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and the Extension of the Religious Parliament Idea.

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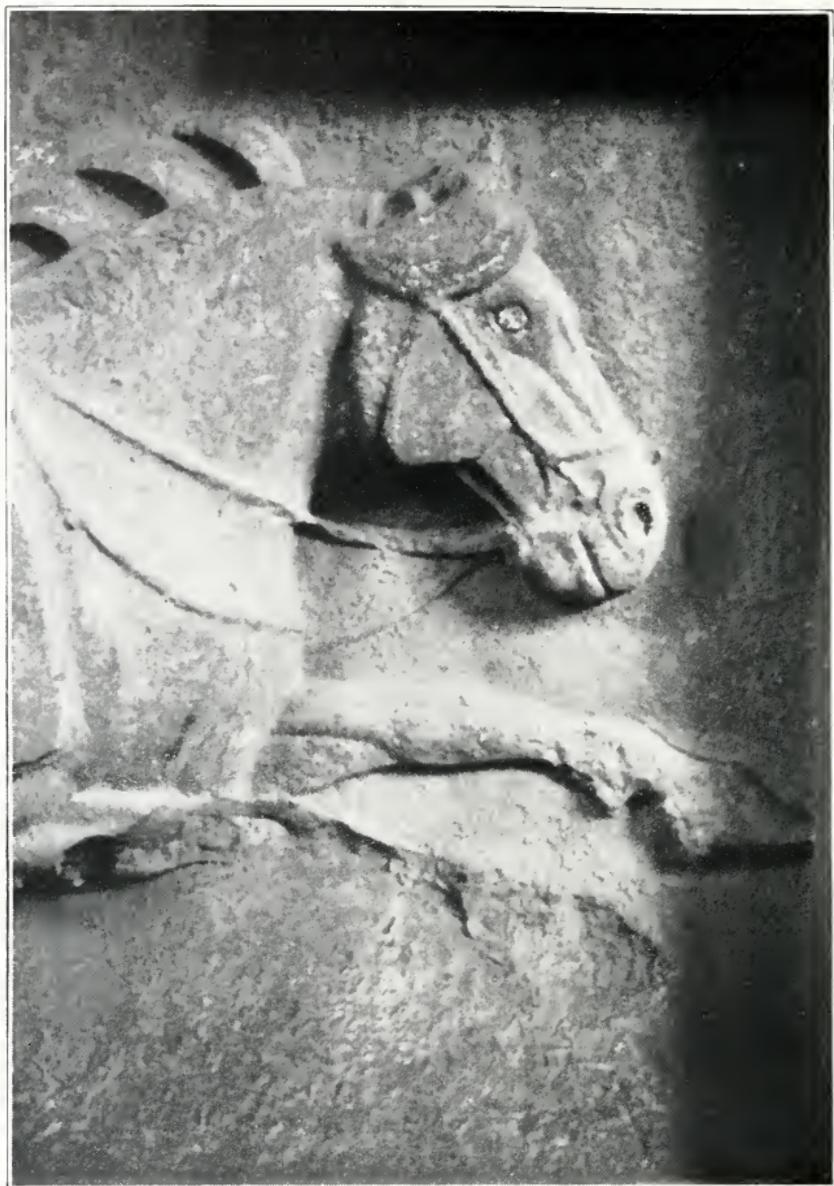
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THE BRICK RED HORSE

Detail of one of the horses of T'ang T'ai Tsung.
Sian-fu Museum.

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PROVINCIAL MUSEUMS OF NORTH CHINA

BY LAURENCE SICKMAN

THE provincial museum is an old institution in China. If by the term museum, we understand a place where objects of interest or historical value are exhibited and made accessible, then the present-day museums of China may lay claim to a very ancient heritage. It has long been the custom to gather stele of importance in the local yamen for preservation. In large cities, the Confucian temples have served as the repository for stone inscriptions of merit. The famous Pei Lin in Hsi An-fu is, indeed, an excellent example of this type of local museum. There, among the magnificent stele gathered in the Confucian temple, are not only stones cut especially for the temple, but also stele brought from the neighboring regions. In this way, the Confucian temple has come to house a number of highly important Buddhist stones. The modern provincial museums have greatly enlarged upon these simpler institutions concerned only with preservation and display. But the provincial museums are not new institutions and it would be a mistake to consider them as a Western importation.

The opening of the Ku Wu Ch'ên Lieh So just twenty years ago and the Palace Museum ten years later, marked a new epoch in Chinese cultural activity. The great treasures of the former Ch'ing dynasty were for the first time available to the public, and scholars were offered a field of research without parallel. This stimulus to public and scholarly interests was immediately followed by the rapid organization of a number of learned societies and research institutions. In 1928, the National Research Institute was organized, to be followed by the Peiping Institute, the Chinese Architectural Society, and a number of similar institutions engaged in the study and publication of Chinese antiquities. Under changing conditions, the publication of Chinese antiquities under changing conditions, the

provincial institutions have readily adapted themselves and become active organizations engaged in excavation, research and public enlightenment. The organization of the National Research Institute (also known as the Academia Sinica), the Peking Research Institute and similar scholarly organizations naturally brought with them a great enlargement of scope to the provincial museums. Thus all work of excavation is carried on through the coöperation of one of these central organizations and the local provincial authorities. For example, the excavations at An Yang are jointly under the auspices of the National Research Institute and the Honan provincial government. The results of their discoveries are divided between the two institutions. Likewise, the work in Shantung is a matter of coöperation with the Shantung authorities and a proportion of the material is left in Chi Nan-fu and exhibited in the local museum.

We may pause here to consider briefly the organization of the National Research Institute whose activities are so important in the development of the provincial museums. The National Research Institute or the Academia Sinica¹ was first organized in Canton by Fu Ssü-nien, Yang Chen-sheng, and Ku Chieh-kang in the year 1928. At that time the program of the institution was arranged under eight different heads, namely: History, Chinese spoken language, Critical examination of texts, Popular customs, Archaeology, Chinese written language, Anthropology, and Study of the Tun Huang material. In 1929, the Institute was moved to Peking and the original eight proposals were condensed to three, which are: History and Critical examination of texts, the Spoken language and popular crafts, and third, Archaeology and Anthropology.²

We are here concerned only with the Academy's last branch of research. In this field the most important work has been carried on at An Yang in northern Honan, and at Lung Shan south of Chi Nan-fu in Shantung. The work at An Yang, which has brought to light so much important material relating to the Yin site and Shang culture,³ has been carried on with the coöperation of the Honan provincial government, and a large amount of the material unearthed has gone to the province of Honan to be exhibited in the museum of K'ai Feng.

¹ Kuo Li Chung Yang Yen Chiu Yuan Li Shih Yü Yen Yen Chiu So.

