority vote to suspend the rules, declare a disagreement with the Senate amendments, and ask for a committee of conference on the bill; and that, if that motion should fail, the bill should remain on the Speaker's table, unaffected by the failure. This proposition was opposed by a minority of the House, who desired an opportunity to vote in favor of concurring in the Senate amendments, which provided for a greater reduction of duties than the unfinished House bill, and the Democratic members generally refrained from voting on it. The House non-concurred in the Senate amendments, and asked for a committee of conference on the 27th of February. The conference committee having submitted its report, the bill passed both houses and became a law, March 3, 1883. The changes made by the conference committee in the bill as it passed the Senate were mainly in the direction of an increase of rates. Among other changes the duty on iron-ore was raised from 50 cents a ton, as proposed by the Senate, to 75 cents; on pig-iron and wrought and cast scrap-iron, from $6.50 a ton of 2,240 pounds to $\frac{3}{10}$ of a cent a pound; on steel railway bars, weighing more than 25 pounds to the yard, from $\frac{7}{10}$ of a cent a pound to $17 a ton; on iron or steel T-rails, weighing not over 25 pounds to the yard, from $\frac{8}{10}$ to $\frac{9}{10}$ of a cent a pound; on steel not otherwise provided for, from 30 to 45 per cent. ad valorem; on manufactures of metal not otherwise provided for, from 35 to 45 per cent.; on sugar above No. 13 and not above No. 16, Dutch standard, from $2\frac{1}{8}$ to $2\frac{3}{8}$ cents a pound; on books, pamphlets, etc., from 15 to 25 per cent.; on salt in packages, from 10 to 12 cents a hundred pounds; and on salt in bulk, from 6 to 8 cents a hundred pounds. Books in a foreign language were taken from the free list and made subject to 25 per cent. duty. The chairman of the Senate Finance Committee, in explaining the conference report, said that if there should be no greater importations than in the year before, the aggregate reduction of taxation under the bill would probably be more than $75,000,000 a year. The report of the House conference committee said that the bill provided for an estimated aggregate reduction of $67,000,000, of which it was estimated that about $35,000,000 would

* The bill was afterward so amended, by the cutting down of the tax on tobacco in all its forms to one half the former rate, as to increase the reduction in internal revenue taxes, including the tax on the capital and deposits of national banks, to about $48,000,000.

result from the changes made in the internal revenue laws, and $30,000,000 to $32,000,000 from the cutting down of customs duties.

The act as passed repealed the tax on the capital and deposits of banks, bankers, and national banking associations; the stamp-tax on checks and drafts; and the tax on matches, perfumery, medicinal preparations, cosmetics, and the like. The tax on dealers in and manufacturers of tobacco was largely reduced; the tax on tobacco was reduced from 16 to 8 cents a pound; on cigars from $6 to $3 a thousand; and on cigarettes from $1.75 to 50 cents a thousand. The following are some of the more important changes in the rates of duty made by the bill:

The duty on sugar was reduced from rates ranging from $2\frac{3}{16}$ to 5 cents a pound, to rates ranging from $1\frac{4}{10}$ to $3\frac{1}{2}$ cents a pound; on clothing and combing-wools valued at less than 30 cents a pound, from 10 cents a pound and 11 per cent. ad valorem to 10 cents a pound; on carpet-wools, from 3 and 6 cents for different grades to $2\frac{1}{2}$ and 5 cents; on woolen cloths and other manufactures of wool not otherwise provided for, from 50 cents a pound and 35 per cent. ad valorem to 35 cents a pound and 35 and 40 per cent. ad valorem; on ready-made clothing and wearing-apparel of wool and worsted, from 50 cents a pound and 40 per cent. to 40 cents a pound and 35 per cent.; on silk goods, from 60 to 50 per cent. ad valorem; on hats of vegetable material, etc., from 40 to 30 per cent., and on such hat materials from 30 to 20 per cent.; on barley, from 15 to 10 cents a bushel; on cleaned rice, from $2\frac{1}{2}$ to $2\frac{1}{4}$ cents a pound; on bleached cottons (except jeans, etc.), from $5\frac{1}{2}$ to $3\frac{1}{2}$, 4, and 5 cents a square yard according to grade; on finer and lighter cotton prints (except jeans, etc.), from $5\frac{1}{2}$ cents a square yard and 20 per cent. ad valorem to 5 and 6 cents a yard and to 40 per cent. ad valorem for the higher-priced goods; on linens, etc., valued at above 30 cents a yard, from 40 to 35 per cent.; on raisins, from $2\frac{1}{2}$ to 2 cents a pound; on articles of fur, from 35 to 30 per cent.; on jute-butts, from $6 to $5 a ton; flat bar-iron of medium dimensions, from 1 to $\frac{8}{10}$ of a cent a pound; on pig-iron, from $7 a ton to $\frac{8}{10}$ of a cent a pound; on wrought scrap-iron, from $8 a ton to $\frac{8}{10}$ of a cent a pound; on steel railway-bars or rails, from $1\frac{1}{4}$ cent a pound to $17 a ton; on calfskins, from 25 to 20 per cent.; on musical instruments, from 30 to 25 per cent.; on molasses not above 56 degrees, from $6\frac{1}{4}$ to 4 cents a gallon; on tin plates or sheets, terne plates and tagger's tin, from $1\frac{4}{10}$ cent to 1 cent a pound; on woolen dress goods valued at not exceeding 20 cents a yard, from 6 cents a yard and 35 per cent., to 5 cents a yard and 35 per cent.; valued at above 20 cents, from 8 cents and 40 per cent. to 7 cents and 40 per cent. Considerable reductions were also made in the chemical schedule, and some additions were made to the free list. The duty on cotton laces, embroideries, etc., was advanced from 35 to 40 per cent.; on decorated china and porcelain-ware, etc., from 50 to 60 per cent.; on similar ware not decorated, from 45 to 55 per cent.; on all earthen, stone, and crockery ware, white, glazed or edged, not otherwise provided for, from 40 to 55 per cent.; on the finer grades of cotton hosiery, from 35 to 40 per cent.; on opium, from $6 to $10 a pound; on champagne and other sparkling wines, from $6 to $7 a dozen quarts; on still wines, from 40 to 50 cents a gallon; and on paintings and statuary, from 10 to 30 per cent. ad valorem.

The act also repealed the provisions of law requiring the cost of transportation from the place of production to the vessel in which shipment is to be made to the United States, the value of the covering of the goods, commissions, brokerage, export duty, and other charges for putting up, preparing, and packing for transportation or shipment, to be added to the dutiable value of merchandise. It further provided for the assessment of duties on all sugars not above No. 13 of the Dutch standard in color, according to their saccharine strength as shown by the polariscope test, instead of according to their color by the Dutch standard, as formerly.

The reduction of revenue thus far has not come up to the estimates of either the Tariff Commission or the committees of conference.

The reduction in the receipts from customs for the six months ending Dec. 31, 1883, as compared with the corresponding six months of 1882, was $12,546,157.37; in internal revenue, $13,930,432.15; and in the tax on capital and deposits of national banks, $2,971,146.28. The total decrease is at the rate of $58,895,471.60 a year.

The Commissioner of Internal Revenue, in his annual report for 1883, estimated that the aggregate amount of the reductions in internal revenue taxes would not be less than $37,000,000, but that the revenue from distilled spirits would be so increased as to make the aggregate receipts for the fiscal year at least $120,000, or about $24,700,000 less than for the fiscal year 1883. The actual receipts from internal revenue for the six months ending Dec. 31, 1883, were $60,814,896.27, or at the rate of $121,629,792.54 a year, conforming very nearly to the commissioner's estimate.

The reduction in the receipts from duties on imports for the six months is at the rate of but little more than $25,000,000, or less than 12 per cent. of the receipts for the fiscal year 1883. A computation made by the Bureau of Statistics shows that for the three months ending Sept. 30, 1883, as compared with the corresponding three months of 1882, the reduction in the average ad-valorem rates of duty on dutiable merchandise was only 2·12 per cent.—from 44·20 to 42·08 per cent. The reduction in the average ad-valorem rate of duty on both free and dutiable merchandise was from 32·12

to 30·48 per cent., or 1·64 per cent. The entries of dutiable merchandise for consumption fell off during the same period from $144,012,940 to $133,330,848.

The failure of the tariff revision to produce the expected reduction of revenue, and the plans for a further reduction which had been brought forward, were discussed by the President in his message, and by the Secretary of the Treasury in his report. The following extracts summarize the Secretary's views:

The question recurs: Shall we now seek again for that reduction which was not attained, and is it now advisable to attempt a reduction of the revenues for future years to arise from duties on imports? There was general agreement that a substantial reduction of the tariff should be made. The estimates of the Tariff Commission and of the Senate committee show what was the contemplated reduction. The actual results so far obtained indicate that the reduction labored for has not been effected by the new tariff act. It is to be considered, too, that the failure is not to be charged to the increase of importations keeping up the amount of customs revenue. The statistics of our foreign commerce show that there has not been an increase chargeable therewith. As to the principles of reduction, if a revision be practicable, there seems to be little disagreement. The reduction should be made on articles entering into general consumption as necessaries—as sugar, molasses, and the like—rather than upon luxuries; upon raw materials, rather than manufactured, with due regard to the fostering of domestic industries and occupations, especially those not fully established. In the report of this department last year, the reduction as applied to the principal classes of dutiable articles was considered somewhat in detail, and, adhering to the views there expressed, a repetition of them is unnecessary.

It may not be deemed expedient so soon to make again a revision of the tariff to effect a reduction. And there are considerations which are apt upon this head. The new tariff act went into operation, in all its parts, on the 1st day of July, 1883. There has gone by since then but little over one third of a fiscal year. It is a short time in which to learn with accuracy how so important and wide-reaching a law as that, touching all the business and industrial interests of the country, will permanently affect the revenues. It is known that in some respects the first effects of it may not be relied upon as stable. . . . On the whole, then, this department does not recommend an immediate revision of the tariff act. It adheres, however, to its conviction that ultimately the just and expedient method of relief from taxation, and of limiting the revenues to the needs of an economical Government, must be found in a reduction of the duties on imports. . . . . Propositions are made to repeal the whole system of internal revenue. As to this, I repeat my remark of last year: "I see no public sentiment or political action, indicating a desire on the part of taxpaying citizens to strike out this class of taxes."

The President said:

There are cogent reasons, however, why the national indebtedness should not be thus rapidly extinguished. Chief among them is the fact that only by excessive taxation is such rapidity attainable. In a communication to the Congress at its last session I recommended that all excise taxes be abolished except those relating to distilled spirits, and that substantial reductions be also made in the revenues from customs. A statute has since been enacted by which the annual tax and tariff receipts of the Government have been cut down to the extent of at least fifty or sixty millions of dollars. While I have no doubt that still further reductions may be wisely made, I do not advise the adoption at this session of any measures for large diminution of the national revenues. The results of the legislation of the last session of the Congress have not as yet become sufficiently apparent to justify any radical revision or sweeping modifications of existing law.

Notwithstanding these recommendations, a bill was reported by the Committee on Ways and Means of the House, March 11, 1884, placing wood, sawed or squared timber, sawed lumber, salt, and coal, on the free list, and making a "horizontal" reduction of 20 per cent. in the duties on all other articles, excepting wines, liquors, silks, precious stones, and certain kinds of glass, with the proviso that the rates shall in no case be reduced below those of the "Morrill" tariff of 1861, and that no article in the cotton schedule shall pay more than 40 per cent. ad valorem, no article in the woolen schedule more than 60 per cent., and no article in the metal schedule more than 50 per cent.

UNITED STATES FISH COMMISSION. The United States Fish Commission was established in 1871 by a joint congressional resolution, which became a law on February 9th. The text of the resolution is as follows:

Whereas it is asserted that the most valuable food-fishes of the coast and the lakes of the United States are rapidly diminishing in number, to the public injury, and so as materially to affect the interests of trade and commerce: Therefore,

Be it resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That the President be, and he hereby is, authorized and required to appoint, by and with the advice and consent of the Senate, from among the civil officers or employés of the Government, one person of proved scientific and practical acquaintance with the fishes of the coast, to be commissioner of fish and fisheries, to serve without additional salary.

SEC. 2. *And be it further resolved*, That it shall be the duty of said commissioner to prosecute investigations and inquiries on the subject, with the view of ascertaining whether any and what diminution in the number of the food-fishes of the coast and the lakes of the United States has taken place; and, if so, to what causes the same is due; and also, whether any and what protective, prohibitory, or precautionary measures should be adopted in the premises; and to report upon the same to Congress.

SEC. 3. *And be it further resolved*, That the heads of the Executive Departments be, and they are hereby, directed to cause to be rendered all necessary and practicable aid to the said commissioner in the prosecution of the investigations and inquiries aforesaid.

SEC. 4. *And be it further resolved*, That it shall be lawful for said commissioner to take, or cause to be taken, at all times, in the waters of the sea-coast of the United States, where the tide ebbs and flows, and also in the waters of the lakes, such fish or specimens thereof as may in his judgment, from time to time, be needful or proper for the conduct of his duties as aforesaid, any law, custom, or usage of any State to the contrary notwithstanding.

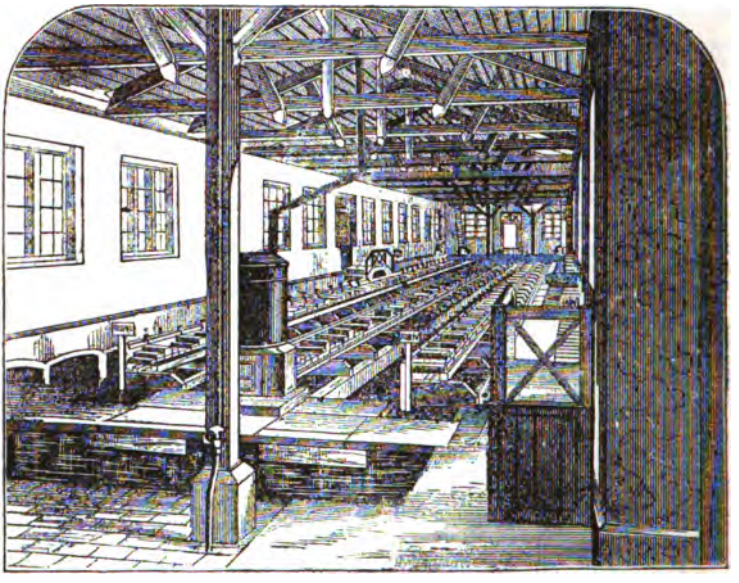
For fifteen or twenty years public interest in the fisheries had been constantly increasing, this being largely stimulated by the action of the French Government in fostering the still infant art of fish-culture, which, although discovered before the middle of the previous century in Germany, and never really abandoned in Europe, was not deemed worthy of government aid until the successes of Rémy and

Gehin were popularized by the brilliant genius of M. Coste, under whose directorship the first public fish-cultural station was planted at Hüningue, in Alsace. The publications and experiments of Fry, Garlick, Ainsworth, Atwood, Stone, Green, Slack, Lyman, and others, and especially the reproduction in this country of the admirable essay of M. Jules Haime on pisciculture, awakened everywhere a sense of the fact that our coast-waters were being rapidly depopulated, and of the counter-fact that their restoration was practicable through reparative and protective measures. Massachusetts appointed a Commissioner of Fisheries in 1865, and prior to 1870 her example was followed by several other States. The establishment in 1871 of the American Fish-Culturists' Association (now the American Fish-Cultural Association) marks the period at which interest in the fish and fisheries had become sufficiently great and wide-spread to warrant the founding of a national association.

The immediate cause of the establishment of the Government Commission was a difference of opinion between the governments of Massachusetts and Rhode Island as to the extent of the destructive effects of the trap and pound fisheries of southern New England, and the proper function of legislation in their regulation.

In 1872, at the instance of the American Fish-Culturists' Association, the commission was charged with the task of restoring fish to depleted waters, and its field of labor was thereby greatly extended.

The resolution establishing the office of Commissioner of Fisheries required that the person to be appointed should be a civil officer of the Government, of proved scientific and practical acquaintance with the fishes of the coast, to serve without additional salary. The choice was thus practically limited to a single man. Prof. Spencer F. Baird, at that time the Assistant Secretary (since 1878 Secretary) of the Smithsonian Institution, was appointed, and entered at once upon his duties.



ROOM IN HATCHERY AT HÜNINGUE, ALSACE.

It is generally admitted that the success of the Fish Commission work has been due entirely to the wise and energetic management of the commissioner, whose position, as an officer of the Smithsonian Institution, enabled him to secure at once the aid of a body of trained specialists.

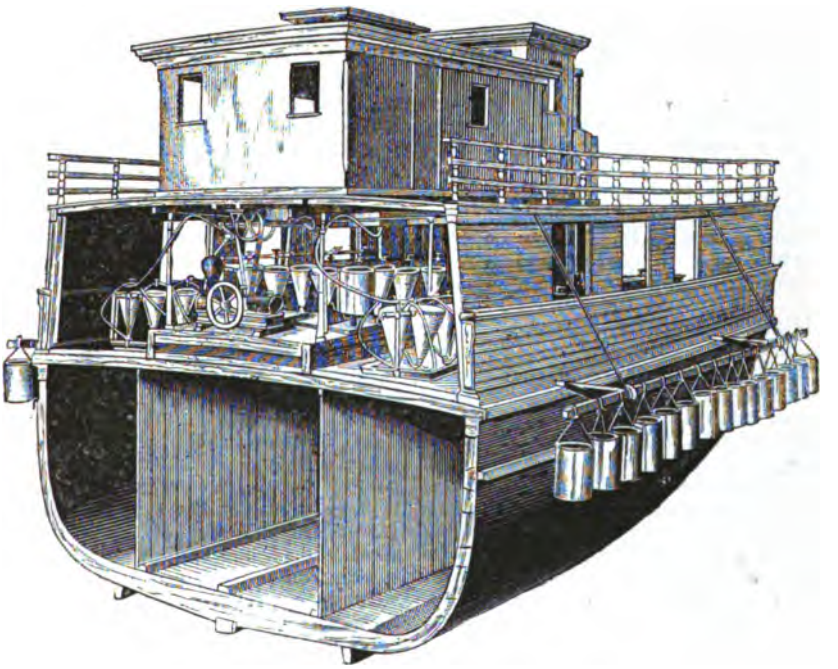
The principal activity of the commissioner has been directed to the wholesale replenishment of our depleted waters. The success of fish-culture is well recognized in the United States, and it was especially gratifying to its advocates that in 1880 the grand prize of the International Fisheries Exhibition at Berlin was awarded to Prof. Baird as the "first fish-culturist of the world," and that in 1883, at London, many gold and silver medals were awarded to the Fish Commission, in addition to others distributed among its officers and employés.

Division of the Work.—The work of the commission is naturally divided into three sections:

1. The systematic investigation of the waters of the United States, and the biological and physical problems which they present. Scientific research of this character is based upon a liberal and philosophical interpretation of the law. In making his original plans, the commissioner insisted that to study only the food-

fishes would be of little importance, and that conclusions, to be really useful, must rest upon a broad foundation of purely scientific investigation. The life-history of species of economic value should, of course, be understood from beginning to end, but no less requisite is it to know the histories of the animals and plants upon which they feed or upon which their food is nourished; to know the histories of their enemies and friends, and the friends and foes of their enemies and friends, as well as the currents, temperatures, and other physical phenomena of the waters in relation to migration, reproduction, and growth.

2. The investigation of the methods of fisheries, past and present, and the statistics of production and commerce of fishery products. Fishery methods and apparatus must be examined and compared with those of other lands, that the use of those which threaten the destruction of useful species may be discouraged, and that those which are inadequate may be replaced by others more serviceable. Statistics of industry and trade must be secured for the use of Congress in making treaties or imposing tariffs, also to show to producers the best markets, and to consumers from what source and wherewithal their needs may be supplied.



SECTION OF STEAMER FISH-HAWK.

3. The introduction and multiplication of useful food-fishes throughout the country, especially in waters under the jurisdiction of the General Government, or those common to several States, none of which would undertake to make expenditures for the benefit of their neighbors. The propagation of fish is at present by far the most extensive branch of the work of the commission, both in respect to the number of men employed and the money appropriated.

Since the oldest and most important fishery industries center in New England, the coast of this district must be the seat of the most active operations in marine research. For thirteen years the commissioner, with a party of specialists, has devoted the summer season to work at various stations along the coast from North Carolina to Nova Scotia. The routine of work is usually as follows: A suitable place having been selected, a temporary laboratory is fitted up with the necessary appliances for collection and study. In this are placed tables, often at headquarters as many as thirty, each occupied by an investigator, either an officer of the commission or a volunteer.

The work at a summer station includes all the various forms of activity known to naturalists: collecting along the shore, seining upon the beaches, setting traps for animals not otherwise to be obtained, and scraping with dredge and trawl the bottom of the sea at depths as great as can be reached by a steamer in a trip of several days. In the laboratory are carried on the usual structural and systematic studies, the preparation of museum specimens and of reports.

The permanent headquarters are now at Wood's Holl, Mass., where wharves are being built for the accommodation of the fleet of the

commission, and houses for use for scientific and fish-cultural laboratories, and where the propagation of sea-fishes will be continued on a larger scale than has hitherto been attempted.

For several years, steamers were lent for the summer work by the Secretary of the Navy, the Coast Survey, and the Revenue Service. In 1880, however, a steamer of 450 tons, the Fish-Hawk, was built for the commission. This being needed for fish-hatching purposes, another large steamer, of 1,000 tons, the Albatross, was built and put into commission in 1883. At the time of writing this article the Albatross is detailed in the service of the Hydrographic Office of the Navy, making a series of deep-sea soundings in the Caribbean Sea. Her trial-trips have been very fruitful in results to science.

Hundreds and even thousands of specimens of a single species are often obtained in a summer's work. After those for the National Museum have been selected, a great number of duplicates remain. These are identified, labeled, and made into sets for exchange with other museums, and for distribution to schools and small museums. Several specialists are employed solely in making up these sets and in gathering material required for their completion. Within three years fifty sets of fishes in alcohol, including at least 10,000 specimens, have been sent out, and fifty sets of invertebrates, embracing 175 species and 250,000 specimens. One hundred smaller sets of representative forms intended for educational purposes, to be given to schools and academies, are being prepared.