² See: Pei P'ing Hsüeh Shu Chi Kuan Chih Nan, by Li Wen-ch'i, p. 75.

³ H. G. Creel, "The Re-Discovery of Pre-Confucian China," *Open Court*, xlix, pp. 177 ff.

K'ai Feng on the Lunghai railway line is situated in the north-eastern part of Honan just south of the Yellow River. Famous as the great capital of the Northern Sung dynasty, K'ai Feng has many important monuments of history and art. The most striking is, perhaps, the great T'ieh T'a, or Iron Pagoda, built in Sung times and later completely encased in polychrome glaze tile of the early Ming period. The provincial museum is not far from this magnificent architectural achievement. The museum is housed in a number of connected, rambling buildings given over to a variety of exhibitions. Like all the provincial museums, the one in K'ai Feng serves a number of diverse purposes. It includes collections of natural history, geology, ethnology, art, and archaeology. The greatest treasures of the museum are the inscribed bones from An Yang, the Hsin Chêng bronzes and the large collection of funerary epitaphs engraved on stone.

The Hsin Chêng bronzes, now on display in the K'ai Feng museum, are an important and impressive series which were found at Hsin Chêng Hsien, Honan in 1923. These bronzes were first published by Carl W. Bishop in a paper of the Smithsonian Institute.⁴ Mr. Bishop chanced to be in the locality at the time of the discovery of the bronzes and was able to give a brief description of the tomb and the pieces as they appeared shortly after their excavation. Later the bronzes were cleaned, restored, and are now handsomely published by the Museum in the *Honan Record of Bronzes and Stones*. This great find comprises about one hundred pieces, a number of which were very large and spectacular. They were all found in one grave which, according to Mr. Bishop, had been the scene of a typical bronze-age burial, including a bronze-fitted chariot with its horse. There was no inscription which might definitely date the bronzes, although Mr. Bishop mentions the existence of a dedicatory inscription of a not unusual type. Although there is considerable divergence of opinion as to the exact dating of this most interesting series, still from the style of ornament and shape of the pieces, it is possible that they may date from the end of the Chou period, perhaps the fourth or the fifth century B.C. Of greatest interest among the lot are a number of large bells, one almost four feet high and beau-

⁴ Smithsonian Report 1926, pp. 457-468.

tifully ornamented with a low design of intertwined dragons. By far the most fantastic are a series of two pairs of large vessels of the type known as *hu*. These great vessels with full swelling bodies and



END OF AN ENGRAVED STONE COFFIN

Northern Wei Period from the Lo Yang Region. Scene represents the snake and tortoise of the North combined with a human figure.
K'ai Feng-fu Museum. Reverse print of rubbing.

long square necks rest on animal feet in the form of crouching tigers. They are also equipped with similar beasts in full relief as handles. One pair has on the lid, which is decorated with flaring petal-like pieces, quite naturalistically rendered cranes with wings spread as though poised for flight.

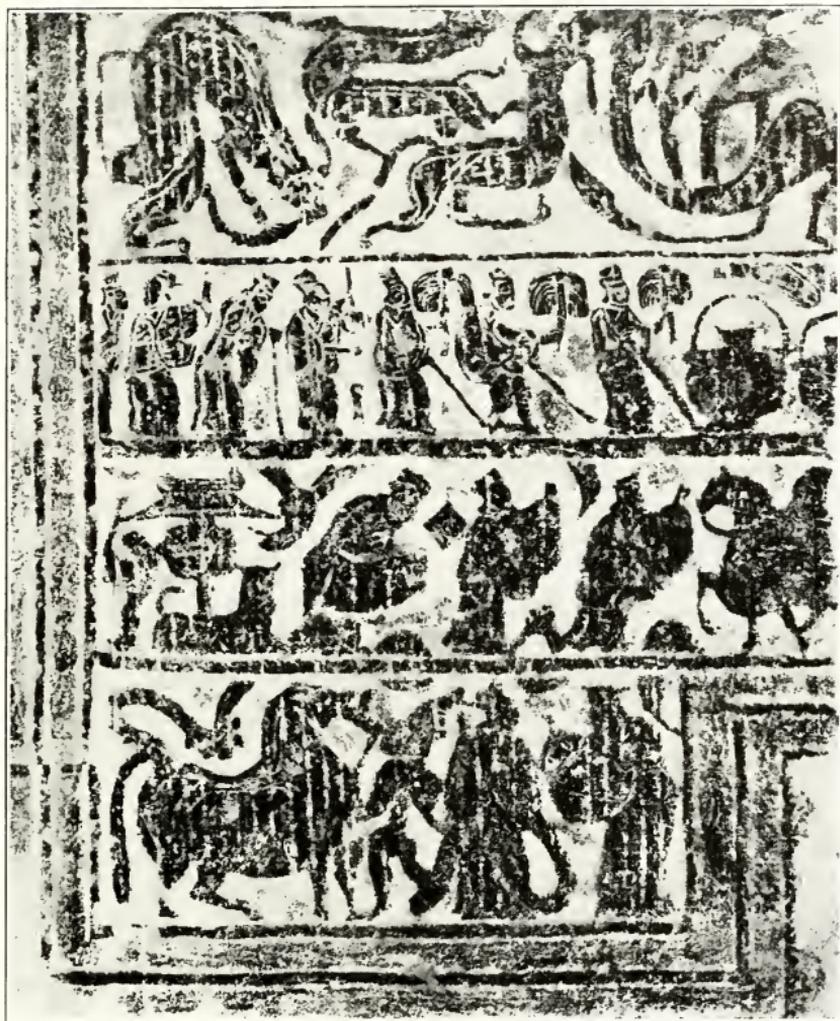
The K'ai Feng museum possesses a wealth of material from the excavations at An Yang. The greater part of this material now on exhibition comprises the inscribed oracle bones, but there are also valuable examples of ivory, bronze, bone, and stone implements. The museum has much material from An Yang and from other smaller excavations which has not yet been thoroughly studied. As this material is gone over, analyzed and published, it will gradually be made accessible to students and to the general public. Among the pieces now on exhibition, one of the most interesting, from the point of view of the art student, is a very large scapula bone, perhaps ten inches long and eight inches wide at the broader end. It is covered with powerful carving in an all-over pattern of T'ao T'ieh masks, and single-horned dragons against an intricate background of *lei wen* or thunder pattern. So far as my experience extends, this is the most complete and elaborate example of carved bone from the Shang site that I know. Such material is of the greatest value for comparative study. These carved bones taken together with the fragments of pottery bronze molds from An Yang, also in the Museum, all excavated under scientific conditions, give a sure and clear criteria for patterns appearing on bronze vessels attributed to the Shang dynasty. A number of the most important, inscribed oracle bones in the Museum have also been published in the large edition of *Honan Record of Bronzes and Stones*.