The arrangement of the invertebrate duplicates is in the charge of Richard Rathbun; of the fishes, in that of Dr. Tarleton H. Bean. Facilities have also been given to many institutions for making collections on their own behalf.

In addition to what has been done at the summer station, and by the vessels of the commission at sea, investigations have been carried on by smaller parties everywhere in our coast and interior waters.

The co-operation of the Superintendent of the Life-saving Station has been of great importance in obtaining knowledge of the occurrence of unusual marine animals on remote portions of the coast. The patrols of the life-saving stations visit nearly every part of the Atlantic coast daily, and report by telegraph to Washington the stranding of whales, porpoises, sharks, etc. When the importance of the case seems to warrant it, naturalists are sent to study and bring in these animals for preservation.

One important feature in this work has been the preparation of life-histories of the principal fishes, great quantities of material having been accumulated relating to almost every species. A portion of this has been published, including biographical monographs on the blue-fish, the scup, the menhaden, the salmon, the white-fish, the shad, the mackerel, and the sword-fish; and others are being printed.

The temperature of the water, in its relation to the movements of fish, has from the first received special attention. Observations are made regularly during the summer work, and at the various hatching-stations. At the instance of the commissioner, an extensive series of observations has for several years been made under the direction of the Chief Signal-Officer of the Army, at lighthouses, light-ships, life-saving and signal stations, carefully chosen, along the whole coast. One practical result of the study of these observations has been the demonstration of the cause of the failure of the menhaden-fisheries on the coast of Maine in 1879—a failure on account of which nearly two thousand persons were thrown out of employment; another, the explanation of the variations in the shad-fisheries of the Potomac from 1881 to 1883.

A series of analyses is being made by Prof. W. O. Atwater to determine the chemical composition and nutritive value of fish as compared with other articles of food. (See page 342 of this volume.)

In connection with the work of fish-culture much attention has been paid to embryology. The breeding-times and habits of nearly all of our fishes, and their relations to water-temperatures, have been studied. The embryological history of a number of species, such as the cod, shad, alewife, salmon, smelt, Spanish mackerel, striped bass, white perch, and the oyster, have been obtained under the auspices of the commission, by Messrs. Ryder, Brooks, and others.

The second branch of the work, the investigation of the statistics and history of the fisheries, has perhaps assumed greater proportions than was at first contemplated. It has been said above that one of the immediate causes of the establishment of the commission was the dissension between the line and net fishermen of southern New England with reference to laws for the protection of the deteriorating fisheries of that region. The first work of Prof. Baird, as commissioner, was to investigate the causes of this alleged deterioration, and the report of that year's work included much statistical material. In the same year a zoölogical and statistical survey of the great lakes was accomplished, and various circulars were sent out in contemplation of the preparation of monographic reports upon special branches of the fisheries.

In 1877 the commissioner and his staff were summoned to Halifax, to serve as witnesses and experts before the Halifax Fishery Commission, then charged with the settlement of the amount of compensation to be paid by the United States for the privilege of participating in the fisheries of the provinces. The information available concerning the fisheries was found to be so slight and imperfect that a plan

for systematic investigation of the subject was arranged and partially undertaken. This work was carried on for two seasons, receiving some financial aid from the Department of State. In 1879 an arrangement was made with the Superintendent of the Tenth Census, who agreed to bear a part of the expense of carrying out the scheme in full. Thirty trained experts were for several months engaged in the gathering of material for a statistical report on the history and present state of the fisheries of the United States. This has since been finished, and is now being published. Many of the statistical results, being the first which have ever been prepared as the outcome of an examination of the fishery centers by experienced statisticians, are shown in the accompanying table.

STATISTICS OF THE FISHERIES OF THE UNITED STATES IN 1880.

Prepared for the Tenth Census, under the direction of G. Brown Goode.

STATES AND TERRITORIES.	Persons employed.	Capital invested.	Value of products.	Vessels.		Value of minor apparatus and outfits.	Other capital including shore property.
				No.	Tonnage.		
The United States	181,426	$37,955,849	$48,046,058	6,605	208,297·82	$8,145,261	$17,937,413
New England States	37,048	$19,937,607	$14,270,393	2,066	113,602·59	$5,088,171	$9,597,885
Middle States, exclusive of Great Lake fisheries	14,981	4,426,078	5,676,579	1,210	23,566·93	674,951	1,822,480
Southern Atlantic States	52,418	8,951,722	9,602,787	3,014	60,886·15	1,145,578	4,759,886
Gulf States	5,131	545,584	1,227,544	197	3,009·86	52,828	134,587
Pacific States and Territories	16,808	2,748,888	7,484,750	56	5,468·42	467,238	1,330,000
Great Lakes	5,050	1,345,975	1,784,050	62	1,768·87	756,200	313,175
Alabama	635	$38,200	$119,275	24	317·20	$7,000	$6,400
Alaska	6,130	447,000	2,661,640	....	....	7,000	380,000
California	3,094	1,139,675	1,860,714	49	5,246·80	205,240	307,000
Connecticut	8,131	1,421,020	1,456,866	291	9,215·95	375,585	457,850
Delaware	1,979	265,231	997,695	69	1,226·00	70,324	113,080
Florida	2,480	406,117	643,227	124	2,152·97	39,927	65,037
Georgia	899	78,770	119,998	1	12·00	18,445	44,450
Illinois	300	83,400	60,100	3	209·78	11,900	61,000
Indiana	52	29,360	32,740	1	21·90	20,210	5,000
Louisiana	1,599	93,621	392,610	49	539·69	18,000	50,000
Maine	11,071	3,375,994	3,614,178	606	17,632·65	934,508	1,562,230
Maryland	26,008	6,342,443	5,221,715	1,450	43,500·00	297,145	4,108,850
Massachusetts	20,117	14,334,450	8,141,750	1,054	83,282·17	3,528,925	7,262,600
Michigan	1,781	442,665	716,170	36	914·42	272,920	60,905
Minnesota	35	10,160	5,200	1	33·59	3,760	500
Mississippi	136	8,800	22,540	....	....	1,600	2,600
New Hampshire	414	209,465	176,684	23	1,019·05	60,385	89,809
New Jersey	6,220	1,492,202	3,176,589	590	10,445·90	232,339	490,000
New York	7,266	2,629,585	4,380,565	541	11,582·51	390,200	1,171,900
North Carolina	5,274	506,561	845,695	95	1,457·90	225,486	118,950
Ohio	1,046	473,800	518,420	9	359·51	258,795	151,775
Oregon	6,835	1,131,350	2,781,024	....	....	245,750	639,000
Pennsylvania	532	119,310	320,050	11	321·99	40,588	55,500
Rhode Island	2,310	596,678	880,915	92	2,502·77	138,733	204,850
South Carolina	1,005	66,275	212,482	22	337·32	25,985	15,500
Texas	601	42,400	128,800	....	....	4,400	23,000
Virginia	18,864	1,914,119	3,124,444	1,446	15,578·98	560,763	489,686
Washington	744	30,358	181,372	7	216·62	8,648	4,000
Wisconsin	800	222,840	253,100	11	220·25	145,165	26,000

The third and last department of the work is that of propagation. The various States have numerous laws for the protection of fish and fishermen, generally worse than useless, though there are many definitions of close-time, which appear to be beneficial. To enforce these laws would, however, render necessary a large number of fish-wardens. The policy of the United States Commissioner has been, to carry out the idea that it is better to expend a small amount of public money in making fish so plenty that they can be caught without restriction, to serve as cheap food for the people at large, rather than to employ a much larger amount in preventing the people from catching the few that still remain after generations of improvidence.

The propagation-work has increased in importance from year to year, as may be seen by the constant increase in the amount of the annual appropriation. A review of the results of the labors of the commission, in increasing the food-supply of the country, may be found in the annual reports; the rude appliances of fish-culture in use ten years ago have given way to scientifically devised apparatus, by which millions of eggs are hatched where thousands were, and the demonstration of the possibility of stocking rivers and lakes to any desired extent has been greatly strengthened.

This work, from 1871 to 1877, was most efficiently directed by James W. Milner, whose untimely death was caused by his over-strenuous labors in fish-culture. It is now under the immediate direction of Maj. T. B. Ferguson, Assistant Commissioner, by whom much of the machinery for fish-culture on a gigantic scale, by the aid of steam, was devised, and Col. Marshall McDonald, Chief of the Division of Propagation. The work of the commission in fish-culture has been that of stimulation and co-operation, which has been extended to the State Fish Commissions and to fish-culturists in every part of the world.

Hatching-Stations.—As the operations of the commission have increased, and the propagation of additional species has been undertaken, it has been found desirable to increase the number of hatching-stations. These are of two kinds, known as collecting and distributing stations. The former are near the spawning-grounds of those species for which they are especially intended. The eggs are secured at these stations, and enough having been reserved to stock the waters of that region, the remainder are sent to distributing stations, to be hatched and shipped to the waters for which they are intended. The following is a list of the hatching-stations operated by the United States Fish Commission in 1883, for which we are indebted to R. Edward Earll:

1. Grand Lake Stream, Me., station for collecting eggs of the Schoodic salmon (*Salmo salar*, subsp. *sebago*).

2. Bucksport, Me., station for collecting and hatching eggs of the Atlantic salmon (*Salmo salar*), and for hatching eggs of white-fish (*Coregonus clupeiformis*), to be distributed in the waters of the State.

3. Wood's Holl, Mass. Permanent coast-station, which serves as a base of operations for the scientific investigations of the commission, and as a hatching-station for the eggs of the cod (*Gadus morrhua*) and other sea-fishes.

4. Cold Spring Harbor, Long Island, N. Y. Station for hatching eggs of various species of *Salmonidæ* for distribution in New York and vicinity; also work with salt-water fishes, as cod, etc.

5. Havre de Grace, Md. Station located on Battery island, in the Susquehanna river, for the purpose of collecting and hatching eggs of the shad (*Clupea sapidissima*).

6. Washington, D. C.

(*a.*) National Carp Ponds. Ponds for the propagation of the three varieties of carp (*Cyprinus carpio*), and the gold-fish (*Carassius auratus*), the golden ide (*Idus melanotus*, var. *auratus*), and the tench (*Tinca vulgaris*).

(*b.*) Arsenal Ponds. Ponds for the propagation of carp (*Cyprinus carpio*).

(*c.*) Navy-Yard. Station for collecting and hatching eggs of the shad (*Clupea sapidissima*).

(*d.*) Central hatching-station. A station fully equipped for scientific experiments connected with the propagation of fishes. The station is also provided with apparatus for hatching the eggs of all the more important species, including light, heavy, and adhesive eggs. It is the principal distributing station of the Fish Commission, for both eggs and young fish, to all portions of the United States.

7. Wytheville, Va. A station for hatching eggs of brook-trout (*Salvelinus fontinalis*) and California trout (*Salmo irideus*).

8. Saint Jerome's Creek, Point Lookout, Md. A station for the artificial propagation of the oyster (*Ostrea Virginiana*), the Spanish mackerel (*Scomberomorus maculatus*), and the banded porgy (*Chætodipterus faber*).

9. Avoca, N. C. A station on Albemarle Sound, at the junction of Roanoke and Chowan rivers, for collecting, hatching, and distributing eggs of the shad (*Clupea sapidissima*), alewife (*Clupea vernalis* and *æstivalis*), and striped bass (*Roccus lineatus*).

10. Northville, Mich. A hatching-station for the development and distribution of eggs of the white-fish (*Coregonus clupeiformis*). This station is also provided with tanks and ponds for the spawning, hatching, and rearing of brook-trout (*Salvelinus fontinalis*) and California trout (*Salmo irideus*).

11. Alpena, Mich. A station for the collection and development of the eggs of the white-fish (*Coregonus clupeiformis*).

12. Baird, Cal.

(*a.*) Salmon-station. A station on the McCloud river for the development and distribution of eggs of the California salmon (*Oncorhynchus chouicha*).

(*b.*) Trout-ponds. A station near Baird, for collecting, developing, and distributing eggs of the California trout (*Salmo irideus*).

PROCESS OF TAKING SALMON-EGGS.

13. Clackamas river, Oregon. A station on Columbia river for collecting and hatching eggs of the California salmon (*Oncorhynchus chouicha*).

Appropriations and Prizes.—The following statement of the money appropriated for the work of the United States Fish Commission, from its organization in 1871 to the fiscal year 1882-'83, is from the records of the commissioner:

APPROPRIATIONS FOR THE UNITED STATES FISH COMMISSION.

YEAR.	Inquiry.	Propagation.	Hatcheries and ponds.	Steamers, car, etc.	Illustration.	Total.
1871-'72	$8,500					$8,500 00
1872-'73	5,000	$25,000			$500	30,500 00
1873-'74	5,000	32,500			1,000	38,500 00
1874-'75	5,000	17,500			1,000	23,500 00
1875-'76	5,000	65,000			1,000	71,000 00
1876-'77	5,000	30,045			1,000	36,045 00
1877-'78		67,500	$2,200 00		1,000	70,700 00
1878-'79		70,000	5,000 00		1,000	76,000 00
1879-'80	8,500	90,000	5,000 00	$57,500	1,000	157,000 00
1880-'81	8,500	85,000	17,000 00	15,000	1,000	121,500 00
1881-'82	8,500	130,000	20,001 45	174,209*	1,000	328,710 45
1882-'83	8,500	115,000	30,000 00	79,500†	1,000	229,000 00
	$47,500	$727,545	$79,201 45	$326,209	$10,500	$1,190,955 45

* Of this amount, $1,500 was for rent of offices. † Including $8,000 for a car and $1,500 for office-rent.

Besides the above, Congress appropriated $20,000 to enable the United States to participate in the International Fisheries Exhibition at Berlin in 1880, and $50,000 for our representation at the International Exhibition in London in 1883, and in both cases the highest honors were awarded to the exhibits of the United States. An inspection of the table will show that more than one third of all the money disbursed by the United States Fish Commission has been devoted to permanent improvements.

At the International Fisheries Exhibition held in London from May 10 to November 1, 1883, which was the largest representation ever made of a single industry, the United States received more than one fifth of all the awards given to foreign and colonial government displays. A much larger proportion of gold medals fell to our lot than was received by any other country. This result was due mainly to the participation of the United States Fish Commission and National Museum, whose exhibits called forth the highest praise and were awarded the most substantial honors. The table in the preceding column, showing the relative standing of the competing countries, is based upon the official list of jury awards.

INTERNATIONAL FISHERIES EXHIBITION, LONDON, 1883.
Jury Awards to Foreign and Colonial Countries.

	COUNTRIES.	Gold medals.	Silver medals.	Bronze medals.	Diplomas.	Total.
1	United States	50	47	30	41	168
2	Norway	28	70	40	7	145
3	Sweden	27	36	40	19	122
4	Canada	17	15	6	4	42
5	New South Wales	11	9	4	1	25
6	Newfoundland	10	9	4	3	26
7	Spain	9	17	13	3	42
8	Russia	7	21	19	6	53
9	Netherlands	6	11	6	5	28
10	India	4	5	4	2	15
11	Italy	4	3	2	..	9
12	France	3	6	8	3	20
13	Denmark	3	2	9	2	16
14	China	2	3	..	1	6
15	Tasmania	1	4	..	..	5
16	Greece	1	3	..	..	4
17	Bahamas	1	1	1	1	4
18	Chili		2	2	..	4
19	Germany		1	3	1	5
20	Belgium		1	3	1	5
21	Jamaica		1	2	5	8
22	Straits Settlements		1	2	..	3
23	Austria-Hungary		1	..	..	1
24	Tunis		1	..	..	1
25	Ceylon		1	..	..	1
26	Japan		..	2	1	3
	Total	184	271	200	106	761

Publications of the Commission.—The regular official publications of the Fish Commission are in two octavo series: 1. The report of the commissioner, issued in yearly parts. Each volume consists of two sections, the first being the report proper, containing the commissioner's summary of the year's work, together with his recommendations, practical suggestions, and the announcement of his plans for future activity. This is issued in advance of the full volume, which usually appears about two years later than its date. The second part, five or six times as large as the first, contains the contributions and reports of the officers and collaborators of the commission, together with translations of similar writings by European authorities.

The "Bulletin of the Fish Commission" was established in 1881. One volume of about 500 pages is distributed each year.

The commission is now publishing a report in quarto volumes, with illustrations, upon the fishery industries of the United States, the result in part of the alliance with the Census Office in 1880. The statistical results of this alliance will occupy a volume of the census series. A special bulletin was published in 1880, consisting of the original edition of Elliott's monograph on the seal islands of Alaska. Much material collected by and relating to the work of the commission is published in the Proceedings and Bulletins of the United States National Museum. Bulletin 27, now (April, 1884) going through the press, is a catalogue of the collections exhibited by the United States at the London Fisheries Exhibition, and contains a

summary of the present condition of the various departments of work. The publications of the commission up to 1884 include 9,296 pages, besides 2,397 pages of the Bulletins of the National Museum. In Mr. C. W. Smiley's list, which extended to August, 1883, 1,077 papers are mentioned, and this list does not include nearly all of those pertaining to the work which have been printed in outside journals.

History of Yearly Work.—The following summary of the annual work of the commission is expanded from a paper entitled "The First Decade of the United States Fish Commission," read before the American Association for the Advancement of Science, at its Boston meeting in 1880:

1871.—The commissioner, with a party of zoölogists, established the first summer-station at Wood's Holl, Mass., other assistants being engaged in a similar work at Cape Hatteras and on the great lakes. He also personally investigated the alleged decrease of the fisheries in southern New England, taking the testimony of numerous witnesses.

1872.—The summer-station was at Eastport, Me., particular attention being paid to the herring-fisheries. The survey of the great lakes was continued. Dredging, under the direction of Prof. Packard, was begun on the off-shore banks. At the instance of the American Fish-cultural Association, Congress requested the commissioner to take charge of the work of multiplying valuable food-fishes throughout the country. Work was begun on the shad, salmon, and white-fish, and the eggs of the European salmon were imported.

1873.—The summer-headquarters were fixed at Portland, Me. The opportunities for research were greatly increased by the aid of the Secretary of the Navy, who granted the use of an eighty-ton steamer. Explorations in the outer waters, between Mount Desert and Cape Cod, were carried on in the United States coast-surveying steamer Bache. Operations in fish-culture were carried on upon an extensive scale.

1874–'75.—In 1874 the zoölogical work centered at Noank, Conn. The attempt was made to introduce shad into Europe. In 1875 the station was for a second time at Wood's Holl, where a permanent sea-side laboratory, with aquaria, was now established. The number of investigations this year was about twenty. The increase in the propagation-work was proportionately much larger.

1876.—The commissioner was unable to take the field for fishery investigations, having been instructed to exhibit, in behalf of the commission, the fishes and useful invertebrates, as well as the methods of fish-culture and the American fisheries, at the Philadelphia International Exhibition. Much, however, was accomplished by single investigators in various localities. The propagation-work continued. This year the first carp were introduced from Germany.

1877.—The field of investigation was resumed at Salem, Mass., and later at Halifax, N. S. A larger steamer, of 300 tons, made deep-sea research possible. The commissioner and his staff served as experts before the Halifax Fishery Commission. The propagating work was on the increase, and the Government carp-ponds were established in Washington.

1878–'79.—In 1878 the summer-station was at Gloucester, Mass., in 1879 at Provincetown. These centers of the fishing interests were selected that more attention might be devoted to studying the history, statistics, and methods of the sea-fisheries; a plan for the systematic investigation which seemed yearly more necessary, in view of the dissensions between the Governments of the United States and Great Britain. In 1879 a combination was formed with the Superintendent of the Tenth Census, by which the commissioner was enabled to carry forward this branch of the work more rapidly. Specialists were dispatched to all parts of the country, to study the biological, statistical, and practical aspects of the fisheries. In 1878 the breeding of cod and haddock was accomplished at Gloucester. In 1879 the propagation of the oyster was accomplished, by co-operation with the Maryland Commission, under the direction of Maj. Ferguson, and the distribution of the carp throughout the country was begun.

1880.—The summer-station was at Newport, R. I. The Fish-Hawk, a steamer of 484 tons, constructed expressly for the work, lies at the wharf, now equipped for scientific research, later to be employed in the propagation of sea-fish, such as the cod and the mackerel. Over fifty investigators are in the field in the service of the commission. The season was opened by the participation of the commission in the International Exhibition at Berlin. The first-honor prize, the gift of the Emperor of Germany, was awarded to Prof. Baird.

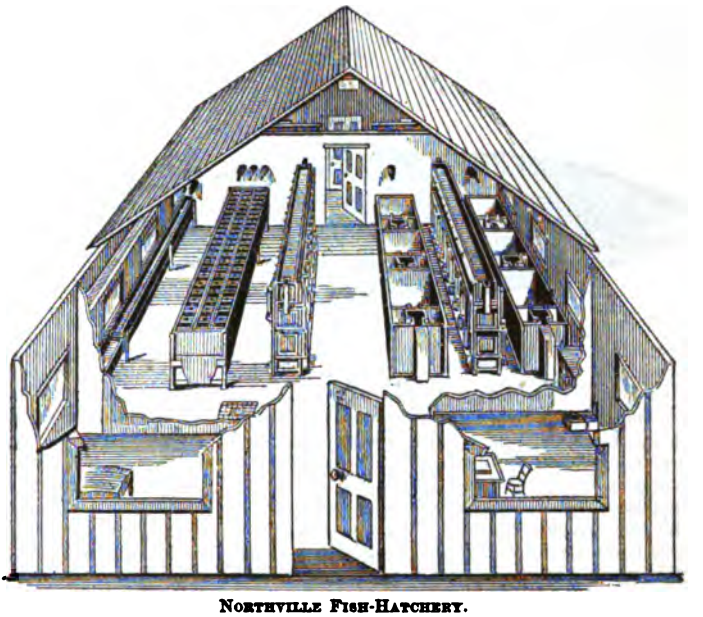
1881.—The summer-station was at Wood's Holl, Mass. The investigation of the area of distribution and the economical qualities of the *tile-fish* was one of the practical results of the work of the season. A railway-car was constructed for the express purpose of distributing fish, and an entire change was effected in the methods of fish transportation. Experiments were made in hatching cod and Spanish mackerel, and in the retardation of the development of shad-eggs. Land was acquired at Wood's Holl for a permanent station for hatching cod and other sea-fishes and for general biological research. The publication of the "Bulletin" of the Fish Commission was begun. Fishery bulletins were issued relative to the fisheries of the Pacific Coast States, the Great Lakes, Maine, Virginia, and the oyster industry.

1882.—The summer-station was again at Wood's Holl, and the explorations of the Fish-Hawk from this place were conducted mainly in the Gulf Stream, resulting in the acquisition of much valuable material and information. Congress appropriated money for building a pier in Great Harbor, Wood's Holl. The Armory station in Washington was fitted up for hatching enormous quantities of eggs of food-fishes, and railroad-tracks were laid within the inclosure, so that the Fish Commission cars can be loaded from the doors of the hatchery. The white-fish hatchery at Alpena, Mich., was established; $50,000 was appropriated for the representation of the United States at the London Fisheries Exhibition, under the charge of the United States Fish Commission. The station for rearing California trout at Wytheville, Va., and that for propagation of the oyster at St. Jerome's creek, Md., passed into the possession of the Government. The fishery census of 1880 was practically completed. Congress ordered the publication of a report on American fish and fisheries. The disappearance of the tile-fish in the North Atlantic was demonstrated. The steamer Albatross was completed.

1883.—Wood's Holl, Mass., was again occupied as a summer-station, and the deep-sea investigations of the Albatross, begun off Chesapeake Bay early in the season, were continued from this place with surprising results. The United States exhibit in London in charge of the commissioner, Mr. G. Brown Goode, was successful over all other competitors, owing mainly to the participation of the Fish Commission and the National Museum. The feasibility of the artificial rearing of oysters was shown by Mr. J. A. Ryder, Embryologist of the Commission, at Chincoteague Bay, Md. The distribution of fishes was enormously increased.

Work at the Principal Stations.—The hatchery at Northville, Mich., was established in 1874 by N. W. Clark. In 1880 it passed into the control of the United States Fish Commission, and continued under the care of Frank N.

Clark, who has developed it into one of the most important stations in the world for the treatment of eggs of the *Salmonidæ*—brook-trout, lake-trout, white-fish, rainbow-trout, and California salmon. It is especially active in the propagation of the white-fish, having, from 1874 to 1883, distributed more than 20,000,000 eggs and upward of 80,000,000 of the young of that species. Up to 1879 Mr. Clark hatched 1,600,000 California salmon; since that date the hatching of that species at Northville has been discontinued. Of the landlocked salmon, 104,000 have been hatched; 633,000 eggs and 310,000 young of the brook-trout have been shipped; 250,000 eggs and 127,000 young of the lake-trout were distributed; 247,500 rainbow-trout were hatched and sent out. White-fish have been planted mostly in the great lakes, but large numbers of them have been forwarded, also, to Michigan, California, Nevada, Maine, Iowa, Minnesota, Kentucky, Pennsylvania, Connecticut, New Jersey, Maryland, New Hampshire, North Carolina, Germany, New Zealand, and France. Lake-trout eggs have been successfully sent to Germany and France. Brook-trout eggs have safely reached Germany, France, England, and South America. By the aid of refrigeration for retarding the development of white-fish eggs, Mr. Clark expects to be able to hatch 500,000,000 annually at Northville. The Northville hatchery has a series of natural and artificial ponds, in which are kept brook-trout, rainbow-trout, landlocked salmon, and lake-trout for breeding. In the autumn of 1882 the United States Commissioner built a second white-fish hatchery at Alpena, Mich., and placed it under the charge of Mr. Clark. This establishment has a nominal capacity for 100,000,000 eggs. In the two hatcheries at Alpena and Northville there were produced, in the winter of 1883–'84, over 100,000,000 eggs of the white-fish, and the total number of young fish to be placed in the great lakes in 1884, by these and the various State hatcheries, will exceed 225,000,000. The fishermen of the great lakes admit that, without public fish-culture, half of them would be obliged to abandon their calling.



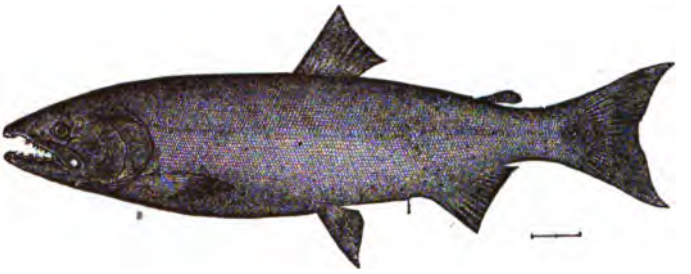
NORTHVILLE FISH-HATCHERY.

The hatchery for Atlantic salmon at Bucksport, Maine, is under the direction of Charles G. Atkins. The supply of living salmon is obtained early in June, from weirs in the Penobscot river, on the shores of Verona island. The fish are transported by water in tanks made out of fishing-boats, for more than seven miles, to the ponds adjoining the hatchery, and are there confined until the breeding-season, which is late in October and in November. At the proper time the eggs and milt are taken, and the salmon are released. Since 1871 nearly 15,000,000 eggs have been distributed. The Schoodic salmon-breeding establishment, on Grand Lake stream, Maine, is also in charge of Mr. Atkins. Here the fish are intercepted in the stream on their way to their spawning-grounds, and led into inclosures of netting, where they are kept until the supply of eggs is obtained. After that the breeders are carried back into the lake and liberated. From 1875 to 1883 this establishment distributed 10,249,500 eggs of the landlocked salmon, and

ATLANTIC SALMON (*Salmo salar*).

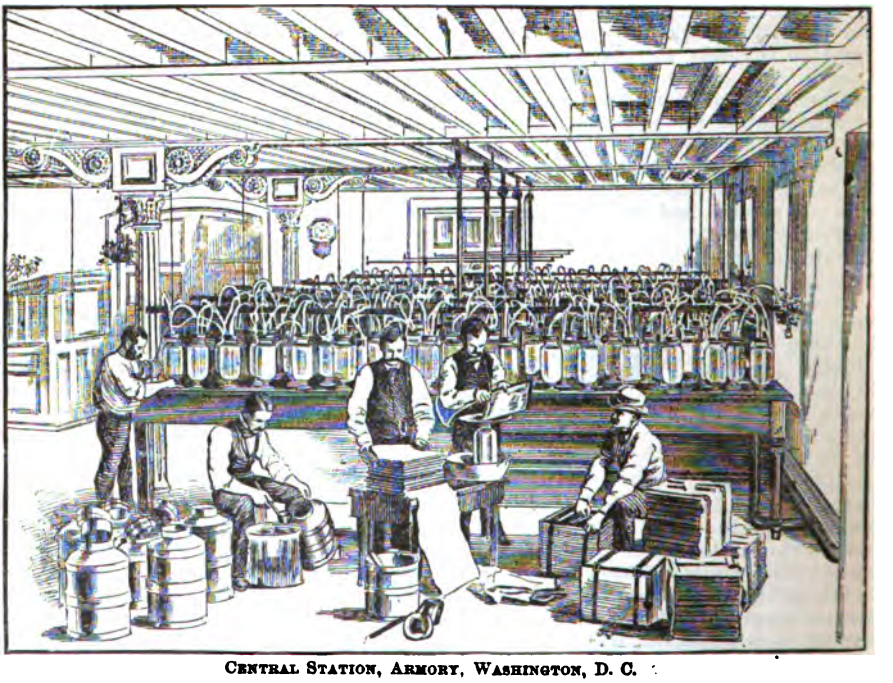
they have been successfully introduced into lakes of Maine, New York, and other States, and even as far south as North Carolina.

The California salmon-hatchery, on the McCloud river, was established in 1872, under the direction of Livingston Stone, who has made it the greatest station of the kind in existence. The native salmon are stopped in their ascent of the river by a dam near the hatchery, and they congregate in vast numbers. In 1877 Mr. Stone built the salmon-hatching establishment on Clackamas river, Oregon, and in 1879 the McCloud river trout-pond station was established for treating eggs of the rainbow-trout. Mr. Stone has summarized the work of the salmon station in the following words: "In the eleven years since the salmon-breeding station has been in operation, 67,000,000 eggs have been taken, most of which have been distributed in the various States of the Union. Several millions, however, have been sent to foreign countries, including Germany, France, Great Britain, Denmark, Russia, Belgium, Holland, Canada, New Zealand, Australia, and the Sandwich Islands. About 15,000,000 have been hatched at the station, and the young fish placed in the McCloud and other tributaries of the Sacramento river. So great have been the benefits of this restocking of the Sacramento, that the statistics of the salmon-fisheries on the Sacramento show that the annual salmon-catch of the river has increased 5,000,000 pounds during the past few years."



CALIFORNIA SALMON (*Oncorhynchus chouicha*).

The principal shad-hatching station of the United States is in the Armory, Army Square, Washington. This building now has all the modern appliances for the work, and can accommodate an unlimited number of eggs. Nearly 50,000,000 were received there in one year. Eggs are received from small camps from fifty to one hundred miles away, and the fry are shipped in cars constructed for fish-transportation. The station near Havre de Grace, in the lower waters of the Susquehanna river, is also important, and it has the advantage of a large pool in which shad may be confined until their eggs are ripe. Fully 70,000,000 eggs of shad have been hatched in a single year at all the stations of the commission. Instances of great improvement might be cited in connection with nearly every shad-river in the



CENTRAL STATION, ARMORY, WASHINGTON, D. C.

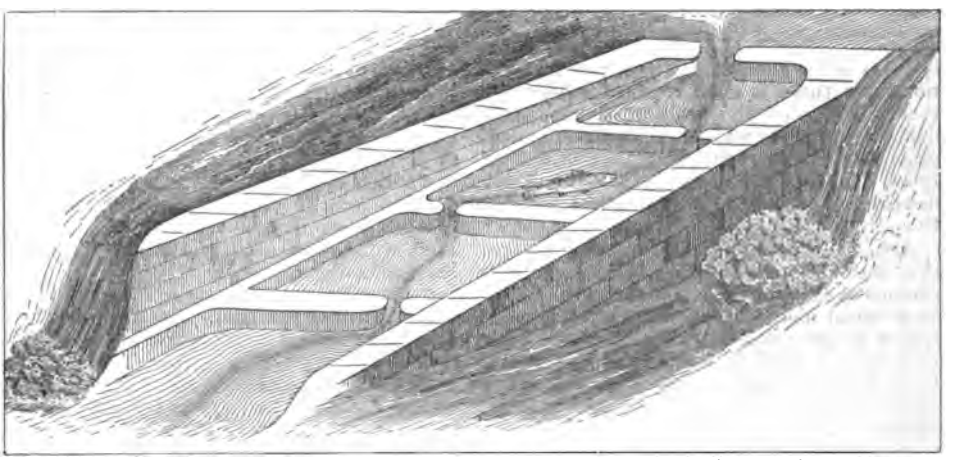
United States. In the Potomac alone the annual yield has been increased from 668,000 pounds in 1877 to an average of more than 1,600,000 pounds in recent years.

The carp-ponds for the rearing of German carp, in Washington, have been furnishing these fish to the people since 1879. Into every State and Territory of the Union the carp have gone to increase the stock of domesticated fishes, and in suitable waters their growth has been remarkable. A scale-carp sent to Texas when four inches long increased to twenty and one half inches in eleven months, and gained about four and one half pounds. Large carp not infrequently are sold in the market of Washington, which have sprung from escaped fishes in the Potomac, and they are readily sold notwithstanding the high price (twenty-five cents a pound). It is estimated that fully 30,000 ponds have been supplied with carp. In 1882 alone, carp were distributed from the Fish Commission ponds in Washington, in lots of twenty, to 10,000 applicants, representing every State and Territory of the Union, at an average distance of more than 900 miles; the total mileage of the shipments being about 9,000,000, and the actual distance traversed by the transportation-cars, 34,000 miles.

UNITED STATES, FISH-CULTURE IN THE. Modern fish-culture involves the artificial taking and impregnation of eggs; providing for them shelter and a suitable supply of water during the period of incubation; the protection and feeding of the young; the transportation of the fry and eggs; facilitating the ascent of fish in streams to their natural spawning-beds by removing obstructions and impurities in the waters; legislating against over-fishing, injurious fishing, and otherwise destroying industries; the artificial rearing of inferior species as food for such as have commercial value; the introduction into new waters of species which are known to be important elsewhere; and the systematic study of all the natural conditions which affect the movements and sometimes the existence of aquatic animals.

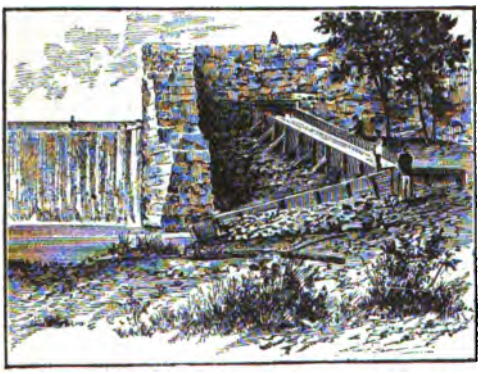
The mere hatching and depositing of fish-eggs artificially is but a small portion of the art of fish-culture as now practiced. It is quite as important to remove obstructions and impurities from streams, to prevent improper fishing, and to study the capabilities of waters for supporting life as it is to stock them with an abundance of fry. The word "fish-culture" no longer serves to convey the meaning intended; the term "aquiculture" is more nearly adequate to the purpose, for we have to deal with all the objects of fishery—whales, seals, crustaceans, oysters, corals, sponges, and every form of aquatic life. Fish-culture is simply one of a series of means to an end. Wherever unfavorable conditions exist, it must be combined with systematic investigation of the natural causes affecting the movements of aquatic animals, and with such intervention against obstacles of all sorts as will insure the full benefits of artificial introduction of economic species.

All civilized countries now make provision for the artificial rearing of fish. The necessity for this is more particularly felt in the rivers, where the direct consequences of man's mistakes are more apparent than in the open sea. If the salmon and the shad, which periodically ascend our streams for the purpose of reproduction, met with no serious obstructions upon their way, perhaps the necessity of fish-culture would not be so clearly seen. In July, 1879, at Bainbridge, Lancaster co., Pa., I saw great shoals of shad-fry, the individuals of which averaged more than two and a half inches in length, lining the east shore of the river. At the same time the Pennsylvania Canal, which there follows the course of the river, contained similar swarms of the young fishes. At various times during different years this phenomenon has occurred, yet at no time since those observations has there been a good catch of



SMITH'S SALMON-LADDER, 1840.—Gradient one in seven. Inlet 2 feet wide and 2 feet deep, opening between each pool 1 foot wide. Water in each pool 15 inches deep.

adult shad above the obstruction at Columbia, except when there was a break in the dam. We believe, therefore, that the removal of obstructions in streams would restore them to something like their primitive value for the fisheries. The obstructions, however, exist, and the additional element of pollution enters into the problem. We can not depend upon Nature to restore the fisheries; we must supply the deficiency by artificial hatching, and facilitate the ascent of fish in streams by introducing fish-ways. As early as 1830, Mr. Smith, of Deanston, Scotland, invented a salmon-ladder, of which an illustration is given with this article. The object of a fish-way is secured by retarding the velocity of the descending water sufficiently to allow the fish to overcome the current and pass beyond the obstruction. Numerous devices have been employed for the purpose, but seldom with good results, and a successful fish-way is scarcely demonstrated as yet. The best general paper on the subject was written by Mr. C. G. Atkins for Part II of the U. S. Fish Commissioner's Report. In the "Transactions of the American Fish-cultural Association for 1883" will be found a valuable paper by Col. M. McDonald, on "A New System of Fish-way Building." The McDonald



McDonald Fish-way, on the Rappahannock.

fish-way is the most promising of recent inventions, and there is good reason for believing that it will solve the problem of impassable dams. In this the water is made to act against gravity by the employment of a series of bent tubes, which receive the water at one end and discharge it with greatly diminished force at the other.

Artificial breeding has numerous advantages over natural breeding. A much greater percentage of eggs can be fertilized and developed by artificial methods; the eggs after impregnation are protected from the inroads of their numerous natural enemies, and the young fishes are nourished until they have gained a degree of strength which they would scarcely acquire under natural conditions, and are deposited where the chances for their survival are the best. In a state of nature only a very small percentage of the eggs deposited ultimately produce adult fishes. The ova are preyed upon by hosts of insects, by swarms of cyprinoids, cottoids, and siluroids, which infest all streams, and by numerous aquatic birds and mammals; they are liable to be smothered in a mass of mud, or washed away by floods, or crushed by floating timber; they are subject, also, to fatalities which do not beset them in the nurseries provided by man. In the wild state the larger fishes destroy the smaller, but in rearing-ponds such losses are entirely preventable, only fishes of equal size being kept in the same inclosure, and they receive a sufficient supply of food.

The early history of fish-culture relates to the utilization of ova naturally impregnated, and the rearing of fish which have been transferred from their natural habitat to an artificial one, in which they are fattened and prepared for market. This form of fish-culture is believed to have begun in China at a remote date, and the literature of this portion of the subject is considerable. The Chinese have extensively collected, transported, and developed eggs laid under natural conditions, and they continue to do so. The art of fish-culture, as practiced to-day, dates from about the middle of the eighteenth century. Stephen Ludwig Jacobi, a lieutenant of militia of Lippe-Detmold, in Westphalia, was, at that date, acquainted with the idea of artificially impregnating the eggs of fish and thereby restocking ponds and streams. Jacobi's discovery was not made public till 1763, when he embodied in a letter, which is printed in the "Hanover Magazine," the results of his experiments. As early as 1758 he had corresponded upon the subject with Buffon. A Latin translation of Jacobi's essay was made by Count de Goldstein, and his memoir was published in French in 1770, in an abridgment of the "Memoirs of the Berlin Academy. In 1773 Duhamel du Monceau published a translation of Jacobi's treatise on "Artificial Propagation," from the Latin version of Goldstein ("Traité générale des pêche," etc., Paris, 1773, Part II, p. 209). England was the first country to recognize the importance of this discovery of Jacobi. In 1771 George III granted him a life-pension. The first public illustration of the processes of fish-culture was given in 1772 by Prof. Adanson, in his lectures in the Royal Garden of Paris, now the *Jardin des Plantes*. The first English translation of Jacobi's memoirs was published in London in 1788, with the title "S. L. Jacobi's Method of breeding Fish to Advantage."

Notwithstanding the importance of this discovery, it was practically lost sight of for a long period, and it was then in France that the revival of the art took place. The chief importance of this renewed activity on the part of the French is to be found in the stimulus which it gave to new efforts in other countries, particularly in the relations of governments to the subject. The results accomplished by the

French were soon appreciated in England, and especially in America. One of the earliest American translators to bring to notice the essays of French fish-culturists was William H. Fry, who, in 1854, published "A Complete Treatise on Artificial Fish-Breeding: including the Reports on the Subject made to the French Academy and the French Government, and Particulars of the Discovery as pursued in England," etc. Dr. Theodatus Garlick, who is now generally recognized as the "father of fish-culture in America," in the preface to his treatise on the "Artificial Propagation of Certain Kinds of Fish" (Cleveland, 1857), bears testimony to the value of Fry's contribution to the history of fish-culture in Europe. Dr. Garlick had previously prepared the reports of Coste and Milne-Edwards on artificial fish-culture, for publication in the "Ohio Farmer," together with original articles, these papers being afterward combined to form the treatise above mentioned.

Previous to 1850 all that was accomplished in the way of artificial culture of fishes was done by individuals at their own expense. In 1850 fish-culture was begun by the French Government, and the first breeding station under government auspices was established at Hüningue, in Alsace, under the direction of Prof. Coste. Here the practical application of artificial culture was first demonstrated. (See engraving, page 792.) Public fish-culture was not permanently established in the United States until 1865, when New Hampshire formed a fish commission, and the Legislature sent Dr. Fletcher to Canada, to obtain salmon-eggs. Massachusetts had taken a preliminary step ten years before, but New Hampshire made the first practical move. Massachusetts established its fish commission upon a working basis in 1865, and Vermont, also, created a commission in this year. The first hatching establishment for public fish-culture in the United States was the shad-hatchery erected at Hadley Falls, on Connecticut river, by the State of Massachusetts. Public fish-culture in America, originating in New England, has rapidly been introduced into other States, and at this time most of the States and Territories of the Union have fish commissions. The total amount of appropriations for State commissions from 1866 to and including 1882 was $1,101,096.

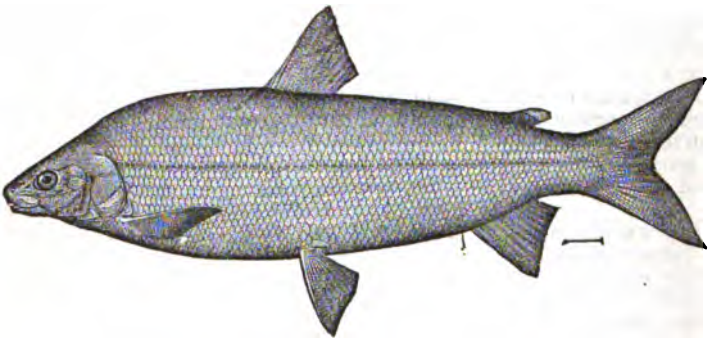
On Feb. 9, 1871, the United States Government authorized the appointment of a Commissioner of Fish and Fisheries, as stated at the beginning of this article. The propagation of fishes was not contemplated by the Government till 1872, when, at the suggestion of the American Fish-Cultural Association, Congress requested the commissioner to undertake the work of increasing the valuable food-fishes of the country, and appropriated $25,000 for the purpose. The total amount of appropriations for the work of the United States Commission, from 1871 to 1883, is $1,190,955.45, of which $727,545 was devoted to propagation; the remainder was employed chiefly in the construction of hatching-houses and ponds and steam-vessels. The work of the commission is divided into three sections, as hereinbefore explained.