The funerary epitaphs, or *mu chih*, or *mu chih ming*, are eulogies of the deceased cut on stone slabs and placed in the graves. They vary in size from about one foot square to about three feet square, while the largest stones are sometimes as much as ten inches thick. The inscription is engraved on the upper surface, and sometimes the sides of the stones carry handsome designs of conventional floral patterns. Often there is also a lid. This is a large stone of the same dimensions as the epitaph with the upper edges bevelled so that the square of the top is somewhat smaller under the epitaph proper. This lid is usually ornamented with a central square carrying four, six, or eight large seal characters from which comes their Chinese name, *chüan tsü kai*. About this central square are delicately engraved designs of demons, dragons, or more usually, the four animals of the quadrant often mounted by human riders. Unfortunately, such highly ornamented lids are rare. The inscriptions on these epitaphs generally begin with a list of the titles of the dead,

his genealogy and noble rank. Then there follows an elaborate eulogy often expressed in passages of high literary merit. This is followed by an account of the death and details of the burial, giving precise dates and the location of the tomb. Not infrequently the material is summarized by a poem at the end. The importance of these epitaphs cannot be overestimated. They often contain historical material of great importance. They give the biographies of distinguished people and add an invaluable commentary to the dynastic histories.

Although the use of such epitaphs has continued to the present day, the large majority of those excavated date from the Wei, Sui, and T'ang periods. These epitaphs from the sixth, seventh, and eighth centuries are of considerable importance to students of art history. The calligraphy is often of the highest order being characterized by a strong and powerful style as opposed to the more elegant and less forceful writing of later periods. They present many interesting problems to the student of epigraphy through their use of many unusual forms. As dated material, they comprise the most important body of evidence for comparative examination of undated stones. As examples of art and craftsmanship, the best funerary epitaphs of the Six Dynasties are unrivaled and comprise the main part of non-Buddhist material from that time.

The K'ai Feng Museum possesses what is probably the largest collection of early funerary epitaphs in the world. Many hundreds are on display while large numbers are still in storage through lack of exhibition space. The majority of these stones come from the Lo Yang region for, since Lo Yang was the capital through the Wei and Sui periods, the region is rich in graves of princes and dignitaries of the sixth and seventh centuries. Rubbings of all the epitaphs on exhibition may be purchased at the Museum. The most important have been selected and reproduced by lithograph in the *Honan Record of Bronzes and Stones*. In this publication, sold by the Museum, are reproduced eighty-nine epitaphs of the Wei period, two from Eastern Wei, four from Sui, four from T'ang, and one Sung dynasty piece. Among the other stones in the Museum, one should not fail to mention a large full-sized stone coffin of the Wei dynasty with engraved designs of an especially high quality (page 68).



HAN FUNERARY STONE

From the T'êng Hsien site. Chi Nan-fu Museum. Rubbing.

The Shensi museum in Hsi An-fu, is, like all the other provincial museums in North China, a subsidiary department of the provincial library. Their greatest treasures are, perhaps, four of the famous bas-reliefs representing the horses of T'ang T'ai Tsung which were shot in battle. A set of copies of these stones was made in 1089 by

order of the governor. The museum does not state whether they believe the horses on exhibition to be of the original T'ang set or from the Sung copies. However this may be, they are sculptures of the highest order, and their association with one of China's greatest heroes renders them national treasures of significance (frontispiece).

The Shensi museum possesses some of the most important Buddhist stones of any of the provincial museums. In addition to a number of good Wei stele, there is a series of magnificent large standing figures, several of which have been reproduced by Sirén.⁵

This museum is at present less active, perhaps, than that of K'ai Feng or Chi Nan. But a series of excavations south of Shi An-fu, which are now in progress, are recovering a number of important objects of the Ch'in period. Doubtless, they will be published and exhibited in the near future.

The Shansi Provincial Museum in T'ai Yuan-fu is located in a large temple compound which also houses the library. The main temple buildings have been converted into reading rooms, while the side halls have been reconstructed to house the collections of bronzes, stones, pottery, and other objects for display. Shansi is one of the richest provinces in Buddhist treasures, and with wise providence, the museum in T'ai Yuan-fu has gathered many of the images from ruined temples. The number of Six Dynasty stones is surprisingly small, considering the fact that Shansi produced so many monuments in that period. However, the Northern Wei dynasty is represented by a few small stele. The majority of the Buddhist figures date from the Yuan and Ming periods. An interesting indication of former Buddhist monuments of great scale is given by a huge hand of a Buddhist figure done in black bronze and fully four feet high. Another great fragment of drapery, probably from the same figure, is in the museum courtyard. If the figure had been broken up for the value of the bronze, these figures would scarcely have remained. It may be that these two fragments are all that are left of a colossal figure broken in the great Shansi earthquake early in the fourteenth century which destroyed so many of the province's famous temples with their early wall paintings.

During recent years, the Shansi museum, partially in coöperation with the Freer Gallery of Washington, has been conducting a series

⁵ Sirén, *Chinese Sculpture*.

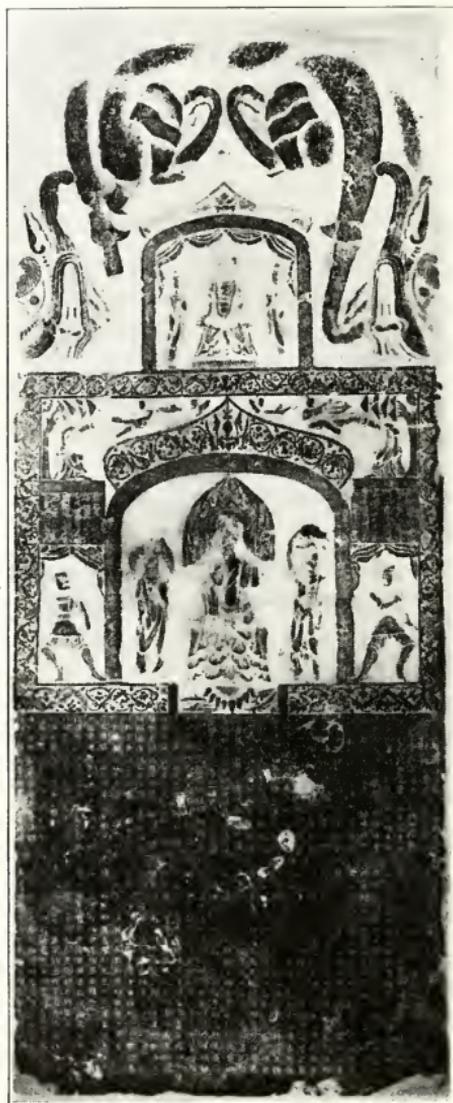
of excavations at a neolithic site south of T'ai Yuan-fu. In addition to a number of stone implements, the excavations have brought to light large quantities of neolithic pottery of the Yang Hsiao type found by Professor Andersson in northern Honan. Great quantities of this pottery, almost all in fragmentary condition, are now on exhibition in the museum. When this material is properly assorted and published it will form a most important addition to our knowledge of neolithic China.