The beginning of fish-culture contemplated the propagation of different members of the *Salmonidæ*—trout and salmon; the former especially occupying attention. These fishes still claim a large portion of the time of fish-culturists everywhere; but other species now receive as much care. This is more noticeable in the United States than elsewhere, because of our numerous anadromous fishes of far greater economic value than any salmon, unless we may except those of the Pacific coast. The shad, the alewife, and the striped bass are among our most valuable anadromous species, and, fortunately, they are good subjects for artificial propagation.

Hatching-Apparatus. — The earlier forms of hatching-apparatus used in the United States were, naturally, imitations of foreign appliances, particularly those of France and England. Boxes were placed in streams, and the eggs were received upon a bed of gravel. Floating-boxes in streams were employed for many years, and are still used to some extent. The hatching-box invented by Seth Green, in 1867, was the first successful piece of apparatus used in the United States for the hatching of semi-buoyant eggs. This is a rectangular wooden box with a wire-cloth bottom, and with long wooden floats so attached to the sides as to tilt the box at an angle with the current, thus securing the necessary movement of the eggs during the period of incubation. Until recently, this was the only successful apparatus used for the hatching of shad, and in it many millions of this species have been developed. Formerly, it was a matter of considerable importance to select material for the construction of hatching-apparatus which would not act injuriously upon the eggs, but this was soon adjusted by giving a coating of asphalt to the whole interior of the box. The use of the floating-box involved the necessity of placing it in a stream where it was subject to various dangers. In tidal waters, too, there was frequently entanglement of the series of boxes, and a lack of current during the turning of the tide. The introduction of glass materials for hatching purposes, and the protection of this apparatus in hatching-houses, either floating or fixed, was a very great advance over the old methods. In the glass vessel, thus protected, it is much easier to regulate the force of the current, and to remove diseased or dead eggs, than it was in the early apparatus. Formerly, it was necessary to skim off, or pick out, the dead eggs; but this work is now done automatically and with great facility. Floating-boxes for the hatching of semi-buoyant eggs could be employed only where there was a current; hence, it became necessary to substitute some other form of apparatus, in which a

continual motion could be kept up independently of the action of the current. The plunging buckets, invented by Mr. T. B. Ferguson, which were operated by steam machinery, were at one time used instead of the Green box for hatching shad-eggs in still water; but they were soon replaced by less expensive apparatus.

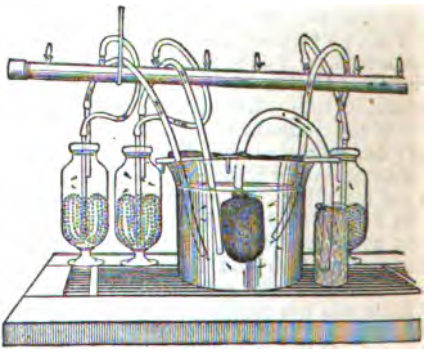
At present, it is customary among fish-culturists to classify hatching-apparatus with reference to the kind of eggs for which it is intended to be used. Four types of eggs are recognized:



WHITE-FISH (*Coregonus clupeiformis*).

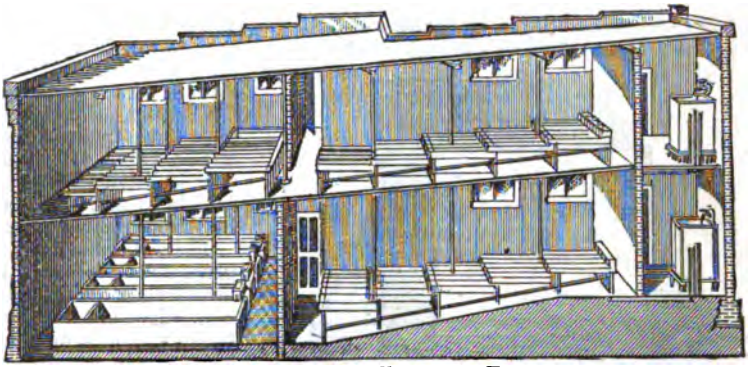
1. Buoyant eggs, such as those of the cod and the mackerel, which will float in water; 2. Semi-buoyant eggs, such as those of the shad and the white-fish; 3. Heavy eggs, such as those of the trout and the salmon; and, 4. Adhesive eggs, like those of the perch, the smelt, and the sea-herring, which adhere to surfaces with which they may come in contact. No form of apparatus has yet been devised which will satisfactorily hatch floating eggs. Some of the first experiments in the hatching of cod-eggs were made by Prof. G. O. Sars, of Christiania, Norway. At the International Fisheries Exhibition, in London, 1883, was shown a vase, invented by Mr. Oldham Chambers, for hatching buoyant eggs. In this the supply-pipes are perpendicular and perforated at an angle of forty-five degrees, and with an upward tendency, thus assisting the floating of the ova. A form of apparatus used with moderate success by the United States Fish Commission at Gloucester, Mass., in 1878, was devised by Capt. H. C. Chester, for eggs of the cod, and this was the first to accomplish the purpose desired. The hatcher known as "Chester's Semi-rotating Hatcher," is a cylindrical can, with five rectangular openings of wire-cloth on the side and a bottom of like material, to allow a circulation of water, and to prevent the loss of eggs or the escape of newly-hatched fish. Beneath the bottom are four strips of tin, radiating from the center and placed at such an angle that the rotation of the cylinder upon a vertical axis forces the water against them and up through the bottom. Several of these cans are placed in a trough of running sea-water. Each can turns on a pivot, the power being applied from an engine by means of a horizontal arm fixed to its axis, and is kept constantly turning backward and forward through an arc of ninety degrees, thus creating a free circulation of water which gives a motion to the eggs.

For hatching semi-buoyant eggs, such as those of the shad, the Green hatching-box was formerly the only one successfully used in the United States. Several modifications of it have been made, the most prominent among them being that invented by Mr. Brackett, and first used in 1873. "In this the box floats horizontally, but has the up-stream end beveled, and the water, striking against it, produces an eddy under the box, which causes a gentle agitation of the eggs." Another substitute was suggested by Mr. E. M. Stilwell, Fish Commissioner of Maine, and Mr. Charles G. Atkins, now in charge of the United States salmon-hatchery at Bucksport, Me. None of the modifications, however, succeeded so well as the Green box. The form of apparatus now used by the United States Commission and by many of the State Commissions, is the hatching-jar devised by Col. Marshall McDonald, of the United States Fish Commission. This is "a glass jar with metal cap containing two circular openings. Through one of these, in the center, a glass tube for the introduction of water passes to within a short distance of the bottom of the jar. The other, near one side, contains a shorter glass tube, which serves as an outflow-pipe. The McDonald jar is successfully employed in the hatching of various species of heavy eggs," as well as for semi-buoyant ova. "The water in entering is thrown against the bottom with considerable force, and is deflected upward around the sides of the jar. The eggs, which tend to settle to the bottom, are



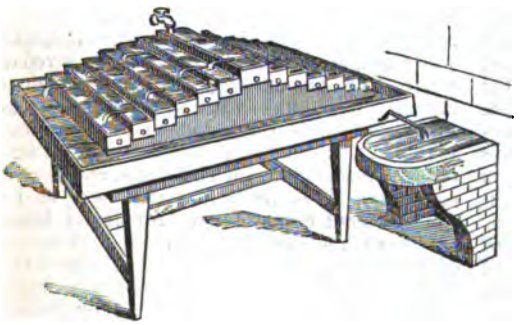
MCDONALD'S JAR.

carried upward along the sides, thence inward toward the center, from which point they again sink to the bottom. The current is regulated to give the desired motion to the eggs. With heavy eggs like those of the salmon there is no motion, but the water coming from beneath tends to buoy the eggs upward, thus preventing any injurious pressure on the lower ones by the mass above. The outflow-pipe is movable, and can be lowered to a point where the dead eggs, which are lighter than the good ones, come in contact with it and are carried off. By this means the eggs are kept comparatively free from the injurious effects of fungous growth or decaying eggs." The jar is fifteen inches high, six inches in diameter, and has a capacity of five quarts. It "can be filled two thirds full of eggs with very satisfactory results; 60,000 shad-eggs are considered a fair quantity."



SIR JAMES MAITLAND'S HOWIETOUN HATCHERY.

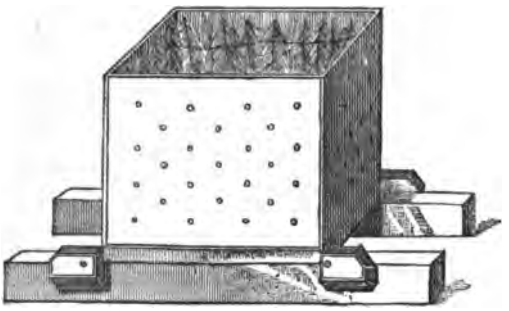
For the hatching of heavy eggs, almost any device will answer. The early forms of boxes were perforated for the entrance of water, supplied with gravel to cover the bottom, and on this the eggs were deposited; the boxes were placed in running water, and hatching proceeded with little difficulty. Later, parallel glass tubes, or grilles, were substituted for the gravel. A very good invention for hatching heavy eggs in layers was the Holton box, patented March 18, 1873, in which the eggs in single layers were received upon trays placed one above another; the current of water, entering from below, passed through each tray and escaped at the top. This was one of the earliest forms of apparatus by which an upward current of water is utilized, such apparatus marking a decided advance in the art. One of the greatest advantages derived from the Holton hatcher was economy of space. In 1874 another device for securing the same ends was patented by Mr. N. W. Clark, of Clarkston, Mich. The Clark hatching-trough is divided into ten to twenty compartments, each 15 inches long, 12 inches wide, and 12 inches deep, inside measurement; the divisions are made by water-tight partitions or bulkheads. Each compartment contains a box in which is placed a series of trays filled with eggs and covered with a pan of perforated tin upon which the water falls, to descend upon the eggs in the trays beneath, escaping at the bottom, and then passing up around the sides and ends of the box on its way to the second compartment. All of the water passes through each compartment before it escapes through the waste-way at the end of the trough. This was intended more especially for white-fish, but is used for all salmonoids. The Williamson or California box is similar to the Clark box, but the water is introduced from below instead of above. This form is now extensively used in Germany. In 1874 Mr. Livingston Stone designed an apparatus for hatching salmon-eggs in bulk by suspending from frames, in a Williamson trough, wire baskets containing the eggs. The compartments are separated by double partitions, the first reaching to the bottom and the second raised a little from it. The water falls over the first partition and passes under the second into the compartment, upward through the basket of eggs and out over the next partition. Mr. Stone often placed 12 to 15 layers of eggs in a basket without injuring them. One modification of the Holton system is the Ferguson jar, a cylindrical jar of glass containing wire-cloth egg-trays and having a circular opening to admit water at the bottom and a similar one at the top for the outflow. This jar was patented in 1876. Before the Ferguson jar came Chase's hatching-jar, a cylindrical jar of glass with a metal rim notched at one side, and furnished with a screen to prevent the escape of the fish. In this excellent jar



COSTE'S TRAY.

the water is introduced through a funnel-shaped glass tube upon the bottom, and thence passes upward through the eggs. Clark's hatching-jar is similar to Chase's, differing mainly in having upon the bottom a metal cone to receive the funnel-shaped end of the supply-tube, which is kept from contact with the cone by slight projections on the inner surface of the tube. The Wilmot jar was subsequent to and in imitation of Chase's.

For hatching adhesive eggs, one of the earliest forms of apparatus employed was that described by Christian Lund, in Norway, in 1761. This was a box charred on the inside and lined



LUND'S BOX.

with bushes, its sides being perforated. This box was placed in shallow water near the bank of a river, and in it were confined the parent fish when about to spawn. The eggs adhered to the bushes and were left to hatch in the stream, but the fish were removed. Subsequently the sides were made movable, so that they, with the egg-bearing bushes, might be transported. The Lund principle of hatching adhesive eggs, with some modifications, is still extensively applied in many countries. In 1876 James Ricardo, of New Jersey, successfully used for hatching smelt a rectangular box with a hinged cover, and perforated ends furnished with wire-cloth, the inside provided with twigs to which the eggs became attached. This box was placed in a strong current in the river. In 1878 Mr. Frank N. Clark employed, for hatching eggs of the sea-herring, a rectangular box containing numerous oblique grooves in the sides, in which were placed panes of glass resting alternately on the bottom and at a distance of a half-inch above the bottom. The eggs were taken, impregnated, and hatched on these panes. The current of water passed over the top of the first pane, under the second, over the third, and so on. Adhesive eggs may be manipulated with great ease by the use of the McDonald egg-reel, a contrivance by means of which they are attached to cotton cord, to facilitate transporting and hatching. A frame 23 inches high and 14 inches wide supports a reel 12 inches long and 10 inches broad. Beneath the reel is a square box containing at the bottom a ball of twine, and receiving in the top a funnel 6 inches in diameter. One end of the twine passes through the funnel and is fastened to the reel. The eggs are placed in water in the funnel, and, as the twine passes through them upon moving the reel, quantities of them adhere to it and are drawn upon the frame.

Methods of Treating Eggs.—For the fertilization of eggs two methods have been employed—the "wet" and the "dry." It was at first supposed that the eggs must be received in water, some culturists even taking the trouble to press them out under the water, and the milt was treated in the same manner. This, the "wet" method, was superseded by the "dry" method, which some claim was first practiced in America; it was, however, first published by Vrasski, a Russian, in 1856, and is now used almost universally. By this method the eggs are received in a dry pan, and the milt is distributed directly upon them. It is claimed that 99 per cent. of the eggs have been impregnated by the "dry" process.

The method of impregnating fish-eggs in general is as follows: Having found a female from which the eggs will flow freely upon slight pressure, grasp her firmly with the left hand around the tail, pressing her head closely against your body; then with the right thumb and forefinger exert a gentle pressure on the opposite sides of the belly, beginning at the breast-fins and continuing about to the middle of the length. The eggs should be received in a dry pan. By similar treatment of the male, squeeze jets of milt upon the eggs, swaying the pan gently to and fro, to insure commingling of the two elements. (See engraving, page 796.) Add a little water from time to time until the eggs increase in size and feel hard to the touch. All foreign substances, such as scales, dirt, blood, etc., must be carefully washed off. The period of incubation of fish-eggs depends upon the temperature of the water, increasing with a rise and diminishing with a fall. In the treatment of eggs of salmon and white-fish, artificial refrigeration is employed to retard development and protract the hatching-season. In a state of nature the white-fish season is especially brief, but by refrigeration, Frank N. Clark, of the United States Fish Commission, has extended it materially, and is now developing three times as many eggs as he could without refrigeration. Sir James Maitland has taken advantage of another principle of retardation. By giving the females an abundance of substantial food when the pairing-season approaches, he can perceptibly hasten the date of spawning, and by feeding them sparingly he can materially retard that event. In this way he extends the hatching-season of salmonoids considerably.

The production of shad has been greatly increased by Col. McDonald's discovery of the method of transportation of eggs in the dry state. The eggs, after fertilization, are placed in trays with a wire-cloth bottom and covered

by a wet cloth; eighteen of the trays fill a crate, which is inclosed in canvas and secured by frames connected by leather straps. The crates are then shipped to the hatchery.

Oysters.—Artificial hatching of eggs is not confined to the fishes; it has recently been successfully applied to the oyster, although it can not be asserted at present that this process may be profitably employed in oyster-culture. A great difficulty encountered by those who first attempted the artificial propagation of the oyster, was the escape and loss of the embryos before they became fixed. John A. Ryder, embryologist of the United States Fish Commission, has hit upon a device for detaining the embryos and compelling their fixation upon artificial stools. The pond in which he operated was supplied from the bay through a diaphragm constructed of boards perforated with auger-holes, and lined on the inside with gunny-cloth, the space between the boards, two inches, being filled with sharp, clean sand. Through this porous gate the tide ebbed and flowed, the temperature and saltiness of the pond remained the same as that of the bay, and the young oysters found the necessary food, and grew as rapidly as in the waters of the open bay. The method of rearing now so largely and successfully employed is that of receiving upon artificial stools spat naturally produced, empty oyster-shells being employed to receive the seed. By such means very much has been done in the New England States and elsewhere toward increasing the market supply of oysters. Another development of oyster-culture is the planting of oysters upon suitable bottoms and allowing them to remain there to grow and fatten.

Sponges and Lobsters.—Sponges have been artificially propagated from cuttings. Illustrations of sponge-culture were shown at the International Fisheries Exhibition, by McKesson and Robbins, of Florida. It is claimed that this may become a successful industry. The artificial culture of lobsters has received much attention in some of the European countries. Attempts have been made by the United States Fish Commission to transport adult lobsters to the Californian coast, but without successful results from the introduction.

Results of the Commission's Work.—Most of the States have fish commissioners, who undertake to supply the streams of their own States. The General Government occupies itself with such bodies of water as the great lakes, with rivers which no single State or combination of States could be expected to take under its charge, and with marine species. It undertakes, also, the acclimatization of species which must be brought long distances and at great expense, as well as transportation across the continent, and even to remote countries. Some of the results are so well known that it seems hardly necessary to mention them. We might refer to the successful introduction of the shad in the Mississippi Valley and upon the Pacific slope; to the improvement of the shad-fisheries in nearly every important river which has recently been stocked; to the great impression made upon the coregonus fisheries of the great lakes; to the deposit in 30,000 ponds of the German carp; to the annual increase of nearly 5,000,000 pounds of salmon in the Sacramento river, due to the artificial breeding in the McCloud; to the successful introduction of the California salmon into Europe, where it thrives in ponds; and to the general improvements in fish-hatching apparatus.

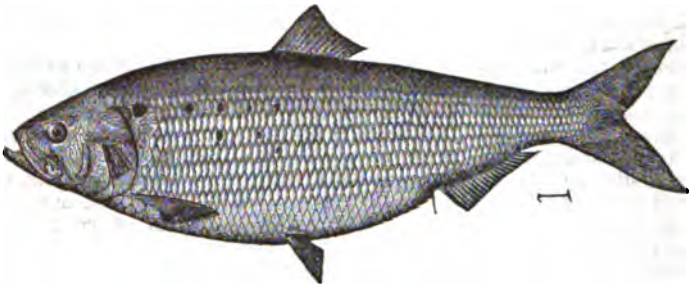
Practical Information.—The limitations of fish-culture are purely physical. Cold or obstructions or impurity of the water, may neutralize the efforts of the fish-culturist, just as frost, or flood, or plague, may render unavailing the labors of the agriculturist; but the practicability of the art remains the same. Because of the general interest in several of our native species, I append brief descriptions of the methods employed in their propagation. The notes relate to some of the salmonoids, the shad, and the carp:

Trout and Salmon.—One of the first requisites for hatching eggs of the *Salmonidæ* is a steady supply of pure spring-water, having a uniform and low temperature. If the water contain sediment, this must be kept out of the hatching-apparatus by a series of filters. Perhaps the best temperature of water for hatching purposes is about 45° Fahr.; it would not be well to have it much higher. In water of 45° trout-eggs will hatch in about seventy-five days, and the yolk-sac will remain nearly fifty days longer. For the proper accommodation of the apparatus and the embryo fish, a hatching-house is necessary. Neither rain-drops nor the sun's rays must fall upon the eggs. Modern apparatus made of glass, and closely sealed, except where the water enters and escapes, will prevent numerous accidents.

Connected with the hatchery must be a series of ponds, which should be at different levels and united by long, narrow race-ways. The rearing-ponds are to be supplied with brook or river water of a temperature never exceeding 65° Fahr. The fishes of each pond must be prevented by screens from leaving their inclosure. The depth of ponds is made to vary with the size of the fish, and from the head, where it is usually about six inches, to the foot, which, in the largest pond may measure six feet. It is customary to construct ponds narrow and long, with a view of sweeping them readily with a seine. It is desirable to arrange the ponds so that they can be entirely emptied when necessary. Fish kept in confinement must be fed. Feeding should begin a week or two before the yolk is entirely absorbed. One successful fish-culturist uses a mixture of the yolks of nine eggs with one pound of beef, which is pressed through a fine sieve. Livingston Stone believes that young living perch and suckers, which can readily be obtained in abundance, would probably be the best food for very young trout; but as artificial food he recommends liver and curd from sour milk in about equal proportions, or with two parts of liver to one of curds. Raw liver alone is extensively used; it must be chopped quite fine and pressed through a fine sieve. Seth Green reduces it to the consistency of pulp, and, after diluting it with water to about the thickness of cream, gives a teacupful of the mixture to 100,000 fish just beginning to feed. The larvæ of gnats, as well as of *Daphnia*, *Cyclops*, etc., may be skimmed off stagnant waters with a fine muslin net, and fed to the young fish. Whatever is given to the fry, care must be taken that it does not choke them, and no refuse must be allowed to remain in the water to putrefy.

Artificial Impregnation of Shad-Eggs.—After the shad are taken from the gill-nets or seines, they should be examined to see if the eggs and milt will flow out freely when gentle pressure is made upon the belly.

If the process of taking eggs or milt is continued too long, traces of blood will appear. After impregnation, the eggs should be kept either in pans or on trays; if in the former, they must be filled with water, which should be changed every hour or oftener. In pouring water into the pans, always let it fall on the side. The eggs must be preserved from shocks of all kinds. When trays are used, the bottom of the tray should be covered with a wet flannel cloth, and the eggs must not be more than two layers deep. The apparatus used by the United States Fish Commission for the transportation of eggs is McDonald's egg-transportation crate, described above. This crate marks the beginning of the dry transportation of shad-eggs.

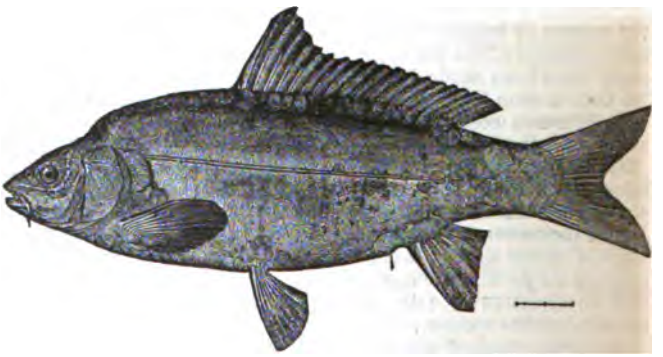


SHAD (*Clupea sapidissima*).