The Shantung Provincial Museum in Chi Nan-fu is one of the best situated and best arranged in North China. It is located in connection with the library in an old garden of great beauty, and faces on a lake formed by the famous Chi Nan springs. The library was founded in 1909 by Lo Hsün-hsün, at that time Provincial Inspector of Education. In connection with the library, he founded a department for the collection and preservation of bronzes and stones. He began the collection of stones, which were from time to time excavated in the province, and the ancient vessels already in other collections. Although, since the founding of the department twenty years ago, there have been many changes of government and considerable political difficulty in Chi Nan itself, nevertheless the museum has steadily progressed and been able to add to its collection.⁶ In 1930, Mr. Wang Hsien-t'ang became director, and under his able guidance, the museum is rapidly becoming one of the best arranged and most efficient in China.

Shantung has long been known to Western students of art and archaeology through the famous Han stones of Hsiao T'ang Shan and Wu Liang Ssü. These stones, engraved in low relief, with scenes of ancient emperors and sages, auspicious spirits and strange beasts, and scenes of daily life, were used to line the stone houses of sacrifice before the grave or often employed within the grave itself. The Chi Nan museum has on exhibition more than fifty such Han funerary stones, representing a variety of techniques from very low relief, incised figures in staccato, to relatively high reliefs where the background is cut completely away and the outline of the figure slightly modeled. There is a miniature tomb door in the collection with an extremely handsome lintel ornamented by three great ram heads in high relief. A very recent acquisition is an exceptionally

⁶ See: Shan Tung Sheng T'u Shu Kuan Chi K'an, p. 53.

large lintel of this type. It is about eight feet long and in addition to the ram-head decoration of the other lintel, it carries elaborate borders of geometric pattern, together with representations of birds,



THE PRIEST CHIH etc. STELE A.D. 530.
Historical Museum, Peiping. Rubbing.

intertwined dragons and similar beasts. An extremely interesting series of stones, which were discovered in 1929 and 1930, and which, to my knowledge, have not as yet been published, are eighteen stones from T'eng Hsien. Among the eighteen stones, there is sufficient variety of technique to prove that they cannot be from the same grave, but in style they seem to be of one period. The probable richness of the Shantung field is well illustrated by the really casual way in which these stones were discovered. Nine of them were found when a certain Mr. Hung was digging the foundation for a house at T'eng Hsien; in the same district Mr. Huang discovered three more while plowing in the field; Mr. Wang Hsien-t'ang, director of the museum, himself discovered two outside the north gate of the city; and two more were found in excavating an old grave, and the remaining two were bought (page 71).

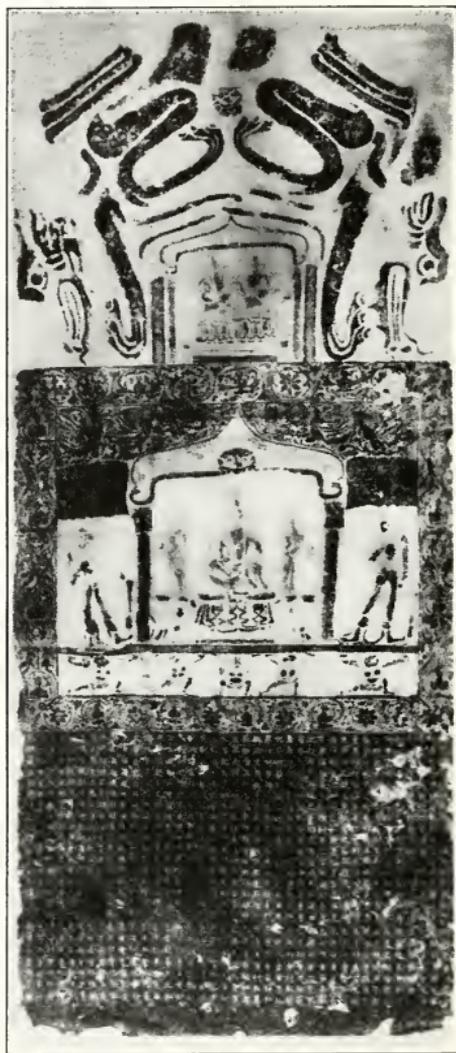
In addition to the Han stones which are all exhibited in one room, there is another stone gallery where funerary epitaphs, inscriptions, and Buddhist sculpture are exhibited. There are a number of Buddhist stones from the Northern Ch'i period and an exceptionally good stele of Northern Wei.

The most important activity of the museum at present is the excavation work being carried on at Lung Shan, south of Chi Nan. There the museum in coöperation with the National Research Institute has uncovered a culture layer very closely related to the Shang dynasty finds at An Yang. Below this Shang level they have discovered a neolithic site of the highest importance. In addition to typical neolithic stone implements, the excavations have yielded some types of neolithic pottery heretofore unknown in China. There are rather coarse types of red ware and a somewhat finer white pottery, but the most remarkable are fragmentary vessels of an extremely thin black pottery with a high gloss, probably produced by some process of polishing.

Peiping remains today the cultural capitol of China. Mr. Li Wen-ch'i in his "Guide to the Organization of Peiping Institutions of Learning"⁷ lists eight research institutes, thirty-three different libraries and seven museums. Of these seven museums the most important are, of course, the two Palace Museums. However, since

⁷ Pei P'ing Hsueh Shu Chi Kuan Chih Nan, Peiping National Library, 1933.

these collections are static, at least no provision is made for adding to the number of objects, we shall not consider them here but rather review briefly the organization and collections of another institution,



THE CHU SHIH-KUAN STELE, A.D. 540
Historical Museum, Peiping. Rubbing.

the Historical Museum. This museum, unlike the others described, is not a provincial organization but is under the control of the national government. The Historical Museum was first organized in 1911 under the Peiping Department of Education but the exhibitions were not open to the public until 1926. Two years later, the control of the museum was transferred to the National Department of Education and in the same year it was combined with the National Research Institute.

The objects taken over from the old Imperial Academy of Learning formed the nucleus of the collection which has since that time been steadily increased by excavation and donation until at present the collection numbers over two hundred thousand objects of historical value. The museum is happily situated in the main hall and two great side galleries of the Wu Men or front gate of the Imperial Palace with a splendid view over the yellow roofs of the Palace Museum. The great number of Sung porcelains recovered from Chü Lu Hsien in southern Hopei is of special interest. The city of Chü Lu Hsien was flooded and destroyed in the Sung Ta Kuan period (1107-1110) and so the remains from there are definitely datable to that period. A great variety of Sung dynasty wares are represented in the museum collection and all from this one site. There are the so-called Northern Celadons, Honan Chien yao, fen ting, as well as the splendid thick white ware, often with black or brown over-decoration, which was manufactured at the place and has come to bear its name. In view of the scarcity of datable Sung ceramics, this collection is of the greatest value to students.