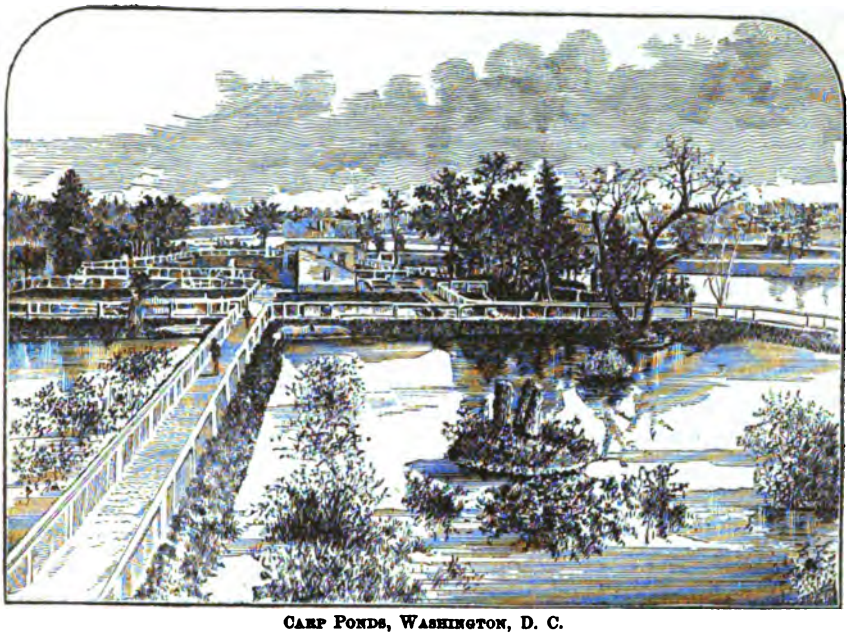
The spawning-pans used by the commission are made of "marbleized iron," which will not rust in salt-water.

The period of incubation of all fish-eggs varies with the temperature of the water. I quote from the "Report of the United States Commissioner of Fish and Fisheries," Part II, p. 430, the record of observations made by Mr. J. W. Milner: "In the shad-eggs the period required for the release of the fish from the eggs was, with an average temperature of 64°, though actually varying between 62° and 68°, about seven days. With an average temperature of 65°, actually between 62° and 69°, the time was about six days. With an average temperature of nearly 66°, actually between 62° and 69°, the time for the most of the fish to be free was about five days. An average of 68°, between 60° and 75°, released them in about three days. An average of 72°, really between 65° and 80°, released the fish in about seventy hours, the shortest time observed for a large quantity of eggs, though usually some were hatched a few hours before the majority, and a few eggs lingered for several hours after the *éclosion* of the rest." A newly-hatched shad is a little less than half an inch long. The yolk-sac is absorbed in four or five days after hatching. Glass vessels are the best for hatching purposes; the Chase, the Clark, and the McDonald jars possess great advantages over all forms of metallic apparatus, the principal being their prevention of the formation of fungus, by the continuous movement which they insure, and the facility for removing dead eggs. Embryo shad are transported in cans of block-tin, resembling milk-cans. The style extensively used by the United States Fish Commission is cylindrical, with a contracted top and a cover. The usual dimensions are: height, 24 inches, diameter, 14 inches. This can will accommodate from 5,000 to 20,000 embryos, depending on the distance to be traveled and the time occupied in transit. Until recently it was supposed to be necessary to change the water at least once in two hours. Now it is known that a change every four or six hours will generally give better results. Young shad have been kept alive and deposited in streams after a journey lasting 184 hours; they have been kept alive even as long as 240 hours by Messrs. Mather and Anderson in the attempt to carry them to Germany.

Carp-Culture.—The carp is said to have been introduced into Europe from Central Asia many centuries ago. It is now common in most of the large European rivers, and has become extensively domesticated in Bohemia, Austria, Germany, and France. From Europe the carp was imported into England in 1514 by Marshall. One of the varieties was brought from Holstein to Sonoma, California, in 1872, by Mr. J. A. Poppe, and, from the five puny little fish which he placed in one of his ponds in August of the same year, many portions of his own State and of those adjacent were supplied with scale-carp, and some were sent even to the Sandwich islands. A much more extensive introduction of a superior breed of carp into the United States was effected by the commissioner, May 26, 1877, on which day Mr. Rudolph Hessel placed in ponds in Druid Hill Park, Baltimore, 227 naked and mirror carp and 118 common carp. These were kept in Baltimore until the completion of the ponds in Washington. The distribution of young carp reared in Washington began in 1879, and up to the present time upward of 30,000 ponds have been supplied in all suitable parts of the United States. Shipments have been made, also, to Colombia and Ecuador. The successful domestication accomplished in Europe has been repeated here. The varieties of carp known among us are three: the common, or scale-carp, the mirror-carp, and the leather-carp. Carp will hybridize with gold-fish and with other related members of the family of the *Cyprinidæ*, forming a worthless and troublesome product, which can not easily be distinguished externally from true carp. Carp prefer stagnant or sluggish waters, with a loamy, muddy bottom, and deep places abounding in vegetation. They live upon vegetable food, worms, and insect larvæ, and will sometimes devour their own eggs and the bait intended for predaceous species. They hibernate



CARP (*Cyprinus carpio*).



CARP PONDS, WASHINGTON, D. C.

in deep water, refusing food, in moderately cold countries, from October to April. In the warmer Southern States the period of winter sleep is greatly reduced, and the time of growing increased. Carp do not lose weight in their natural retreats during winter, nor do they grow. The spawning-season begins when warm spring weather has fairly set in, and continues into July, or later. The number of eggs averages about 100,000 for each pound of the weight of the fish. The scale-carp is somewhat more prolific than the other two varieties. The favorite spawning-places are spots overgrown with such aquatic plants as the bladder-worts (*Utricularia*), water-plantain (*Alisma*), water-milfoil (*Myriophyllum*), pond-weed (*Potamogeton*), and some members of the water-lily family. The eggs are adhesive. The period of incubation depends mainly upon temperature; in the colder portions of New England it may be sixteen days, while in Georgia it has been reduced to as little as forty-eight hours, with a temperature of 90° or more.

The rate of growth of the carp depends upon the average temperature of the water, the nature of the bottom of the pond or river, the amount of food, and the extent of water area. According to Rudolph Hessel, a carp-culturist of wide experience, who has charge of the ponds of the United States Fish Commission, the average normal weight of a three-year-old carp of any of the three varieties is three pounds. This average may be greatly increased or diminished through variations of the conditions above mentioned. The carp may be reared in brackish waters, as well as in rivers, lakes, and ponds.

In establishing ponds it is desirable to have a sufficient supply of brook or river water at all seasons. The bottom of the pond should consist of clayey loam intermingled with some marl or vegetable mold. But there must not be too much humus or dissolved peat. Surface drainage from fertile fields is advantageous in carp-ponds. Artificial ponds are most readily constructed in a low, undulating region which is without great elevations, and where reservoirs may be cheaply formed by closing up the small valleys by dams. The depth of the pond need not exceed three feet in the center, and from the margin to a distance of 70 or 100 feet it should not be more than one foot. The area intended for breeding must be still shallower, not exceeding a few inches in depth. Near the center of the pond a deep cavity, fully two feet lower than the rest of the bottom, and varying in size according to the area of the pond, must be dug, to serve as a retreat from excessive heat and cold. The pond must be so made that it can be perfectly drained. Near the outflow end must be provided another excavation, about one foot deeper than the rest of the pond, to receive the fish when the water is drawn off through the outlet-pipe; this cavity is called a "collector." The drainage is effected by means of a main ditch leading into the "collector," and having intersecting ditches from all parts of the pond. The "collector" ought to have a plank flooring, and must be kept free from mud. The inflow of water into the pond from a stream should be lateral and never direct. Both the inlet and the outlet of the pond must be supplied with series of screens, to prevent the escape of the carp and the intrusion of other fishes. All wood-work exposed to the action of the air, or the water, or both, should be well protected by paint or some other preservative. If the pond receives a considerable supply of surface-water, or is liable to overflow in rainy weather, an "overflow" must be provided at the side, and this must be protected by wire-cloth screens. Knolls and islands must be entirely removed from the pond, or they will serve as lodging-places for numerous enemies of the fish. In stocking ponds, three females and two males, or sometimes twice as many of each sex, are allowed to one acre of water. Mr. Hessel recommends that small ponds be surrounded by a tight board fence, three to four feet high, and imbedded in the ground from four to six inches. This will keep out the snapping-turtle, the most voracious and dangerous enemy of the carp. Aquatic birds, otters, musk-rats, minks, frogs, water-snakes, and a host of other animals, in the water and out of it, prey upon fish and are especially destructive to carp. Carp must be kept entirely apart from other fishes, and they must be protected from the enemies above mentioned. Facility in draining the pond will insure the extermination of foes within, and the outside foes must be killed by shooting and trapping. Regular carp-culture requires a hatching-pond, a breeding-pond, and a culture-pond. The hatching-pond need not be as large as the breeding-pond, and its depth should not

be greater than eighteen inches. Its shallow margin may be from thirty to forty feet wide and from two to five inches deep. Water-grass (*Festuca fluitans*) should grow in it plentifully. The breeding-fishes should be removed after the close of their spawning-season. The young fry are to be left in the hatching-pond during one winter, and are then transferred to the breeding-pond. The breeding-pond is constructed in the same way as the hatching-pond, but it is larger and deeper; its average depth may be twenty-one inches, and the "kettles" or retiring-places may have a total depth of four and a half feet. The shallow margin should be from seventy to eighty feet wide. There should be a good growth of grass in this pond. They are to be stocked in March and April from the hatching-pond. About 800 carp to the acre is a fair average. After remaining one year in the breeding-pond, the fish should be transferred to the culture-pond, 400 to 500 being allowed to an acre.

In feeding carp, distribute the food in different places near the banks, and change the feeding-place frequently. Do not give them much food at one time. The best times are early in the morning, or in the evening, and, in hot weather, late at night. Never use more food than the fish will consume, else fragments will remain in the pond to putrefy and cause sickness among them.

Bibliography.—The literature of fish-culture is extensive and scattered. A list of the principal treatises accessible to American readers is given below. In addition to the papers and books mentioned, much and varied information upon the subject is to be found in the reports of the United States Fish Commissioner, Bulletin of the United States Fish Commission, reports of many of the State Fish Commissioners, and Transactions of the American Fish-Cultural Association. The papers bearing the date 1883 were read at the conferences of the International Fisheries Exhibition of 1883; they are, as a rule, modern, comprehensive, and valuable:

Fry, W. H.—A Complete Treatise on Artificial Fish-Breeding: including the Reports on the Subject made to the French Academy and the French Government; and Particulars of the Discovery as pursued in England. Translated and edited by W. H. Fry. Illustrated with Engravings. (New York, 1854.)

Garlick, Theodatus, M. D.—A Treatise on the Artificial Propagation of Certain Kinds of Fish, with the Description and Habits of such Kinds as are the most suitable for Pisciculture, etc. (Cleveland, 1857.)

Francis, Francis.—Fish-Culture: a Practical Guide to the Modern System of Breeding and Rearing Fish. With numerous Illustrations. (London, 1863.)

Buckland, Frank T., M. A., M. R. C. S., F. Z. S.—Fish-Hatching. Illustrated. (London, 1863.)

Green, Seth.—Trout-Culture. (Rochester, N. Y., 1870.)

Slack, J. H., M. D.—Practical Trout-Culture. (New York, 1872.)

Stone, Livingston.—Domesticated Trout, and How to Breed and Grow them. (Boston, 1873; Charlestown, N. H., 1877.)

Norris, Thadde's.—American Fish-Culture, embracing all the Details of Artificial Breeding and Rearing of Trout, the Culture of Salmon, Shad, and other Fishes. Illustrated. (Philadelphia, 1874.)

Hessel, Rudolph.—The Carp and its Culture in Rivers and Lakes, and its Introduction in America: In Report of United States Fish Commissioner, Part IV, 1878, pp. 865–900. Also printed separately.

Roosevelt, R. Barnwell, and Green, Seth.—Fish-Hatching and Fish-Catching. (Rochester, N. Y., 1879.)

Borne, Max von dem, Haack, H., Michaelis, K.—Amtliche Berichte über die Internationale Fischerei-Ausstellung zu Berlin, 1880. I. Fischzucht. With thirty-nine Wood-engravings. (Berlin, 1881.)

Day, Francis, F. L. S.—Fish-Culture. Illustrated. (London, 1883.)

Goode, G. Brown, M. A.—The Fishery Industries of the United States. (London, 1883.)

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Howitz, D., Esq.—Forest-Protection and Tree-Culture on Water Frontages. (London, 1883.)

Hubrecht, Professor.—Oyster-Culture and Oyster-Fisheries in the Netherlands. (London, 1883.)

Huxley, Professor, F. R. S.—Address at the Inaugural Meeting of the Fishery Congress, International Fisheries Exhibition, London, 1883. (London, 1883.)

Kent, W. Saville, F. L. S., F. Z. S.—Artificial Culture of Lobsters. (London, 1883.)

Mainwaring, Hon. W. F. B. Massey.—The Preservation of Fish-Life in Rivers by the Exclusion of Town Sewage. (London, 1883.)

Marston, R. B.—Coarse Fish-Culture. (London, 1883.)

Maitland, Sir James Ramsay Gibson, Bart.—On the Culture of Salmonidæ and the Acclimatization of Fish. (London, 1883.)

Shaw-Lefevre, Right Hon. G., M. P.—Principles of Fishery Legislation. (London, 1883.)

UNIVERSALISTS. The following is a summary of the statistics of the Universalist Church in the United States, as given in the "Universalist Register" for 1884: Number of State conventions, 22; of parishes, 919; of families, 88,820; of churches, 696; of church-members, 35,058; of Sunday-schools, 609; of members of Sunday-schools, 52,758; of clergymen in fellowship, 672, with 11 licensed lay preachers; of church edifices, 797, of which the value, above indebtedness, is $6,894,100. There were 12 schools and colleges in 1883, with 101 instructors and 1,063 students, and property valued at $2,378,000.

The Universalist General Convention met in Washington, D. C., October 24th. Mr. John D. W. Joy, of Massachusetts, was chosen president. The Board of Trustees reported that the contributions and bequests actually paid during the past year for the missionary work of the Church, through conventions and otherwise, had amounted to more than $75,000; and that the actual receipts from gifts by the educational institutions exceeded $254,000. The Murray centenary fund amounted to $123,932; the theological scholarship fund to $18,044; and the J. G. Gunn ministerial relief fund to $8,790. The church in Washington, D. C., in which the sessions of the convention were held, had been completed at a cost of $46,053, all of which was paid before the meeting adjourned. The payment of the entire indebtedness of the General Convention was also announced. A committee, to which had been referred the subject of a revision of the creed, reported that it had come to the conclusion that no general revision was called for at this time. "The present profession," the report said, "may not be regarded as a complete statement of doctrine, nor should it be held as too sacred for amendment. Beyond question,

however, this formula expresses in substance the fundamental beliefs of Universalism, while it is happily adapted for use by the brief forms in which its propositions are affirmed." The committee, however, recommended a modification in the second article of the declaration, by the substitution of the word "save" for "restore" and of "in" for "to," so that the article should read, "We believe that there is one God, whose nature is love, revealed in one Lord, Jesus Christ, by one Holy Spirit of Grace, who will finally save the whole human family in holiness and happiness." The convention was not satisfied with this proposition, and the report was recommitted. A minute was adopted expressing admiration of the character and courage of Martin Luther, and appreciation of the value of the work he did, and recommending the participation of Universalists in the celebration of the four-hundredth anniversary of his birthday. An additional or assistant secretary was appointed, to advance missionary work in the West.

The Woman's Centenary Association had received $14,745, and had paid out $9,668. Its work is the maintenance of missions in the United States, Canada, and Scotland.

The Universalist Historical Society reported 2,500 volumes in its library.

URUGUAY, a republic of South America. Area, 69,835 square miles; population, 488,245; capital, Montevideo. The President is Gen. Maximo Santos, elected March 1, 1882, after the resignation of Dr. Vidal, for the term of four years. The Consul-General for the United States is H. Estragulas, resident in New York.

Army.—The standing army comprises four battalions of foot, three regiments of horse, and two regiments of artillery, together 4,500 men. There is besides a police force of 3,200 men, and a national guard of 20,000 men.

Finances.—The public indebtedness stood, on Jan. 1, 1883, as follows:

Debts redeemable without being liable to interest.	$16,970,167
Debts originally bearing 12 per cent. interest, but subsequently converted into consols bearing 5 per cent. interest during three years, and 6 per cent. during the subsequent seven	17,143,281
Debts bearing 2 and 3 per cent. interest during a term of ten years	27,465,756
Total	$61,579,204

The income in 1883 was $9,920,000, and the outlay $9,925,000. During the summer of 1883 Uruguay caused a meeting of its foreign bondholders to be held in London, and an arrangement was made to the following effect: The home and foreign debts were acknowledged to constitute the following equivalents in English money:

		Interest.
Internal debt	£9,112,220	£519,462
External debt	3,467,520	86,888
Total	£12,579,740	£606,350

The consolidation of this joint indebtedness has been effected by leaving the amount due foreign creditors as it stands above, but reducing the internal debt, some of which, as shown, bore no interest, by about 60 per cent. The consolidated debt was thus fixed at £11,127,000, including £851,000 of a new issue.

A National Bank.—Parliament passed the bill creating a national bank. The bank is to be incorporated for forty years, and to have its seat in the city of Montevideo, where it will remain, subject to the laws of the republic. The capital is to be $10,000,000, in shares of $100 each, 50 per cent. to be paid in cash, and the remaining half in two years, unless an earlier call for the same should become imperative. Branch banks are to be established.

The Tariff.—During 1883 the Committee on Revision of the Tariff terminated its labors. It proposed a notable raising of the duties, especially on articles imported from France.

Postal Service.—The post-office forwarded, in 1883, 1,000,000 ordinary letters, 20,000 registered ones, 70,000 Government dispatches, 1,000,000 periodicals; paid out $2,000,000 of money-orders, and collected $140,000 of postage, there being in operation 294 post-offices.

Railroads.—The railroads in operation in 1883 were: 1. The Central of Uruguay, in running order 205 kilometres from Montevideo to Durazno, 210 to the Yi river, and 32 of branch line to San José; about to be added, 70 kilometres. 2. Ferro-carril del Peste; length of line in operation, 35 kilometres. 3. Ferro-carril del Salto; out of 181 kilometres to be built, 100 were in operation. 4. Ferro-carril del Norte; length of line, 21 kilometres.

Telegraphs.—There were in operation in 1883 five lines of telegraph. On Jan. 25, 1883, the Uruguayan Government signed a convention with that of the Argentine Republic, authorizing the former to extend its land lines and establish a new one to connect with the Argentine system on the island of Martin Garcia.

Telephones.—The "Compañía Telefónica" of Montevideo was founded in 1882, and in the year following had a length of line in operation of 360 miles.

Education.—There were in 1883, 688 public and private schools, attended by 42,486 pupils, 22,944 of whom were boys and 19,542 girls, taught by 1,182 teachers.

The Press.—The Oriental press was represented in 1883 by twenty-one daily newspapers and forty weeklies and magazines, the aggregate circulation being 20,000.

Cattle and Sheep Show.—The Rural Association of Uruguay held its first cattle and sheep exhibition at Montevideo on Oct. 1, 1883. Premiums were awarded to raisers of the finest rams, and it was made apparent that sheep-breeding had made marvelous progress in the Oriental country.

Live-Stock.—So far as the official direct-tax returns show, the live-stock in Uruguay was distributed as follows in 1883:

DEPARTMENTS.	Head of cattle.	Sheep and goats.
Salto	1,040,420	616,134
Paysandú	722,982	459,215
Rio Negro	488,173	709,980
Soriano	292,481	2,015,106
Colonia	142,496	1,314,984
San José	196,548	1,907,902
Florida	170,064	1,329,494
Canelones	18,405	112,842
Durazno	285,802	1,101,758
Tacuarembó	1,066,815	754,854
Cerro Largo	881,854	405,970
Minas	273,566	655,008
Rocha	230,003	261,818
Maldonado	93,171	204,932

There were believed to be in all the republic about 8,000,000 head of cattle, estimated to be worth on an average $6 a head; 16,000,000 sheep at $1, and 1,000,000 horses and mules at $5. The annual slaughtering of cattle was estimated in 1883 at 1,000,000 head.

The amount of iron and wire fence in position in Uruguay in 1883 was estimated to represent a value of $10,000,000.

Agriculture.—There were of arable lands under cultivation in Uruguay in 1883 about 500,000 acres, and pasturages of 35,000,000. Wheat and maize are extensively grown.

Immigration.—Between 1866 and 1875, both inclusive, there landed in Uruguay 162,592 immigrants; in 1876, 5,570; in 1877, 6,168; in 1878, 9,464; in 1879, 11,188; in 1880, 11,867; in 1881, 8,336. There left, on the other hand, 6,376 emigrants in 1878; in 1879, 6,250; in 1880, 6,641; and in 1881, 6,339.

Commerce.—The amount of merchandise imported into Uruguay in 1883, in the absence of official returns at the close of the year, was estimated at $20,000,000 worth; the exports at $22,000,000.

American Trade.—Uruguay's trade with the United States has been as follows:

FISCAL YEAR.	Import from Uruguay.	Export to Uruguay.
1880	$5,542,085	$880,871
1881	4,164,663	1,536,326
1882	6,837,736	1,457,978
1883	8,980,110	1,385,755

While importation from Uruguay has fluctuated widely, exportation has risen suddenly, and since then remained tolerably steady.

The wool and hide importation from Uruguay has been as follows:

	Wool.	Hides.
	Pounds.	
1880	9,577,309	3,575,785
1881	4,823,562	2,960,259
1882	6,894,985	5,088,253
1883	5,920,713	2,716,240

From this it is evident that the falling off in American importation from Uruguay has been due chiefly to the decreased amount of hides coming from there.