One of the best departments of the Historical Museum is the collection of stones. In addition to over fifty funerary epitaphs of the T'ang dynasty, the museum possesses two early Buddhist stele of the highest quality. Both of these stele come from P'ing Yang in Shansi and, though the dates are ten years apart, the two are identical in style. The one known as the Priest Chih Stele (page 74) bears the date third year of Yung An (A.D. 530) while on the back it bears a curious second dedicatory inscription dated the second year of Jen Shou of Sui (A.D. 602). The back and sides are covered with the names of donors. The second large stele, almost a mate to the one just mentioned, is known as the Chien I Commander-in-Chief, etc., Chu Shih-kuan stele and bears the date sixth year of Ta T'ung of Western Wei (A.D. 540). The back and sides are also covered with the many names of pious donors (page 76).

In principle, the Chinese museums present a double system: there are the national museums (one is planned for Nanking) which, through such organizations as the National Research Institute, collect material from the provinces to a single center where artifacts from all regions may be studied in relation; and a second system of provincial museums, locally supported, where objects particular to the province may be preserved. Already one may see this system at work in the sphere of recent publications. Thus, the Provincial Museum of Honan has published the important funerary epitaphs in their collection, while at the same time the National Library in Peking, a national institution, has under preparation a much larger work, drawing its material from several provinces but employing a farther selection. Without local coöperation such a general work would be an almost hopeless task. But the real importance of the provincial museum lies in the fact that it forms a local center of cultural study. The enormous task of preserving, assorting and interpreting China's antiquities, and making them accessible to the public must in the end rest largely with these local centers.

EDUCATION IN TERRITORIES UNDER FRENCH MANDATE

BY HABIB KURANI

BEFORE the Great War, the territory under French Mandate was a Turkish Province extending from the Taurus Mountains on the north to the Sinai Peninsula on the south and from the Mediterranean in the west to the desert and Iraqiian boundary to the east—a total area of about 90,000 square miles.

The Treaty of Versailles separated the country from Turkey on the north, from Iraq on the east, stripped Palestine off its southern boundary, and placed it under the Mandate of France.

Politically the country is divided into five units or territories each with its own government and laws: the Republic of Syria, the Sanjak of Alexandretta, the Government of Jabal Druze, the Government of Latakia, and the Lebanese Republic—with population estimated at about three million. The people of each of these territories are granted self-government to the extent to which, in the opinion of the French authorities, they have evolved and matured politically.

The constitution of each of these governments makes full provision for the freedom and encouragement of public education, its aim being: “to raise the moral and intellectual level of the population, to develop their national spirit, and to instill in them a love for peace and a sense of solidarity.”

Public Education. With France assuming responsibility over these territories, it is only natural that the system of public education here bears a very close resemblance to the French system and only varies from it in completeness and in the fact that Arabic replaces certain other languages of instruction in the curriculum.

To the casual observer public education in the territories under French Mandate appears to be rather decentralized, with each of the five territories assuming full responsibility over its education. But a deeper scrutiny of the five systems found here reveals a high degree of centralization in the system as a whole. With the program at each stage modelled after the French, with external examinations controlling the process of education in every stage, and with a central

body—the division of public instruction of the High Commissioner's Offices—deeply concerned over the educational policy in each of the five governments uniformity in standards and output prevails. A description of public education in one state, therefore, applies to the systems in each of the other states. The essential differences are in the relative importance of Arabic and French in the program and in the relative degree of development of the system in actual practice.

Primary Education. In France primary education is oriented to different ends from those which secondary education seeks to attain. In the Mandate, however, children who enter the primary course often aspire to join the secondary school and ultimately attend the university. In the minds of many people the primary school is a preparation to the secondary school; it is free but not compulsory.

There are a few pre-primary schools (kindergartens) for children between two and six years of age. Sometimes this education is in separate schools but more often in special classes attached to the primary schools. The program consists mostly of games, singing, manual exercises, and stories with moral import. According to the official program pre-primary education aims to give to children who are below school age the care necessary for their physical, intellectual, and moral development. Due to the dearth of teachers especially trained for the care of children, pre-primary education is not yet very effective. It resolves itself to a miniature elementary school, and there is a tendency to emphasize bookish education.

The primary schools in a six-year course train children from six to fourteen years old. Most of the schools include only the elementary education; the more advanced stage, however, is found in the larger primary schools located usually in cities.

The program of primary education is uniform all over the country. In the Lebanese Republic and in the Government of Latakia there is more emphasis on French than in the other three territories. The program of primary studies covers the following subjects: Arabic, French, Arithmetic, History, Geography, Drawing, Physical Education, General Science, Object Lessons, Morals, Hygiene, Religious Instruction and Sewing. Some of these subjects are taught in French, some in Arabic.

At the age of twelve, or on the completion of the middle course, there is held in each of the states an official public examination

which sanctions primary education. This examination marks the end of study for the majority of children attending the elementary school. It is composed of a written and an oral examination. The children are examined by a jury consisting of the head of public instruction in each state or his representative, the French counsellor, government inspectors of primary education, and teachers chosen from both private and public schools.

It is possible for a limited number of children who have completed the middle course of the primary school and who have passed the examination for the elementary primary certificate to continue their primary education one step further. Many of them, of course, enter the secondary school, but those who do not choose or cannot afford secondary education may enter the superior course of the primary school or may join a complementary course for two years. The aim of this stage of the primary course is to prepare the children for certain jobs such as foremen or skilled artisans, and to give them a more rounded education than is possible to receive in the earlier stages.

To sanction the studies of this stage the Government has organized another public examination: the examination for the elementary brevet of primary studies. To be admitted to this examination the candidate should have completed his fourteenth year.

In its organization and administration this examination is very similar to the examination for the elementary primary certificate, but it is held only in a few centers. The examination consists of two parts, written and oral; there is a government jury to conduct the examination and its membership is usually the same as the membership of the jury conducting the lower examination.

The subjects of this examination are the same as those required for the certificate of primary elementary studies only higher in standard.

Public Secondary Education. In the organization and development of public secondary education, the Mandatory Government is confronted with a number of serious difficulties. Foremost among them is the financial difficulty. The funds at its disposal are meager. Public secondary schools, therefore, charge fees and scholarships are limited. Secondary education is highly selective socially.

The existence of a considerable number of private secondary schools both native and foreign has retarded the development of

public secondary education. This is especially true of the Lebanese Republic where the Government has deemed it unnecessary to open secondary schools at its own expense. The official secondary schools are called *lycées*. Their curriculum, organization, and methods are very similar to the French *lycées* and colleges.

The program covers a period of seven years and is devoted to the study of Language, (French, Arabic, and another modern language), Mathematics, Science, History, Geography, Psychology, Philosophy, Religion, and Ethics. The aim of secondary education is to cultivate in the individual appreciation of culture, and to equip him with those methods which render him capable of effective thought and mature judgment. There is a special emphasis upon the appreciation of French literature, language, and civilization, and the rôle of France in the Orient.

The public secondary schools, however, had inherited from the Turkish régime certain characteristics and methods which the French Administration tried to reform. In the first place the curriculum was overloaded with superfluous material which was poorly taught and not comprehended by the pupils. Memory work and cramming were the main method of learning, and the school examinations at the end of the course encouraged this by stressing the ability to reproduce verbally the contents of courses covered without testing comprehension and assimilation.

In trying to reform the situation the authorities appointed French masters to take charge of the French classes in the schools. These teachers, besides trying to improve the quality of the teaching of French, were to serve as models for the masters of other subjects and help them in raising the level of their instruction.

The second reform which was attempted was the reorganization of the curriculum. This was done by a process of elimination and simplification.

The third step was the introduction of the official public examination sanctioning secondary education—the Syrian and Lebanese Baccalaureates. These measures had a vitalizing effect on the whole process of secondary education, and the output of secondary education has been perceptibly raised. The examination for the baccalaureate is divided into two parts. The students who have normally completed the courses of the first class (sixth year of the secondary

course) are admitted to the first part of this examination, and its completion is essential for admission to the examination of the second part. Both parts consist of written and oral examinations, and in each case the written examinations must be passed before the oral may be taken. One year should lapse between the two parts. The language in which the examinations may be taken is either Arabic or French. The examining jury consists of the Minister of Public Instruction, the French Counsellor, professors from the government or private universities, and teachers from official and private, recognized secondary schools.

The baccalaureate of secondary studies admits students to the university and professional schools. Recently the Lebanese Government promulgated a law which in effect debars any candidate from undertaking the study of law, medicine, pharmacy, and engineering without having previously obtained the Government baccalaureate diploma. The subjects of the examination are Arabic (History and Literature), French (History and Literature), a third modern language, Philosophy, Psychology, Ethics, Mathematics, Cosmography, History, Geography, Chemistry, Biology, Physics and Hygiene.

Higher Education. The only governmental institution of higher education is the Syrian University in Damascus situated in the old Mosque of Sultan Salim. The University comprises three faculties: Faculty of Medicine, including schools of Pharmacy, Dentistry, and Midwifery, Faculty of Law, and Faculty of Letters. The medical course extends over a period of five years; the dental course over four; the pharmacy course over four, and the midwifery course over three. The law course extends over three years, with one additional year of training required of candidates aspiring for governmental jobs. Likewise the course in the Faculty of Letters consists of three years. The total enrollment for 1933 averaged about 500 students. The University charges tuition fees to the extent of sixty dollars per year. Needy students are helped by a reduction of one-half the tuition fee.

The program of studies is based mainly on the French program. The medium of instruction is Arabic. There are a number of French professors, however, who have the right to conduct their lectures in their own language. Owing to the great lack of scientific material in Arabic, the teachers and students of the Syrian University are

struggling against severe odds in order to maintain reasonable standards. Considering this difficulty the quality of work in this institution does not come up to the standards set by the other two private universities.

Teacher Training. In the Lebanese Republic teacher training has been undergoing considerable reorganization in recent years. After experimenting with many plans, the Government has finally approved of a system whereby two normal courses, one for boys and one for girls, each extending over two years, were attached to the two higher primary schools in Beirut. Admission to the normal course is made after a severe competitive examination of those students who hold the elementary brevet of primary studies. Each of these normal sections comprises two years of training. The first year consists of a general education: Applied Psychology, Civics, Literature (Arabic and French), History, Geography, Mathematics and Science. The second year is devoted to theoretical and practical work in education together with Drawing, Handwork, and Music.

Until 1931 the teachers of the official elementary schools of Latakia and Jabal Druze were prepared in Lebanon or Syria. In 1931 the Government of Latakia opened a normal section in the higher primary school of Latakia. In Jabal Druze the Government has attached a normal course to the public elementary school of Soueida.

In the district of Alexandretta, the Lycée of Antioch has two normal sections attached to it—one in Turkish and one in Arabic. Besides these there are evening courses for teachers in service. In the Republic of Syria, there are four normal sections attached to the Lycées of Damascus and Aleppo. Two of these are for boys and two for girls. At the end of three years of secondary training a rigorous competitive examination is held to select the candidates for admission. The course covers three years and consists of general academic courses together with theoretical and practical educational courses.

There is no special governmental course established as yet for the training of teachers for the public government secondary schools. Such teachers are trained either in France or in the Syrian University, by means of government scholarships. Students who are thus trained are required to receive their Master's degree "Licence."

Vocational Education. Vocational education is but slightly developed in the country. The chief reasons are the financial limita-

tions and an unfavorable attitude toward manual work on the part of the people. Well-equipped vocational schools with a good staff cost considerably more than the ordinary type of school, and naturally the Government, in trying to make full use of its limited resources, is more likely to undertake a less expensive type of education. Furthermore, the people of the country seem to have acquired a disdain for manual work, and they look upon the school as a means to "lift" them from the toil of the farm or workshop.

Notwithstanding all this there have been attempts to introduce vocational education on the part of the government. There are two orphanages supported by the government in Damascus, one for boys and one for girls, which, besides giving the orphans the rudiments of elementary education, make an attempt at acquainting them with such crafts as carpentry, mechanical work, blacksmithing, shoe making, and tailoring. The girls are taught needlework, dressmaking, and tapistry.

In Aleppo there is a trade school which receives students of fifteen and gives them the elements of blacksmithing, woodwork, and machine-shop work. The school is rather small and poorly kept. Its three-year course consists both of theoretical and practical work. In 1933 the enrollment was forty-three boys. It had five teachers on its staff.

By far the best in the territory is the trade school in Beirut. It is well located and has an admirable plant and equipment with a teaching staff of six professors (engineers) and twelve assistants. The course extends over a period of four years. The first two deal with general instruction, mathematics, science, and general shop work. During the last two years the student specializes in foundry, forge, machinist, or electrical work. The graduates are in demand and are assisted in finding employment by the employment committee of the school which consists of prominent Beirut business men.

Agricultural schools have not flourished or even met with favorable response from the people. The government was obliged to close the best one because the majority of its graduates did not go into agriculture but tried to find employment in government service. Another government school of agriculture was sold to the Benedictine Ollivetan Brothers, but it still receives a subsidy from the government. Its program is simple, under the direction of a French specialist. It aims to foster agricultural experiments, to prepare intelligent

farmers, and to encourage the introduction of modern agricultural methods and tools.