UTAH. Territorial Government.—The following were the Territorial officers during the year: Governor, Eli H. Murray; Secretary, Arthur L. Thomas; Auditor, Nephi W. Clayton; Treasurer, James Jack; Superintendent of Public Instruction, L. J. Nuttall. Supreme Court: Chief-Justice, John A. Hunter; Associates, P. H. Emerson and S. P. Twiss.

Material Condition. — The assessed value of property in 1882 was $29,080,656; Territorial and school taxes thereon, at ⅞ of 1 per cent., $174,483.93.

In 1883 the assessed value of property was $30,834,425, with no returns from Emery and Piute counties. The gross revenue for the two years 1882 and 1883 was estimated by the Auditor at $459,390.48; net revenue, $323,559.44. The Treasurer's report shows payments during the two years to the amount of $307,669.05; balance in treasury, Dec. 31, 1883, $51,988.10.

The area of the Territory is 84.000 square miles. The population is about 150,000, about 40,000 being non-Mormons, many of whom are so-called apostates from the Mormon Church. The people are generally engaged in agricultural pursuits. Since 1869 the business of mining has become an important interest, and from that time the total out-put has been over $60,000,000 in silver, lead, and gold. There are also valuable deposits of coal, iron, and copper.

The bullion product of 1882 has been stated at $8,143,175; 1883, $7,017,682. There is a territorial insane asylum at Provo city.

Polygamy.—On July 1, 1862, an act was passed by Congress which provides that "every person having a husband or wife living, who marries another, whether married or single, in a Territory or other place over which the United States have exclusive jurisdiction, is guilty of bigamy, and shall be punished by a fine of not more than $500, and by imprisonment for a term not more than five years." Under this law there have been very few convictions, not more than three, as it is said, for over a period of twenty years, which is due largely to the fact that a great majority of the community are in sympathy with the accused. The law of March 2, 1882, known as the "Edmunds law," is much more comprehensive. In addition to repeating the same penalty for entering into the polygamic relation, it amends the former law by providing a penalty "against any man who simultaneously, or on the same day, marries more than one woman." New sections are introduced into the present act relating to the qualification of jurors, amnesty to offenders, and the legitimation of children born before Jan. 1, 1883. The last section declared vacant the registration and election offices in Utah, and provided for a board of five, appointed by the President, to take their place.

The Commission and its Action.—Under this act, Alexander Ramsey, A. S. Paddock, G. L. Godfrey, A. B. Carlton, and J. R. Pettigrew were appointed commissioners, and proceeded to the discharge of their duties in August of that year. They conducted a revision of the registration, appointed election officers, and under

their direction, and the provisions of the "Edmunds law," an election for delegate to Congress was held on Nov. 7th. The total number of registered voters was 33,266, of whom 18,772 were males and 14,494 females. About 12,000 men and women were excluded from registration by reason of polygamy. The election resulted in the success of John T. Caine, the candidate of the "People's party," or Mormons, who received 23,039 votes, while Philip T. Van Zile, the candidate of the "Liberal party," or Gentiles, received 4,884.

But the most important election was that of Aug. 6, 1883, a general election for Territorial and county officers; 960 were elected, all of whom, as well as all the voters, are monogamists. The total vote of the People's party was 20,508; Liberal, 1,453; from which it appears that large numbers of the Liberals refrained from voting. The Legislature is composed wholly of Mormons, none of whom, however, *live* in polygamy.

The commissioners, in their reports to the Secretary of the Interior, make many statements and recommendations; the chief one being that Congress should pass a comprehensive marriage law, requiring marriages to be solemnized publicly and registered, and making the first wife a competent witness in prosecutions for polygamy.

Acts are now before Congress embodying the recommendations of the commissioners.

V

VENEZUELA, a republic of South America. Capital, Carácas. (For details relating to area, territorial divisions, population, etc., see "Annual Cyclopædia" for 1881.) The President is Gen. A. Guzman Blanco. The Venezuelan Minister Resident, accredited to the United States in 1880, is Señor Simon Camacho.

The Army and Navy.—The regular army has a strength of 2,545 men; in times of war the militia is enrolled. The navy is restricted to two small steamers and two schooners, mounting together eight guns.

Finances.—The budget for 1882–'83 estimated the income from duties at $19,425,000; from internal revenue at $2,596,667—together, $22,021,667; and the outlay: General administration, $12,285,000; interest on home debt, $2,097,900; interest on foreign debt, $2,097,900; payments in settlement of foreign claims, $1,010,100; public works, $4,530,767—together, $22,021,667.

The internal debt amounts to $45,376,064, and the foreign debt to $278,403,659.

Decree of 1883.—The Venezuelan Government issued in 1883 the following decree:

> The products, goods, and merchandise exported from Europe and the United States to Venezuela, and accompanied with all the documents required by the customs laws, may be transshipped in foreign colonies from one vessel to another to proceed to their destination, and will be considered as arriving directly from the original points of export. When, by lack of immediate transport, it may become necessary to disembark the said products, goods, and merchandise in foreign colonies, they may be re-embarked for Venezuela without being considered as colonial exports, always provided that, in addition to the consular documents from the port of original dispatch, the owners or consignees present at the custom-house of the republic where the goods are landed a certificate from the Venezuelan consul in the colony, asserting that the said goods were only there on deposit for lack of vessels to take them to their destination.

This decree removed the extra import duty of 30 per cent. upon goods introduced into Venezuela by way of the Antilles.

Railroads.—The railway from La Guayra, the port of Carácas, to the latter city, recently opened, though only twenty-four miles long, encountered great obstacles from the fact that a mountain 7,000 feet in height separates La Guayra from the capital. Another line of railway was in operation from Tucacas to the Aroa mines, seventy miles. A line was being built from Carácas to the Tuy river, and work is begun on the railroad that is to connect Puerto Cabello with Valencia.

Telegraphs.—On Sept. 1, 1880, there were in operation 356 miles of line. In 1883 the western line had reached the Colombian frontier, with branch lines from Valencia to San Cárlos, from Valencia to Nirgua, San Felipe, and Barquisimento, and from Valencia to Puerto Cabello; the southern had extended to Villa de Cura, and the eastern to Guacara. From Villa de Cura the southern will be carried to San Fernando, the western from San Cárlos to Barínas, and from Puerto Cabello to Maracaybo.

Education.—In 1873 there was spent by the nation only $129,042 for gratuitious instruction of children and youths; in 1877 the amount spent was $507,962, and in 1882 $1,349,039 was thus expended. Various Federal colleges and normal schools have also been founded, there being four of the former of the higher order, and fifteen of a degree lower, including five for girls and five normal schools.

Agriculture.—The only plow in use (says the United States consul) is of domestic manufacture, made by pointing a round stick about six inches in diameter and incasing the point in iron. This iron-pointed stick set in a frame at a suitable angle and drawn by a team turns a furrow each way, very much as a hog would root it. Most of the tilled land is cultivated by hoeing. Of the cultivated crops, corn or maize is the most important. Near the cities it is grown expressly for horse-feed, and it is likewise the principal food of all the ox-teams, horses, mules, and donkeys used for the interior transportation of merchandise. The trade in green corn-stalks is heavy and regular. In places remote from the large towns the corn fully matures and is sold in the grain. The

corn is of excellent quality, and in quantity ample to supply the home demand. Three crops of corn a year can be raised on the same land. Sugar-cane is grown by a process of cultivation similar to that of corn. Sugar is produced in quantities sufficient to supply the home demand. Nine or ten varieties of beans are grown, and usually in great perfection, but only in quantity sufficient for domestic use.

Yuruari Gold-Mines.—These rich mines were more productive than ever in 1883, the "Callao" mine averaging 5,000 ounces monthly, the "Potosi" 1,500, and the "New York" 1,300, without counting the yield obtained at the "Eureka," "Chile," "Cicapra," "Nacupay," and numerous other quartz gold-mines. The mines are situate at a distance of sixty leagues from Ciudad Bolivar.

Commerce.—The imports into Venezuela in 1882 amounted to $14,000,000 worth of merchandise, of which $5,000,000 came from England, $2,400,000 from France, and $2,000,000 from the United States. The amount of products exported in the same year was $15,000,000. The United States consul at Puerto Cabello remarked in January, 1883: "It may be reasonably stated, however, that the consumption of purely British goods is no greater than the consumption of American goods in Venezuela. In the character of the goods, however, both England and France have the advantage, for their exports thither consist principally of manufactures, while the principal portion of American exports thither is limited to provisions, breadstuffs, petroleum, etc."

FISCAL YEAR.	Imports from Venezuela into the United States.	Domestic exports from the United States to Venezuela.
1880	$6,039,092	$2,268,705
1881	6,601,817	2,704,063
1882	5,746,300	2,187,100
1883	5,901,724	2,363,211

The imports in 1883 embraced 47,742,466 pounds of coffee, worth $4,498,207.

VERMONT. State Government.—The following were the State officers during the year: Governor, John L. Barstow, Republican; Lieutenant-Governor, Samuel E. Pingree; Secretary of State, George Nichols; Treasurer, William H. Du Bois; Auditor, E. Henry Powell; Inspector of Finance, Charles Dewey; Railroad Commissioner, Wayne Bailey; Adjutant-General, Theodore S. Peck; Superintendent of Public Instruction, Justus Dartt. Supreme Court: Chief-Justice, Homer E. Royce; Assistant Judges, Timothy P. Redfield, Jonathan Ross, H. Henry Powers, Wheelock G. Veazey, Russell S. Taft, and John W. Rowell.

Political.—There was no general election during the year, nor was the Legislature in session. At the town meetings on March 6th two amendments to the Constitution were submitted to the people. The vote was as follows: On the first, providing for the election of Secretary of State and Auditor by the people—for the amendment, 11,135; against, 556. On the second, providing for an additional oath to members of the Legislature that they hold no United States office—for the amendment, 11,056; against, 559.

Finances.—The following statement shows the financial condition of the State at the close of the fiscal year ending July 31, 1883:

LIABILITIES.

Agricultural College fund	$185,500 00
United States surplus fund, unpaid balances to soldiers and outstanding checks, about	20,000 00
Due towns on account of savings-bank tax, balance of 1882 tax, payable Aug. 25, 1883	24,875 58
Temporary loan, 1882, unpaid	40,724 15
Huntington fund	4,404 47
Total liabilities	$225,504 20

ASSETS.

Cash on hand and in bank	$50,923 54

The annual statements have lately exhibited a cash balance of about $100,000 to the credit of the State, and a similar sum in available assets with which to meet current expenses. The change in this respect in the exhibit this year is by reason of the adoption of the Hooker revenue bill. By the provisions of that bill the railways, savings-banks, and trust companies, express, telegraph, and telephone companies, steamboat, car, and transportation companies are required to pay the tax assessed upon their earnings semi-annually, in the months of February and August, and the insurance companies annually, in February.

The total valuation of real and personal estate is $154,135,984. To 1 per cent. of this sum add $151,310 for 75,655 polls at $2 each, deduct $2,442 for exemptions, and the total grand list of the State is $1,690,227.84.

The following table shows the results of the corporation tax law for the first year of its operation, with the exception of a few companies that had made no returns:

Savings-banks	$52,771 76
Trust companies	30,509 67
Telegraph companies	597 50
Express companies	1,282 89
Steamboat companies	1,949 24
Car companies	5,964 03
Railways	67,087 27
Insurance companies	16,664 44
Total	$176,826 79

Railroads.—On the 31st of July, 1882, there were in Vermont 858 miles of main line and branches, and 88 miles of sidings, etc.

Savings-Banks.—The following is a statement of deposits in each savings-bank and trust company in Vermont, Jan. 1, 1884:

NAMES.

Burlington Savings Bank	$1,464,111 95
Burlington Trust Company	291,099 60
Bellows Falls Savings Institution	596,596 30
Brattleboro Savings Bank	925,115 92
Bradford Savings Bank and Trust Company	302,722 43
Bennington County Savings Bank	178,483 66
Farmers' and Mechanics' Trust Company	808,837 03
Jamaica Savings Bank	135,956 39
Marble Savings Bank, Rutland	163,358 85
Montpelier Savings Bank and Trust Company	740,121 73
Northfield Savings Bank	278,592 27
Ottauquechee Savings Bank, Woodstock	348,416 17
Passumpsic Savings Bank, St. Johnsbury	1,240,000 00

NAMES.	
Rutland Savings Bank	$1,514,120 10
Rutland Trust Company	126,855 00
Richford Savings Bank and Trust Company	52,101 88
Springfield Savings Bank	404,804 42
State Trust Company, Rutland	367,032 61
Vermont Savings Bank, Brattleboro	2,045,432 98
Wilmington Savings Bank	258,276 88
Winooski Savings Bank	186,468 21
Windham County Savings Bank, Newfane	865,945 30
West Fairlee Savings Bank	80,210 54
Windsor Savings Bank	602,495 07
Total	$13,421,678 14

The number of depositors is about 45,000.

Schools.—The following are the school statistics for the year ending March 31, 1883:

School districts	2,330
Public schools	2,558
Average number of days of school in the year	131
Pupils enrolled in the public schools	72,842
Average wages per week for male teachers	$8 12
Average wages per week for female teachers	$4 88
Total revenue for school purposes	$548,610 45
Total expenditure for school purposes	$558,289 84
Appropriations to normal schools	$7,620 00

VEUILLOT, Louis, a French journalist, born at Boynes, Loiret, in 1813; died in Paris, April 7, 1883. His father removed to Paris and opened a wine-shop, and Louis, at the age of thirteen, was placed in an attorney's office. The attorney's wife took an interest in him and excited his literary ambition, and when he was nineteen, M. Thiers, then Minister of the Interior, engaged him to defend the Orleans government in the semi-official organ at Rouen. His polemic talent was at once recognized, and in the following year he was made editor of the similar journal at Périgueux, and in 1837 was summoned to Paris to write for "La Charte," which he left to take the chief-editorship of "La Paix." At this period he bore the reputation of a free-lance, actuated simply by professional ambition and government pay, to write in the cause of his employers with a vehemence and acerbity which involved him in several dueling affairs. This circumstance, in conjunction with certain intrinsic qualities in his style, always suggested a doubt of the perfect sincerity of the opinions he upheld during the rest of his life. In 1838 he visited Rome with a friend, and was so impressed with the religious pomps of holy week and the reverend majesty of Pope Gregory's manner, that he returned a devoted Catholic. His life, as well as his writings, bore witness to his conversion. He published in the next two years several books of meditation, romance, travel, and poetry. Accompanying Gen. Bugeaud to Algeria, he wrote a volume on the "French in Algeria," interspersed with religious philosophy. He was appointed, on his return, chief of a bureau in the Ministry of the Interior, but resigned to become one of the editors of "L'Univers." He soon took the management of the paper, and made it the chief organ of the clericals. For attacks on the University he was sentenced to a term of imprisonment. All the changes effected by the Revolution of 1789 he condemned, taking the extreme ground in favor of absolute monarchy by divine right. The Revolution of 1848 was hailed by him as ushering the return of theocratic absolutism. The pamphlets entitled "Les Libres-penseurs," "L'Esclave Vindex," "Le Lendemain de la Victoire," "Petite Philosophie," and "La Legalité," written between 1848 and 1852, are masterpieces of style. While the bishops were disputing as to which of the ancient classics were improper for the study of youth, Veuillot argued vigorously in favor of relegating to oblivion the entire heathen literature. The Archbishop of Paris warned his flock against such extreme views, whereupon Veuillot posted off to Rome and obtained, through the general of the Jesuits, an apostolical letter, ordering the prelate to make peace with the "illustrious Paladin of the Church." Napoleon III, instigated by the Gallican clergy, finally suppressed "L'Univers" in 1861, and forbade other journals to print contributions from Veuillot, who again sought revenge at the hands of Pius IX, but could not induce the Pope to quarrel with his political ally. Six years later Napoleon had need of a brilliant polemic to defend the threatened temporal power of the Pope. When "L'Univers" reappeared, it waged a fierce war against the Gallican clerics for not upholding the Syllabus. At the Œcumenical Council, Veuillot was the only layman present. After the fusion at Frohsdorf, when the royalist politicians claimed to have persuaded Henry V to renounce the white flag and accept a constitution, Veuillot showed himself more royalist than the King by declaring that he no longer deserved the support of good Catholics. Veuillot insisted on identifying the restoration of the power of the Pope with the royalist cause, on which account his paper was repeatedly suspended during the septennate of MacMahon. Of his numerous published books of fiction, philosophy, history, etc., all of them stamped with his extreme religious views, the most remarkable is "Les Odeurs de Paris," a terrible satire, denouncing the corruption of manners under the third empire. As a writer, Veuillot ranks among the greatest masters of French prose.

VIRGINIA. State Government.—The following were the State officers during the year: Governor, William G. Cameron, Readjuster; Lieutenant-Governor, John F. Lewis; Secretary of State, William C. Elam; Treasurer, David R. Revely; Auditor, S. Brown Allen; Second Auditor, Henry H. Dyson; Attorney-General, Frank S. Blair; Superintendent of Public Instruction, Richard R. Farr; Commissioner of Agriculture, James M. Blanton; Superintendent of the Land-Office, J. W. Brockenborough; Railroad Commissioner, George A. Martin. Court of Appeals: Chief-Justice, Lansford L. Lewis; Judges, R. A. Richardson, T. T. Fauntleroy, B. W. Lacy, and D. A. Hinton.

Political.—Although the November election of this year did not include any general State officer, but was confined to members of the Legislature (half the Senate and the entire

House), it aroused unusual interest, and led to one of the most heated canvasses in the history of the State. The Democrats had determined to wrest the State from the control of the Readjusters led by Senator Mahone, and to place it securely in the Democratic column in the next presidential election. Their State Central Committee met in February, and determined to call a convention to meet at Lynchburg on July 25th. The convention met at the appointed time and place, every county being represented except Buchanan, Lancaster, Lee, and Wise. A committee on party organization was appointed, which after deliberation reported in favor of electing the chairman of the State Committee by the convention, who should be *ex officio* chairman of the Executive Committee, that the State Committee should consist of five members from each congressional district, and the Executive Committee of five members chosen by the State Committee. The report also defined the duties of the State Committee, and laid down a detailed plan for organization in each congressional district, senatorial district, county and city and ward district, and for listing the voters of every precinct; and, in fact, contemplated the most exact and searching enrollment and instruction of the voters of the State. A committee for each precinct was provided. In several places the word "assessment," referring to collections from voters, appeared. Objection was made to this, but it was allowed to stand, and the report was adopted. John S. Barbour, believed to be the best organizer in the State, was elected chairman of the State Committee.

The platform opposed increase of taxation; accepted as final the recent settlement of the State debt; favored abolition of internal revenue; favored tariff for revenue; favored free education; opposed mixed schools; demanded civil-service reform; and denounced "bossism" and "ring rule."

A Straightout Republican Convention, attended by about one hundred delegates, was held in Richmond, August 15th, and pronounced against the Readjusters. The election resulted in a decisive Democratic victory. The Legislature was constituted as follows: Senate—Democrats, 24; Coalitionists, 12; vacant seats, 4; total, 40. House—Democrats, 65; Coalitionists, 35; total, 100.

The vacancies were caused by the resignation of Readjusters after the election.

Subsequently, a sufficient number of Readjusters or Coalitionists were unseated on contests to give the Democrats a two-third vote in each House. The aggregate popular vote was as follows: Democratic, about 145,000; Readjuster, about 127,000. In 1881 a Readjuster Governor was elected by a vote of 118,478 to 100,758 for the Democratic candidate. The following was the vote in 1882 for Congressman-at-large: Readjuster, 99,992; Democratic, 94,184; Straightout Republican, 4,342. The election did not pass off without violence. The most serious affray occurred at Danville, just prior to election-day, and resulted in the death of several negroes. The Readjusters claimed that it was instigated by the Democrats to intimidate the colored voters and prevent them from going to the polls, and that it had that effect.

Legislative Session.—The Legislature convened on December 5th, and was in session at the close of the year. State officers for the term beginning in January, 1884, were chosen, but no considerable legislation had been perfected.

Public Revenue.—The Governor, in his message, says:

> Notwithstanding the interception by coupons between the tax-payer and the treasury of more than a half of a million of dollars, the sum remaining to the credit of the Commonwealth on Oct. 1, 1882, was $551,540.51. During the year ending Oct. 1, 1883, there has been paid, on account of interest on the public debt, $313,935.17, and the balance on hand in the treasury as of that date to the credit of all funds was $1,537,204.88. This sum will be increased by several hundred thousand dollars during the current month, but the amount available for general purposes is subject to deduction in the sum of $200,000 yet remaining to the credit of the school fund as by proceeds appropriated, but yet unexpended, of the sale of the State's interest in the Atlantic, Mississippi, and Ohio Railroad. During the period commencing on Jan. 1, 1882, the floating debt of the State has been practically extinguished.

The Governor recommends the passage of a law for the regulation of railroads, similar to those of California and Georgia.

W

WAGNER, Richard, a German composer and dramatist, born in Leipzic, May 22, 1812, the youngest of nine children, died in Venice, Feb. 13, 1883. His father, a petty official, died the same year that Richard was born. His mother married Ludwig Geyer, an actor and painter, who also died when Richard was seven years old. When eleven years of age he attempted to write tragedies after the model of Shakespeare. In school he showed no application, but he studied music by himself, and, when sixteen years old, persuaded his family to give him a musical education. Yet, instead of applying himself to study, he attempted to write overtures, one of which was produced in the Leipzic Theatre. Then he attended lectures on philosophy and æsthetics, but he was not more diligent than before, and for a time led a wild student's life, until he became disgusted with dissipation. This was his turning-point. He took up the study of music again, and, under the teaching of Theodor Weinlig, soon became proficient in counterpoint. His teacher, who was the leader of the Gewandhaus or-

chestra in Leipzic, produced in 1833 an overture and a symphony. The symphony was played also in Prague, but the score was lost by Mendelssohn, who came in 1834 to direct the Gewandhaus concerts, and was not found until fifty years later. On a visit to his brother Albert, an opera-singer and manager in Würzburg, Wagner was encouraged to attempt an opera in Weber's style. The libretto of this romantic opera, "Die Feen," he adopted from a dramatization by Gozzi of an Indian myth. He could induce no manager to produce his work, and complained that French and Italian music had driven German art from the stage. This experience and the success of Wilhelmine Schröder-Devrient as Romeo, in Bellini's insignificant opera, induced him to adopt for a time the style of the Parisian opera, and seek to combine the highest qualities of French and Italian music. "Rienzi" was composed under this impulse. Wagner was carried away with the ideas of the July revolution as developed in "Young Germany." He associated intimately with Heinrich Laube, and was influenced by the materialistic tendencies of that school, as well as imbued with their revolutionary and democratic ideas, to which he remained true all his life. "Das Liebesverbot," a frivolous adaptation of Shakespeare's "Measure for Measure," showed the influence of the materialistic thought and of the artificial French musical taste then prevailing.