Financing Public Education. The individual states bear the expenses of education in their territory. Each community in which an elementary school is established is made to bear the cost of the school plant unless exempted by special order from the government on account of the poverty of the district. The central government of the state pays the salaries of the teachers. There is no special school tax, the appropriation to education being a division of the central budget.

The country is poor and heavily taxed. At the same time, administrative government machinery is complicated and expensive. Hence the allotment for education is rather meager. In 1933, the Republic of Syria spent 13.6% of its budget on education, while the Lebanese Republic spent 5.2%. The Syrian Government spends annually an average of 73 Syrian Piasters (93c) on every school child while the Government of Lebanon spends 28.5 Syrian Piasters on each (37.5c). The difference between the two goes back mainly to the fact that private education is much more widely disseminated in Lebanon than in Syria. Hence, the government does not feel such an urgent need to open up and maintain public schools.

Private Education. For many generations this territory was governed by the Turks who followed a policy of "divide and rule." This they did by playing up the religious differences of the people. Western government interfered under the pretext of protecting the Christian minorities and accentuated the hostility and division among the various religious sects. In order to maintain its identity each sect, therefore, established its schools in connection with its Church, Mosque, or Synagogue. Western missionaries in their efforts to propagate Christianity opened up schools also. These two factors, inter-religious conflict leading to the founding of sectarian schools and the efforts of foreign missionaries combined with an indifference to education on the part of the Turkish Government were responsible for the extensiveness of private education in these territories. It is estimated that 70% of all schools are non-governmental and their enrollment includes 65% of the children attending school.

One of the most important facts to be noted about private schools is their great diversity, diversity in aim, method, type of organization, and standards.

Of the foreign private schools, those organized under the French auspices are by far in the majority with approximately two-thirds the number of public schools. In their methods and organization these schools are exact copies of schools found in France.

The American schools rank next in number and importance to the private schools operating on the French program. Although founded, in the main, as a part of American missionary endeavor, American schools are giving secular education to pupils of many sects. Most of them operate on the American program, the course extending over twelve years. According to recent statistics there were 64 American schools in the country including the American University of Beirut and the American Junior College for Women. Ten of these schools are secondary, 47 elementary. Their total enrollment in 1933 was 2,576 students including Christians and non-Christians in equal proportions.

As there is an increasing demand for Government certificates and diplomas and for a greater knowledge of French on the part of the public, American schools in this country are at present faced with a momentous decision: will they abandon their American program and adopt the Lebanese or Syrian which in turn is patterned after the French, or will they permit their clientele to diminish and their influence to dwindle. Some of the American teachers seem to feel that by abandoning the American program their schools forsake their *raison d'être* in this part of the world.

The writer differs radically with this point of view. The salvation of American education in the Near East lies in coöperating with the Government, by adapting itself to governmental requirements. The ideals which American education is seeking to instill in the youth of the land such as respect for their own culture, self-reliance, independence of judgment, combined with good character, can be effectively instilled through either the American or the Government system. The land is in great need of a unified system of education and the American schools should help in its adoption. They can do so without sacrificing their peculiar contributions.

The American University of Beirut has already taken the lead in this regard by inaugurating a preparatory school modelled after a French *lycée* and preparing students for the Lebanese and French Government Baccalaureate examinations. It has also modified the program of its high school to meet the needs of students coming from

territories under British mandate. A final step taken by the University in coöperating with the Government is the recognition which it gives to the official government certificates by admitting to its classes holders of these certificates.

Private education whether native or public is not interfered with or directly supervised by the French authorities. Foreign private schools enjoy a privileged status, and no restriction is placed on their activity aside from the requirement that their teachers should be of good moral status and that teaching and activities which interfere with public order be avoided. The native private schools are responsible to the education department of the state in which each is found. Foreign educational institutions are responsible to the Bureau of Public Instruction of the High Commissioner's Office.

While private education includes schools of all levels of instruction its efforts are more extensive in the fields of secondary and higher education. The private schools are financed in a variety of ways. Practically all charge tuition fees. In some instances these tuition fees are sufficient to cover the expenses of operating the school plus a small sum which goes as a net profit to the director or owners of the school. In most cases, however, the school receives a subsidy from the supporting organization. Foreign schools receive subsidies from their home organization. The native private schools are supported by their respective communities in addition to charging fees. The Moslem schools usually receive support from an endowment known as *wakf*, a form of endowment for religious purposes.

Private vocational education is not popular or extensively carried out. There are a few vocational courses in certain primary and secondary schools such as carpentry, shopwork, sewing, bookkeeping, typewriting, stenography, elements of agriculture. There are two institutions for agriculture. The Institute of Rural Life under the auspices of the Near East Foundation is an American institution which aims to give the farmers some knowledge of scientific agriculture and to give the sons of farmers knowledge of principles of agriculture. Its activities are similar to those of experimental stations in America. The enrollment in the school has scarcely exceeded 25 pupils at any time. The French University of Saint Joseph owns a large farm in the plains of Lebanon in which the inmates of an orphanage under Jesuit auspices are trained in practical agriculture. The training is under the direction of skilled workmen.

Vocational education is on the whole carried through the apprentice system, and in a number of crafts the skill is preserved in the family as a family secret or tradition.

There are two private institutions of higher learning in this country of about 3,000,000 inhabitants: The University of St. Joseph and the American University of Beirut, and students from all over the Near East are enrolled in them.

The University of Saint Joseph, under the direction and control of the Lyons Province of the Society of Jesus, comprises a Faculty of Medicine, an Engineering School, a Faculty of Law, and an Oriental Seminary. Besides these four divisions of the University which are concerned with higher education proper, the University of Saint Joseph has a secondary school with a lower section of the Oriental Seminary.

The Faculty of Medicine includes a medical course and schools of pharmacy, dentistry, and midwifery. Its program is patterned on the official French Government program. The degree granted at the end of the medical course proper is a French State degree permitting the holder to practise the medical profession in France.

The Faculty of Law also follows the official program of the French Government and awards the French State diploma. The School of Engineering and the Seminary offer, on the termination of the courses, the degree of a University. The enrollment of the University in the Faculties and higher schools varies between 600 and 650. In the secondary school and lower section of the Oriental Seminary the enrollment is around 800 students. The students come mainly from territories under French mandate. A considerable number, however, come from outside countries. The graduate of the University usually finds employment in these territories, very few emigrate.

The plant, equipment, and teaching personnel of the University are of a high order and in its standards compare favorably with those of institutions of its size in Europe and America.