In 1834 the young composer became director in the Magdeburg Theatre, which failed two years later. Here he fell in love with the actress Wilhelmine Planer, whom he married in Königsberg, where he was employed in 1836. He next obtained an engagement in Riga. Here he wrote the text and part of the score of "Rienzi," and determined to give his genius free rein and seek recognition in the musical capital of the world as a composer of grand opera. When his contract expired he embarked with his wife for Paris. The conception of "Der fliegende Holländer" took form during the long and stormy voyage. He was received with kindness by Meyerbeer, but for the presentation of "Rienzi" there was no chance. Put off with promises, he supported himself miserably by letters to German newspapers and musical critiques. The text of the "Flying Dutchman" he sold to a manager who had the score written by an insignificant composer and produced it without success. Wagner was at last reduced to work for the musical publishers, adapting for the piano selections from Halévy's operas.

He returned to Germany in April, 1842. "Rienzi" was accepted in Dresden, and Tichatchek (Schröder-Devrient) was persuaded to take the principal rôle. The music of the "Fliegende Holländer" was written in seven weeks at Meudon in 1841. This opera was offered at Munich and Leipzic, but was refused with the excuse that it was not adapted to German taste, but by the influence of Meyerbeer it was brought out at Berlin. It, and an incomplete Faust symphony, written in Paris under the inspiration of Beethoven's Ninth Symphony, were the first works produced in Wagner's own manner. The success of "Rienzi" was complete, and spread the fame of its author and composer through Germany.

RICHARD WAGNER.

He was engaged as a conductor in the Court Theatre at Dresden, and then received the appointment of court chapel-master, an office which he unwillingly assumed, forced by pecuniary difficulties, arising from losses incurred in the publication of his works. When the "Fliegende Holländer" was given in Dresden, Wagner was disappointed to find that his later and more characteristic style was not appreciated. "Rienzi" kept the stage only in Dresden, for the lack of singers who could take the title-rôle elsewhere. During the next two years he was occupied with "Tanhäuser," in which he followed his artistic inspirations regardless of his experience with the "Fliegende Holländer." He next worked

out the comic opera of the "Meistersinger." "Lohengrin" was matured about the same time, and "Parsifal" was conceived. When "Tanhäuser" was produced in 1845, the public was dissatisfied at the depressing effect of the drama and the unfamiliar musical effects. Even the singers rebelled at the extraordinary demands made upon their vocal powers, which after all did not please the public. A controversy between the critics ensued, and lasted many years. Dramatic art, it was argued, should aim to leave pleasing impressions, and the musical drama should have plenty of melody. The "Meistersinger" was instanced as containing no airs at all. Wagner was represented by these critics as wasting his genius on vain theories, though the theories were mostly of their own invention. "Tanhäuser" gradually became popular, when the public got used to Wagner's original style, and found that it contained melody of the purest quality. Every one of Wagner's operas had to undergo the same probation. For ten years no theatre was willing to give "Tanhäuser" a representation, except Wagner's own in Dresden, where it slowly won popular approval. Wagner's material circumstances constantly grew worse; yet he still remained true to his art, and proceeded with the composition of the words and music of "Lohengrin." Although incapable of enjoying his productions, the people of Dresden prized Wagner as the greatest of operatic directors. He selected none but the highest products of German musical genius, and subjected the text and instrumentation to a thorough revision. His method of presenting Glück's operas, in particular, became the model which is everywhere followed. Even more famous was the rendition under his direction of classic orchestral works, particularly the Beethoven symphonies of the royal chapel band. The management of the opera-house, discouraged by the mere *succès d'estime* of "Tanhäuser," and dismayed at the cost of the mounting which Wagner insisted upon, delayed putting the piece on the boards until the composer felt the neglect. A scheme which he advocated for the establishment of a Saxon national theatre was disregarded.

When the outbreak of May, 1849, occurred, Wagner took an active part in the insurrection. He arranged the signals with church-bells, organized the arrival of bands from outside, and delivered fiery revolutionary speeches. After the suppression of the revolution he escaped from prison by hasty flight, and became a political refugee. He settled at Zürich, and first turned to the pen as a means of support, writing three important and characteristic books, entitled "Art and Revolution" (1849), "The Art of the Future" (1850), and "Opera and Drama" (1851). Franz Liszt, soon after receiving the appointment of chapel-master to the Grand Duke of Weimar, became the first applicant for "Tanhäuser" in 1848. Wagner, when in his flight he saw the representation at Weimar, declared that Liszt was his *alter ego*. Liszt now took up "Lohengrin" and made it a success, after which he wrote Wagner that he should create a new work. Though he composed no music between 1849 and 1853, he became immersed in the dramatic reproduction of the Germanic mythology. "Siegfried's Tod" was already finished in 1848. He felt impelled to proceed with the dramatization of the rest of the story of the "Nibelungenlied," corrected by the study of the "Edda." In 1853 Wagner printed his poetical work on this subject, in order to acquaint his friends with the musical task he had undertaken. Liszt was the only one who did not lose courage. In order to render possible the realization of an artistic project so unusual and formidable, he proposed a national prize, with the obligation to present the crowned work, and, when this was rejected, attempted to have a grand festal theatre built in Weimar. When Wagner had completed "Rheingold," "Walküre," and the two first acts of "Siegfried," he stopped, discouraged and exhausted. His next work was "Tristan und Isolde," in which the development of his style had proceeded so much farther, and his demands on the technical theatrical art were so much greater, that no theatre would undertake its representation. Wagner determined to make another appeal for recognition to the wealth and taste of Paris. His plan was to collect a German troupe to represent his operas. He was obliged to abandon this project, but in concerts he presented fragments of his works, won friends and admirers, and succeeded in having "Tanhäuser" presented in the Grand Opera-House. Anti-German feeling was already rife in Paris, and fashionable rowdies conspired to destroy the chances of the opera. The performance was interrupted by hisses and ejaculations, and not allowed to be finished. The same year (1861), through the intercession of the Grand Dukes of Weimar and Baden, he was arrested and permitted to return to Germany. Efforts of his friends to obtain him a place were fruitless, from the fear of operatic managers that with his services they would have to accept his operas and their impossible conditions. For some years he presented fragments of his uncompleted great work in concerts throughout Germany and Europe. In Russia he earned a great deal of money, and in London and other cities he gained reputation, but the prospects of his operas were gloomier than ever. He offered to write a new piece for the Vienna company, but received a cool refusal.

At length, in 1864, to his greatest astonishment, he received an invitation from the young King of Bavaria to come and complete his Nibelung series. His first movement after his arrival in Munich was to bring out the oft-rejected "Tristan und Isolde," in 1865, with such success that his friends came from all over the world to witness the triumph. Hans von Bülow was called from Berlin to direct

the orchestra. Under his and the master's training, with artists selected and schooled for effects never attained before with the human voice, and possessing dramatic talent of a high order, with scenery and costumes in which expense was not spared, with stage-machinery invented for the purpose, with instruments of new designs, Wagner's operas were placed on the stage, one after the other, as no operas had ever been. In 1868 the "Meistersinger" was brought out, and even this extreme example of the "music of the future" became a popular favorite. Wagner was resolved that the Nibelung cycle, if ever produced at all, should be presented in a special theatre, and not left to its fate on the regular stage. For this purpose the Wagner Union was founded, and in 1872 the corner-stone of an opera-house in Bayreuth was laid. The completion cost far more than was expected, and the deficiency was made up from the private purse of King Louis. Wagner intended to found a school of operatic art in connection with the monumental theatre. In order to carry out the project, he was obliged to allow the Nibelung cycle to be played in ordinary theatres, and, singularly enough, the managers of Germany, one after another, introduced it in their repertoires. The great work was presented in Bayreuth in 1876. Richard Wagner's last work was "Parsifal." Wagner separated from his first wife, after living with her twenty years, and subsequently married Cosima, Liszt's daughter, the divorced wife of Bülow.

WASHINGTON TERRITORY. The Governor during the year was William A. Newell; Secretary, N. H. Owings. Present population, estimated at 125,000.

Legislative Session.—The Legislature met on October 2d, and adjourned on November 28th. Among the acts passed were the following:

To establish and provide for free scholarships in Territorial University.

To change the time of convening the Territorial Legislature.

Memorials praying for various river improvements.

Memorial for the admission of Washington Territory to the Union.

Memorial to abolish Indian reservations.

Consolidating New and Old Tacoma.

Creating the counties of Skagit, Douglas, Kittitas, and Lincoln.

Prohibiting hogs from running at large.

Relative to inspection and measurement of logs.

In relation to drift saw-logs.

To secure for the owners of live-stock payment for injuries sustained by railroad-trains.

For the inspection and ventilation of coal-mines.

In relation to habitual drunkards.

Submitting to electors the question of taxing church property.

Prohibiting the sale of pistols and tobacco to children under sixteen years of age.

To preserve and protect school lands.

Relative to liens on rolling-stock of railroads.

An act was also passed extending the right of suffrage to women. A memorial was introduced for the creation of a separate Territory from eastern Washington and northern Idaho, but it failed to pass.

Finances.—The total receipts for two years ending Sept. 30, 1883, including balance, were $156,016.27; disbursements, $127,703.44.

The total valuation of property in the Territory in 1882 was $32,568,901. In 1883 it was $44,107,567.

Penitentiary and Insane Asylum.—The Penitentiary at Seatco contains 73 persons. The cost of their maintenance for the past two years has been $33,000.

The Insane Asylum is near Steilacoom. The number of patients, Aug. 15, 1883, was 129. The expenditures for two years were $57,106.52, which includes repairs and improvements to the amount of $7,389.18.

Education.—The public-school statistics for the year ending Aug. 31, 1883, are:

Of school age, between 5 and 21	32,000
Pupils enrolled	24,000
School districts	700
School-houses	700
Teachers employed	650
Graded schools	15
Average length of schools in months	4½
Paid to teachers	$97,000 00
Paid for buildings	$60,000 00
Paid for furniture and apparatus	$20,000 00
Amount paid for school purposes	$177,000 00

Indians.—Thirteen thousand Indians occupy fifteen reservations, which contain seven millions of acres of the best agricultural, grazing, timber and mineral lands of the Territory, using them variously for hunting, fishing, farming, and strolling; besides the use of which, they receive liberal assistance from the Government in the guardianship of agents, the benefit of physicians, medicines, hospitals, schools and teachers, with donations for food, clothing, and implements for forest and land.

Statehood.—On the subject of the admission of the Territory, Gov. Newell says:

Our ability to sustain a State government and our claim to admission based upon resources and population—which are the only reasonable requirements—are conceded. Our people are quite unanimously in favor of the measure, desiring to be possessed of the rights and privileges exercised by other American citizens. If there be any doubt as to the population required to entitle us to a member of Congress, a new census would solve the question.

The people of the Territory have already adopted a State Constitution preparatory to admission, which instrument is generally regarded as being too voluminous and cumbersome, containing many provisions which might properly be embodied in statutory enactments, and others not adapted to our present and advanced requirements.

Northern Pacific.—The completion of the Northern Pacific Railroad from Lake Superior to Puget Sound is an event of vast importance to the Territory of Washington. The Governor says:

Forty-five millions of acres of timber, coal, pasture, and mountain lands, mines of precious metals, quarries of lime, stone, marble, granite, slate, and stone, and beds of mica; ocean front and inland salt seas; many lakes and rivers affording thousands of miles of navigable waters, all alive with a hundred varieties of fish, some of them of great value: water-powers; a climate of even temperature and healthful; grand scenery of water and mountains, facilities for manufacturing the staples from our own material, wood,

iron, wool, and hides; maritime opportunities unsurpassed for internal, coastwise, and foreign commerce; in a line to absorb the trade of Alaska in fish, fur, cedar, and gold; to obtain the largest share from Asia in coffee, teas, opium, porcelain, silks, and ivory—all of these are our resources and advantages.

Political.—In 1882 Thomas H. Brents, Republican, was elected delegate to Congress by a vote of 11,252, against 8,244 for his Democratic opponent. The Legislature of 1883 consisted of 6 Democrats and 6 Republicans in the Council, and 14 Democrats and 10 Republicans in the House.

WEST INDIES. British.—The Governor of the Bermudas is Lieut.-Gen. T. L. Gallway; of Barbadoes and the Windward Islands, W. Robinson.

Jamaica.—After the negro rising in Jamaica in Gov. Eyre's time, fifteen years ago, the parliamentary government of the island was abolished, and the colony became what is called a crown colony, ruled by officials appointed by the Colonial Office in London. An influential party in Jamaica now claims that the condition of the island is so much changed that it is time to reinvest the people with self-government.

The shipments to the United States amounted during the six fiscal years, 1877 to 1882, to $234,650 from Kingston, and $520,446 from Port Antonio; of oranges from Kingston, to $429,575; of cocoa-nuts from Port Antonio, to $148,545, besides moderate amounts of limes, pineapples, and mangoes. The latter, now perhaps the most common fruit in Jamaica, is of comparatively recent introduction.

The Bahamas.—The cultivation and shipment of pineapples is the most important industry of the Bahamas. The vessels engaged in this trade are mostly schooners of from 75 to 150 tons, noted for speed, and able to make the run from the islands to Baltimore, Philadelphia, and New York, in from four to eight days, more than two thirds of them being New England fishing-vessels and Baltimore pungies. There were shipped to the United States in 1882 something over 100 cargoes, mostly in American bottoms, amounting to 462,000 dozen, worth $141,000. There was also a marked increase in the shipments of preserved pineapples, $43,000 worth, against $32,800 in 1881. In the item of sponges the increase has been very marked, a brisk trade continuing all through the year 1882. In 1881 there were shipped to the United States 234,529 pounds; value, $113,643. In 1882 the amount was 464,748 pounds, valued at $190,752.

Dominica.—During the night from Sept. 4 to Sept. 5, 1883, the island, for the first time since 1834, was visited by a terrific hurricane, causing destruction to the extent of half a million pounds sterling. This hurricane also struck Porto Rico and other West India islands, but it nowhere proved so disastrous.

The shipments of produce from the British West Indies to the United States, during the first half of the year 1883, were:

The Bahamas	$214,400	Nevis	$2,000
The Bermudas	375,000	Barbadoes	1,372,000
Antigua	267,000	Jamaica	675,000
Dominica	56,000	Trinidad	2,225,141
Montserrat	18,000	Turk's islands	69,000
Total			$5,273,541

The principal products imported into the United States from British Honduras during the fiscal year 1882 were: Coffee, 829,604 pounds; India-rubber, 161,288 pounds; and sugar, 2,867,905 pounds.

The chief product imported from British Guiana into the United States is sugar, and next to it molasses. Sugar importation has of late years increased as follows:

	Pounds.		Pounds.
1878	37,435,270	1881	47,621,628
1879	13,074,378	1882	64,457,685
1880	34,072,783		
Total			196,661,742

Danish.—The Danish West India colony consists of three islands forming the extreme western group of the Virgin islands. Ste. Croix, commonly called Santa Cruz, measures 218 square kilometres; St. Thomas, 86; and St. John, 54; together, 358, or 138 square miles. The total population is 33,763.

Ste. Croix is called the garden of the West Indies; it is fertile, every foot almost is cultivated, and it produces the best grade of muscovado sugar. St. Thomas and St. John produce little sugar, and hardly anything besides.

St. Thomas is a free port, and has a roomy harbor, with facilities for the repair of vessels.

The American trade with the Danish West Indies has been as follows:

FISCAL YEAR.	Import into the United States.	Export of domestic merchandise from the United States.
1880	$461,497	$689,104
1881	359,900	721,128
1882	589,024	716,591
1883	384,003	694,565

Dutch.—The West India possessions of the Netherlands cover an area of 1,130 square kilometres, and consist of the following islands:

ISLANDS.	Area, square kilometres.	Population.
Curaçoa	550	24,506
Bonaire	355	5,060
Aruba	165	6,193
St. Martin's (Dutch portion)	47	3,236
St. Eustatius	21	2,256
Saba	13	2,202

The colony of Surinam, or Dutch Guiana, in South America, measures 119,321 square kilometres, and has a population of 69,856; its capital is Paramaribo, with 27,416 inhabitants.

The island of Curaçoa is a free port, and has been till latterly a sort of entrepot for Dutch colonial trade with Venezuela.

The American trade with the Dutch West Indies in the past five years has been as follows:

FISCAL YEAR.	Import into the United States.	Export of domestic goods from the United States.
1879	$647,402	$622,171
1880	1,855,517	837,288
1881	2,594,376	921,475
1882	1,582,133	742,304
1883	882,058	579,690
Total	$7,061,486	$3,703,927

French.—The French West Indies consist of the island of Martinique on the one hand, and of Guadeloupe and dependencies, Les Saintes, Marie-Galante, St. Martin, and St. Barthélemy or St. Barts, on the other. Martinique has an area of 988 square kilometres, while Guadeloupe and dependencies measure jointly 1,870. The population of the former is 166,100, and of Guadeloupe and dependencies 192,735.

Martinique.—Sugar-making has increased notably both in Martinique and Guadeloupe of late years, due to the introduction of central sugar-houses, perfected machinery, and the latest improved processes. In 1880 there were under cane-culture in Martinique 19,364 hectares, of 2½ acres, producing 41,820 tons sugar of 2,240 pounds, worth 19,320,000 francs; 1,326,000 litres molasses (100 litres = 22 gallons), worth 265,000 francs; and 9,170,000 litres of rum, worth 3,209,000 francs. Sugar had pretty much superseded all other agricultural products. The aggregate value of landed property in the island was 73,000,000 francs.

Guadeloupe.—In 1880 Guadeloupe turned out 49,982 tons of sugar, worth 31,666,000 francs; 4,580,000 litres of molasses, worth 1,145,000, and 2,842,000 litres of rum, worth 2,274,000 francs; 865 tons of coffee, 21 of cotton, 103 tons cocoa, and 4,000,000 francs' worth of cereals and vegetables, besides 566 tons of annatto. In 1881 Guadeloupe exported to France 21,446,095 francs' worth of produce, and imported thence 15,770,070 francs' worth of merchandise.

The sugar importation from the French West Indies into the United States is shown in the following:

	Pounds.		Pounds.
1878	65,528,822	1881	59,964,077
1879	70,551,547	1882	59,952,340
1880	70,023,988		
Total			326,020,274

During the fiscal year 1883 the United States imported from the French West Indies $2,895,857 worth of products, and exported thither $1,783,322 worth of domestic merchandise.

Guiana.—French Guiana, commonly called Cayenne, is a penal colony in South America. It has an area of 121,418 square kilometres, and 27,333 inhabitants. The subject of predominant interest in the colony in 1883 was the change in the methods employed for working the gold-fields. Instead of confining the search for the precious metal to placer or surface mining, a shaft has been sunk on the St. Elie placer, and a quartz-mill erected. The French mining-engineer, M. Nibaut, says: "Gold-mining is at present the chief and, it may even be said, the only source of wealth in the country. The local authorities have made grants to work the auriferous region to the extent of 10,000,000 hectares, although only 2,000,000 hectares of surface in the colony really contain any gold. For these concessions the colonial government collects annually, from the parties to whom the privilege of working the mines is granted, half a franc per hectare; it levies besides a tax of 5 per cent. on the gold extracted, and 8 per cent. export duty."

American Trade.—The American trade with French Guiana has been as follows:

FISCAL YEAR.	Import into the United States.	Export of domestic goods from the United States.
1879	$15,789	$69,387
1880	8,272	75,645
1881	3,103	65,762
1882	18,453	97,677
1883	18,437	101,013
Total	$59,054	$409,984

WEST VIRGINIA. State Government.—The following were the State officers during the year: Governor, Jacob B. Jackson, Democrat; Secretary of State, Randolph Statnaker, Jr.; Treasurer, Thomas O'Brien; Auditor, Joseph S. Miller; Superintendent of Free Schools, Bernard L. Butcher; Attorney-General, C. C. Watts. Court of Appeals: President, Okey Johnson; Judges, Thomas C. Green, Adam C. Snyder, and Samuel Woods.

Legislative Session.—The Legislature convened on the 10th of January, and adjourned on the 23d of February. On the 23d of January, John G. Kenna, Democrat, was elected United States Senator by a vote of 53 to 28 for George G. Loomis, Republican, and 5 for John Y. Jarney, Greenbacker. Among the acts passed were the following:

To suppress prize-fighting; to prohibit the obstruction of the public streams of this State by felling and leaving timber in the same; to authorize railroad corporations to become surety for or guarantee the debts of railroad companies; imposing a tax of twenty-five cents on the one hundred dollars valuation of all real and personal property not exempt from taxation, for general purposes, for the year 1883; providing for the keeping of ropes, wire-ladders, or other proper fire-escapes, in all rooms above the second floor in all hotels and taverns; establishing "Scribner's rule" as the lawful rule for the measurement of lumber, logs, and timber of all kinds; regulating the working and proper ventilating and drainage of coal-mines, and providing for the appointment of a mine inspector; for the appointment of a commission to ascertain the facts concerning and to consider the assessment and taxation of property in this State, with a view to the revision of existing laws.

A joint resolution was adopted striking out section 7 of Article IV of the Constitution, and inserting in lieu thereof the following:

The general elections of State and county officers, and of members of the Legislature, shall be held on the Tuesday next after the first Monday in November, until otherwise provided by law. The terms of such officers, not elected, or appointed to fill a vacancy,

shall, unless herein otherwise provided, begin on the first day of January; and of the members of the Legislature on the first day of December next succeeding their election. Elections to fill vacancies shall be for the unexpired term. When vacancies occur prior to any general election, they shall be filled by appointments, in such manner as may be prescribed herein, or by general law, which appointments shall expire at such time after the next general election as the person so elected to fill such vacancy shall be qualified.

This proposed amendment is to be submitted to the people at the general election in 1884. If it shall be adopted, it has been questioned whether in 1884 there will not have to be two elections—one in October under the old provision, and a second in November under the new. A prohibitory amendment passed the House by a vote of 49 to 14, but it was rejected in the Senate by a vote of 15 to 11.

Congressional Districts.—The following are the new Congressional Districts, formed in 1882:

1. Braxton, Brooke, Doddridge, Gilmer, Hancock, Harrison, Lewis, Marshall, Ohio, Tyler, and Wetzel counties.
2. Marion, Monongalia, Preston, Taylor, Barbour, Randolph, Tucker, Pendleton, Grant, Hardy, Mineral, Hampshire, Morgan, Berkeley, and Jefferson.
3. Boone, Clay, Fayette, Greenbrier, Kanawha, Logan, Mercer, Monroe, McDowell, Nicholas, Pocahontas, Raleigh, Summers, Upshur, Webster, and Wyoming.
4. Mason, Pleasants, Ritchie, Wirt, Jackson, Wood, Calhoun, Roane, Putnam, Cabell, Wayne, and Lincoln.

An election was held in the third district on May 15th to fill the vacancy caused by the resignation of Mr. Kenna, elected to the Senate. The following was the result: Charles P. Snyder, Democrat, 9,621; J. H. Brown, Republican and Greenbacker, 8,391. The vote in 1882 was: Democratic, 10,279; Republican, 5,814; Greenback, 1,454.

Finances.—The estimated receipts for the fiscal year ending Sept. 30, 1884, are:

For the State fund	$395,850 00
Add balance (estimated) on hand	14,465 40
Total	$410,315 40
The estimated charges for that year are	338,700 69
Leaving a balance of	$71,614 71

The assessed value of personal property in 1881 was $37,562,854; of real estate, $105,448,502.37.

Education.—The total value of school property in 1882 was $1,823,987.16; whole number of school-houses, 3,839; number of teachers employed, 4,360.

The catalogue of the State University for 1881–'82 shows an increase of students over former years, the number being 177.

WISCONSIN. State Government.—The following were the State officers during the year: Governor, Jeremiah M. Rusk, Republican; Lieutenant-Governor, Samuel S. Fifield; Secretary of State, Ernst G. Timme; Treasurer, E. C. McFetridge; Attorney-General, Leander F. Frisby; Superintendent of Public Schools, Robert Graham; Insurance Commissioner, P. L. Spooner; Railroad Commissioner, Nils P. Hanger. Judiciary, Supreme Court: Chief-Justice, Orsamus Cole; Associate Justices, William P. Lyon, Harlow S. Orton, David Taylor, and John B. Cassody.

Legislative Session.—The Legislature convened on January 10th, and adjourned on April 4th.

The following is a brief outline of the most important business session:

The 14th judicial circuit was created out of the 10th. The income of the State University was increased by about $13,000 per annum. The county of Sawyer was created out of portions of Ashland and Chippewa, and Washburn from a portion of Burnett. A bill was passed allowing two or more continuous railway lines running to a particular point to consolidate; this is a scheme for the especial benefit of the Northwestern and Omaha lines. A bill went through allowing the St. Paul Railway Company to issue stock on any lines heretofore or hereafter purchased, or on coal lands purchased by it. Another railway bill allows companies to condemn lands for spur tracks running to mills and warehouses. A very stringent tramp law was passed, providing for the incarceration of vagrants for one year in the State prison. A bureau of labor statistics was created. The following villages were incorporated as cities: Kewaunee, Menomonie, Marshfield, Hartford, De Pere, Tomah, Sparta, Merrill, Edgerton, Sturgeon Bay, Black River Falls, Nicolet, Geneva, Mauston, and Colby. The bill regulating the dealing in futures was passed.

The direct appropriations of the session amounted to $573,470.71, of which the sum of $523,800 was for the charitable, reformatory, and penal institutions. The tax-law provides that a State tax of $110,000 shall be levied upon the taxable property of the State of Wisconsin for the year 1883, and a State tax of $240,000 shall be levied upon the taxable property of the State of Wisconsin for the year 1884, in addition to all other taxes and charges authorized to be levied for each year aforesaid.

Finances.—The following were the balances at the close of the month of December, 1883:

General fund	$482,739 22
School fund	33,408 90
School-fund income	23,501 50
Normal School fund	52,249 05
Agricultural College fund	3,043 50
Drainage fund	30,597 84
Delinquent tax fund	1,200 38
Deposit fund	11,225 33
Redemption fund	157 06
St. Croix L. S. R. R. trespass fund	36,783 18
St. Croix L. S. R. R. deposit fund	408 02
Wisconsin farm mortgage fund	6,088 61
Allotment fund	916 54
Total	$682,379 14

Schools.—At the close of the school year, May 31, 1882, there were in the State 257,429 children between the ages of seven and fifteen years. Of these, 223,575, 87 per cent., attended public school some time during the year—an average of seventy-three days. The number of school-houses in the State was 5,808. The number of city school systems was thirty-one, and the number of school districts and sub-districts, outside of cities, 5,593. There were twelve towns maintaining the township system. There were required for all the public schools 7,098 teachers. During the year there was spent for teachers' wages $1,437,439.19; building and repairing cost $272,824.-

68; the salaries at the State University amounted to $48,429.40, and the Normal School salaries to $59,642.84.

In 1879 the Legislature of the State adopted the compulsory education scheme. The attendance of the children between seven and fifteen years of age was required for at least twelve weeks in each school year.

Railroads.—The comparative tables annually prepared by the State Railroad Commissioner show that the roads which traverse Wisconsin have a total of $157,618,520.30 of common stock, of which $40,674,680.17 are apportioned to Wisconsin. The total of preferred stock is $100,374,834.47; for Wisconsin, $19,888,974.63. Total debt of whole lines, $183,830,621.73; for Wisconsin, $57,556,114.68. The total amount spent for construction and equipment for the whole lines during the year, not including the Northern Pacific, was $24,838,902.61; for Wisconsin, $8,002,066.19. The earnings for all lines in Wisconsin were, during the year: From passengers, $5,306,176; from freights, $13,299,305.95; from mails, express, etc., $1,052,165.51; making the total earnings for this State $19,706,857.84. For Wisconsin, the taxes paid by railroads from June, 1882, to June, 1883, were $648,395.27; rentals paid, $543,056.47; interest paid, $3,603,390.88; dividends paid, $1,812,128.65.

Lumber.—The report of lumber district No. 2 shows the following:

Logs scaled at the mouth of Black river	178,539,490 ft.
Lumber manufactured at La Crosse and immediate vicinity	144,500,000 ft.
Shingles manufactured in district	58,000,000
Lath	27,600,000

The report of district No. 11 contains the following figures: Logs scaled, 46,000,000 feet; manufactures, 49,000,000 feet; lath and shingles, 14,700,000.

WOOD, James Frederick, an American Roman Catholic prelate, born in Philadelphia, April 27, 1813; died there June 20, 1883. His parents were English, and came to America a few years before his birth. His father was a merchant and importer. After being educated in England, he went to Cincinnati, in November, 1827, and, having taken a clerkship in the United States Bank, he rose gradually, in the course of eight years, to the place of cashier. He was also for three years in the Franklin Bank of Cincinnati. Mr. Wood was of Protestant parentage, but became a Catholic, and was baptized April 7, 1836. His attention was now turned to the vocation of the priesthood, and he accordingly went to Rome in 1838, studied there for nearly seven years, and in March, 1844, was made a priest. In the autumn of that year he returned to the United States, and was appointed assistant rector of the cathedral in Cincinnati. He filled this place for ten years, when he became pastor of St. Patrick's Church in the same city. While discharging his duties as pastor he was appointed Coadjutor-Bishop of Philadelphia, with the right of succession. He was consecrated bishop April 26, 1857. The diocese at that date included nearly all Pennsylvania, West New Jersey, and the whole of Delaware. The diocese was in a very bad condition financially, but the new bishop showed himself equal to the situation. He began at once to organize the cathedral parish, built a chapel, introduced a wider range of devotions,

JAMES FREDERICK WOOD.

gathered the people together, and discharged all the duties of a parish priest with a zeal and regularity which soon made the parish one of the strongest in the city. He gave particular attention to financial questions, and it is not too much to say that to him almost alone is due the credit of extricating the diocese from its difficulties.

On the death of Bishop Neumann, Jan. 5, 1860, Bishop Wood succeeded to the title and full administration of the diocese. In November, 1864, he consecrated his cathedral. All the charitable institutions received improvement and extension. New religious orders were introduced. He established the Home for Destitute Orphan Girls, enlarged St. Vincent's Home, aided the Sisters of the Good Shepherd, brought in the Little Sisters of the Poor, and established the Sister Servants of the Immaculate Heart of Mary. He was especially urgent in forwarding the interests of his Theological Seminary at Overbrook, near Philadelphia, the corner-stone of which was laid April 4, 1866.

In February, 1875, Pope Pius IX erected Philadelphia into a new metropolitan see, and Bishop Wood attained to the dignity of archbishop. He was invested with the pallium June 17, 1875. Bishop Wood was a firm believer in the doctrine of infallibility.

WORLD'S FAIRS. Amsterdam.—The International Colonial and General Exportation Exposition was opened in Amsterdam, Holland, May 1, 1883, and closed on October 31st. It

was organized by a syndicate of Belgian and Dutch capitalists. The foundation of the undertaking was a complete representation of the Dutch East India colonies, including the manners and customs of the natives, their systems of agriculture, transportation, and commerce, domestic arts, mechanical trades, weapons of war, types of the people, costumes, and general products. This department of the Exposition was comprised in a special building, with minor structures. The entire Exposition occupied twenty-five acres, in the suburbs of the city. Within this space were grouped the various buildings, about fifty in number. In the main building were arranged the manufactures and products of the different countries exhibiting. Of these the countries exhibiting the most fully were in this order—France, Belgium, Holland, Germany. The finest exhibit, and said to be the finest ever made by that country, was by France. The poorest was from the United States, from which country no commissioners were sent, the display made being by agents in Europe of American manufactures, and comprising only a few articles. Machinery Hall included machinery in operation from France, Germany, Belgium, Holland, the United States, and Great Britain. A special building, forming an annex to the main building, contained representations of numerous small industries and manufactures in operation, and here were disposed the greater number of those minor exhibits which are usually scattered throughout an exhibition, and which include small wares for sale and strictly for exhibition or competitive purposes. There were also separate structures devoted to special exhibitors, besides a pavilion for the city of Amsterdam, one for the King of Holland, the Press Pavilion, and numerous restaurants representing Holland, Germany, France, England, and other countries. The grounds were tastefully laid out in flower-gardens; and as the situation was intersected by canals, there was opportunity for a novel display of Chinese junks, Javanese and other East Indian boats and bridges, displaying the designs of different countries. One building was devoted to a Javanese band or orchestra, the *Gamelang*, comprising thirty-eight native performers on the musical instruments of Java, a most novel and interesting attraction. Of the entire colonial exhibit it is to be said that it was the largest, most comprehensive, and most instructive ever made. The general exhibition, while it partook of the characteristics of all such displays, was notable in having fewer insignificant and frivolous exhibits than any other. In point of size, the Amsterdam Exposition will rank next after that of Paris in 1878. The fine-art exhibits were contained in a special building, and numbered as many as 2,000 paintings of Holland, Belgium, France, Italy, Spain, Germany, and Great Britain. This display was not, as a whole, first rate in merit, though the Dutch and Belgian works presented the best specimens of the artists of those countries. The principal structures were remarkably handsome, highly ornamental, and arranged to display the exhibits to the best possible advantage. Nothing could be finer, within the same limits, than the general effect of the display, nor any scene more picturesque than the grounds and the buildings, particularly the façade of the main building, constructed after an Oriental pattern, in a semicircular form, supported by two towers resting, respectively, upon the backs of four monster elephants, and surmounted by figures of Indian gods. The entrance to this was through the New Royal Museum, in which were exhibited the splendid articles from the Kensington Museum, and those brought by the Prince of Wales from India, gifts made to him by the native rajahs. An important and most interesting special exhibit was that of diamond cutting and polishing, an industry for which Amsterdam is the most famous locality in the world. The horticultural display was contained in a separate building, but was of minor importance. The Press Pavilion was an elegant structure, containing all necessary accommodations for the journalists of the world who visited the Exposition in the prosecution of their duties.

The charge for admission to the Exposition varied on different days, the highest being a florin, or forty cents. Arrangements were effected with the French and Belgian railways, by which parties of excursionists came from remote parts of the Continent at reduced prices, while the entire system of Dutch railways offered similar facilities. By these means the peasantry and farming classes were able to visit Amsterdam and the Exposition at a moderate expense, and the grounds and buildings were made peculiarly interesting by the presence of the Friesland and North and South Holland peasantry in their peculiar costumes.

The entire grounds of the Exposition were granted to its administration by the city officials of Amsterdam. As a charge for space was made to exhibitors, of fifteen florins per square metre, an enormous income was realized from this source, and the Exposition was thus organized on a profitable basis without regard to the sale of admissions. The articles exhibited, excepting in certain specified cases, were all offered for sale, and a considerable traffic was conducted in the smaller objects. The administration and general supervision were excellent, the police and sanitary arrangements entirely satisfactory.

An important feature of the Exposition was the series of conferences or scientific reunions for the discussion of topics in the arts and sciences, hygiene, political economy, international jurisprudence, etc., which were participated in by some of the leading specialists of Europe. Medals and diplomas were awarded by a carefully chosen list of juries comprising some of the leading scientists and experts of the different countries exhibiting.

The colonial exhibits were collected under the auspices of the Colonial Department of the Government, by experts sent to the East Indies for the purpose, and at the close of the Exposition these were given by the Government to the Museum of Leyden.

India, China, Japan, and the English Australian colonies were largely represented in the Exposition; Uruguay, Chili, and Brazil made also a fair display. The Dutch colony of Surinam made a fine exhibit, including types of the natives. Egypt was fully illustrated, as were also Tunis and Morocco. No more perfect and comprehensive display was ever made in any exhibition by any country, in proportion to its size and capacity, than was made by Holland at the Amsterdam Exposition. This portion of the collection was a matter of surprise to visitors, on account of its extent, and the general beauty and excellence of the exhibits. In the articles of manufacture special to Holland, the display was complete; in Schiedam gin, candles, Delft chinaware, Delft-Smyrna carpets, and pipes, this country has made a world-wide reputation. Such was also the case in regard to the Belgian exhibits of laces, carved-oak furniture, glass, metal-work, and carpets.

At the close of the Exposition, as was the case in that of Paris in 1878, a monster lottery of exhibits was organized under Government permission, the prizes being articles purchased from the exhibitors of the different countries. The official report of the Amsterdam Exposition not having been made at the time of this writing, its statistics are not accessible. In a general way, it is believed to have been, financially, more successful than any previous undertaking of the kind. The President of the Exposition was Herr D. Cordes, and the Commissioner-General, M. E. Agostini.

Boston (Mass.) Foreign Exhibition.—This exhibition differed from all that have preceded it in the United States, in being devoted exclusively to products and manufactures of foreign countries. It was organized in 1882, under the general laws of Massachusetts, by charter granted for "the general improvement of the manufacturing and mechanical interests of the United States, by means of holding worthy and adequate exhibitions of foreign manufactures, artistic and natural productions; the improvement of educational facilities afforded to artisans; the providing of foreign libraries of reference, for use at such exhibitions; the providing of lectures and discussions on subjects of industry, science, and art; and the providing of all other proper means by which these objects can be accomplished." By an act of Congress, approved June 28, 1882, all goods intended for this exhibition were admitted free of duty while on exhibition, the building being made a bonded warehouse for this purpose, and the goods permitted to be sold at the close upon payment of duty.

The exhibition was organized under the name of the Foreign Exhibition Association, by the issue of stock to the amount of $25,000. The officers of the association were as follow: Nathaniel J. Bradlee, President; C. B. Norton, Secretary; Frederic W. Lincoln, Treasurer. Directors—Nathaniel J. Bradlee, Frederic W. Lincoln, Frederick O. Prince, Lansing Millis, James H. Wilson, Francis A. Walker, Henry W. Peabody, William A. Hovey, Hartley Lord, S. D. Sergeant, J. W. Wolcott, Nathan Appleton, Theodore N. Vail, Joseph B. Thomas, Jr., Edward C. Ellis, Charles D. Barry. The general manager was C. B. Norton, secretary. Commissioners were sent to foreign countries to obtain exhibits, which were obtained from Algeria, Australasia, Austria, Belgium, Brazil, Canada, Ceylon, China, Colombia, Corea, Cuba, Denmark, Egypt, England, Fiji islands, France, Germany, Guatemala, Hawaiian islands, Holland, India, Ireland, Italy, Japan, Mexico, Morocco, Norway, Persia, Portugal, Russia, San Salvador, Scotland, Siam, Spain, Sweden, Switzerland, Turkey, and Venezuela. The exhibition was held in the building of the Massachusetts Charitable Mechanics' Association, on Huntington Avenue, in the reclaimed district, an irregular brick structure, three stories in height, built for exhibition purposes; the second and third stories formed galleries around the two main halls into which it was divided, with side-rooms for offices, restaurant, picture-gallery, etc.

The interior of the building was handsomely decorated with Persian and Indian rugs, trophies of flags, and other ornamentation. It was lighted by electric light and heated by steam, this exhibition being the first of its kind ever held in winter. On the main floors special buildings were erected by exhibitors; in the center of Washington Hall (so called) was a music pavilion, where an orchestra performed at stated times, music being also supplied by the great organ at one end of the same hall.

Of the foreign countries represented, the following sent commissioners having charge of their exhibits: Japan, Guatemala, Persia, France, Hawaii, Austria, San Salvador, Denmark, Norway, and Sweden. The number of separate exhibits was, in round numbers, 5,000, of which the largest display was from Japan, in china-ware, bronzes, ivory-carvings, and embroideries.

The Foreign Exhibition opened on September 3d, with appropriate ceremonies, including an oration by the Hon. John Jay, and closed on Jan. 12, 1884. The charge for admission to the exhibition was fifty cents, and there was no charge for space to exhibitors. Medals and diplomas were awarded. Financially, the exhibition was not successful, there being a deficit of about the amount of the original issue of stock, which was made up by subscription on the part of the stockholders.

WYOMING. Territorial Government.—The Territorial officers during the year were as follows: Governor, William Hale; Secretary, Elliot S.

N. Morgan; Treasurer, F. G. Warren; Auditor, Jesse Knight; Superintendent of Public Instruction, John Slaughter. Supreme Court: Chief-Justice, James B. Sener; Associate Justices, J. B. Blair and S. C. Parks.

Resources and General Condition.—The area of Wyoming is nearly 100,000 square miles. Its population is about 35,000, more than half of whom are in the towns on the line of the Union Pacific Railroad and its branches.

The mean elevation is 6,400 feet above the sea-level. The Rocky mountains traverse the territory from the northwest to the southeast in irregular ranges. The air is pure, light, and dry. The average rainfall is not one fourth that in the Mississippi river basin; irrigation is therefore depended upon for the raising of crops. The winters are open; there are but few snow-storms, and the strong winds which form a feature of the climate usually clear away the fallen snow in a few days.

The precious and superior metals are found widely distributed over Wyoming. The mines are, however, not far developed.

More than one fifth of the territory is covered with timber.

Cheyenne, the capital, has a population that is estimated at between 5,000 and 6,000. The stockmen of the territory make it their headquarters, and many of them have built handsome residences in the city.

Laramie City is the county town of Albany county, and the center of trade for the Laramie plains. Its population is about 4,000. The Union Pacific Railroad operates large rolling-mills in Laramie, and is now building works for the preparation of soda for the market.

Cattle.—In round numbers, the statistics of Wyoming's cattle business for 1883 may be put down thus: Stock, 800,000 head; value, $30,000,000; shipments, 200,000 head; value, $9,000,000 to $10,000,000.

Sheep.—It is safe to estimate the number of sheep now in Wyoming at upward of 750,000. Next to the cattle business ranks sheep husbandry. Very little loss is sustained on account of disease. The dryness of the soil not only prevents foot-rot, but sheep affected with it when brought here are readily cured.

Horses.—Of late years many Wyoming ranchmen have been turning their attention to horse-raising. The business can be conducted here cheaply, horses being allowed to graze all the year round. The number of horses assessed in 1883 was 26,863.

Miscellaneous Statistics.—In the following table the first column of figures represents the population of Wyoming as ascertained by the census of 1880. The second is the population of 1882, as estimated on a comparison of the vote cast at every election precinct in 1880 and 1882:

	1880.	1882.
The Territory....	20,779	27,200
Albany county.....	4,625	6,200
Carbon county.....	3,488	4,400
Crook county.....	289	800
Laramie county.....	6,400	8,200
Johnson county.....	637	1,400
Sweetwater county.....	2,561	3,300
Uintah county.....	2,879	3,400

The number of schools in 1883 was 75; pupils enrolled, 3,371. The assessed value of property the same year was $21,566,993.50.

At the close of business on Dec. 31, 1883, on a levy of 1 mill on the dollar, the balance in the hands of the treasurer was $49,782.68.

In 1882 Morton E. Post, Democrat, was elected delegate to Congress by a vote of 5,813 against 4,702 for his Republican opponent.

Indians.—Although there have been no hostilities with Indians for several years in Wyoming, the settlers in the northern part of the territory have been annoyed by bands of reservation Indians roaming at large over the public lands, professedly on hunting expeditions. The stockmen of northern and northeastern Wyoming have Indian reservations on three sides of their grazing country. They assert that the Indians live for protracted seasons in localities where there is little or no game, and that the losses to herd-owners, through having their cattle killed by them for food, are increasing every year, and are now so great that organized bodies of stockmen will take stringent measures to check the evil if no action is taken with that end in view by the Indian Bureau.

ZULULAND. See CAPE COLONY AND SOUTH AFRICA.

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