The other private institution for higher learning, the American University of Beirut, was chartered under the laws of the Board of Regents of the State of New York in 1864. The University consists of a Faculty of Medicine under which are organized a School of Medicine, Pharmacy, Dentistry, Nursing, and a Graduate course in Midwifery, 2) a Faculty of Arts and Sciences under which are or-

ganized courses in Commerce, Engineering, Education, and Liberal Arts, 3) a School of Music. Besides these divisions the University maintains a Preparatory School organized according to the American elementary and high school program and a French *Lycée* organized on the Government program and preparing for the Government examinations.

The American University has a cosmopolitan student group and, thus, has a great opportunity for establishing understanding and real coöperation among the many countries of the Near East and the West. The enrollment for last year was about thirteen hundred.

The diplomas of the University are recognized by the countries of the Near East and America. Since its students are drawn from a wide territory, its influence is quite extensive. The aim of the Institution is to train leaders with technical skill to help them build up the life of their countries, to blend scientific progress of the West with the culture of the East, to exemplify Christian idealism so as to kindle the spiritual life of the students.

The graduates of the University are found all over the countries of the Near East. They hold positions of leadership and responsibility. The standards of the University and its influences are a credit to American ideals of education for it has really contributed to the Renaissance which is at present going on in the Near East.

Women's Education. The education of women although impeded by tradition and conservatism on the part of the people has been slowly moving forward during the past years.

This fact is proved by the great increase in the number of women's educational institutions on all levels, by the relatively greater number of women in attendance, by the toleration of coeducation especially on the higher levels, and by the admission of women into the ranks of such professions as Law, Pharmacy, Medicine, Dentistry.

Socially the woman of this territory, especially in the cities and larger centers, is moving rapidly towards full emancipation and sharing with men the responsibilities of public life. That there is yet a great deal of inertia to overcome need not be emphasized, but the movement has been gaining momentum every year, not among Christians only, but also among other sects, notably Moslems.

There are a number of primary, secondary, and even higher schools for women. The British Syrian Training College prepares

women teachers for posts both in the elementary and secondary schools. It has a normal course which may be considered equivalent to the completion of sophomore standing of a regular American Teachers College. The American Junior College for Women is a standard junior college and its program is approved by the American University of Beirut, for admission to junior year of the School of Arts and Sciences and to some of the professional schools.

The chief limitations of women's education at present are the lack of adaptation to the special needs of women and inadequacy. The courses offered and their contents are oriented in most of the schools to give a cultural education such as the ordinary young man would need. Considering the fact that the vast majority of women are still chiefly occupied with family concerns this education does not seem to be particularly well suited to their needs.

Some thoughts on the educational situation. In closing a few lines evaluating the contributions of education to the people and the educational policy should be written. The writer recognizes the difficulty of the task owing to the fact that the attitude of any individual evaluating a program of education is very much colored by his own educational philosophy which in turn is the product of his early schooling.

There are certain drawbacks and limitations in the educational situation which in the opinion of the writer decrease its effectiveness and which it seems necessary to improve.

The great diversity of private schools, the lack of central control and supervision over their activities is a shortcoming that should be reformed. Diversity in education is commendable under certain conditions. When the school is sincere in its efforts to serve the community, when it has a teaching staff which is well trained and endowed with a sense of professional responsibility, then it is safe to give this school freedom in working out its program. Unfortunately only few of the private schools in this land come up to this standard. Instead of serving the public they are mindful of the interests of one sect only or are conducted for private gain. They breed sectarianism in the country and actually hinder inter-religious understanding and coöperation. They compete with one another and oftentimes resort to underhanded methods in trying to undermine schools of different sects. Many of them are exceedingly poorly equipped. It is not to be gathered that all private schools are of this

order. A few of the private schools are of a very high standard and may well be taken as models to grade the schools of the Government.

There is an excessive emphasis on foreign language in both the program of the elementary and secondary schools. In Latakia and Lebanon half of the elementary school program is taught in French and half in Arabic. Through this excessive emphasis on foreign language, the pupils are rather retarded and elementary education rendered superficial and limited. Pupils are required to solve problems in arithmetic in French, to grasp some of the principles of science in French; subjects which are rather difficult in themselves without the added task of comprehending them in a foreign language. The ability to speak and read a foreign tongue is taken as the main criterion for judging the success of elementary education. This emphasis on language is seen more vividly in the secondary schools. The examinations for the Baccalaureate demand almost an equal knowledge of two languages and literature—the Arabic and the French. The standards of examinations are not low. This has rendered the Syrian and Lebanese Baccalaureate diploma rather more difficult to obtain than the French Baccalaureate. Recently the situation has been slightly ameliorated but more can and should be done.

The excessive importance given to the examinations leads to a proportional diminishing of the real worth of primary and secondary education. The writer recognizes the fact that there are two sides to this question. Some argue that an external examination stimulates both pupil and teacher to put greater effort into their work, defines the aims of education more concretely and helps to establish an *esprit de corps* between teacher and pupil since both of them are working for the attainment of a common goal—the passing of the examination. While not minimizing the value of the examination the writer believes that in this country the examinations control the education to a great extent, they encourage cramming and they do not help education in the attainment of its real aim, namely enrichment of living.

Then there is little or no differentiation between the program of the rural and urban elementary schools. The children of twelve whether they come from a small village school or from a large urban one must take the same Government examinations. Education under

these conditions ceases to be an adjustment to and appreciation of the environment, but limits itself to the acquisition of certain facts.

Vocational education is sadly lacking. There is an overabundance of maladjusted persons who are anxious to fill white-collar jobs but a lack of skilled artisans and workmen. The farmer is conservative and has very little acquaintance with some of the fundamental developments in agriculture.

Finally education, especially foreign private education, is responsible for the creation of an educated class widely separated in sympathies and ideas from the masses. They cannot lead the people because they do not understand their needs. They are more foreign than native and they pride themselves in this fact. In this respect the majority of the private schools are harmful to the country because they are weaning its best minds away from it.

Notwithstanding all these drawbacks and limitations, there is no doubt but that the mandatory authorities are sincere in introducing into the country the best aspects of French education. It is also well established fact that since the French Administration assumed responsibility over the country, public education has been improving gradually and definitely. New schools have been opened, teachers of higher caliber have been engaged and better paid; school buildings are in a better physical condition, and the curricula are being gradually organized. There is a program and a policy guiding public education.

MAKING THE MOST OF MINISTERIAL MATURITY

BY HENRY CHARLES SUTER

In consideration of the increasing command issuing these crucial days from churches to "give us a young man for our minister," one feels compelled to comment critically as well as caustically upon this matter of so-called maturity in ministers. The average theological student finishes his course of study at thirty, and if he seeks an advanced degree, concludes at thirty-five his college course. This is usually the utmost limit put upon the age of ministers, at least for any prominent pulpit of today, in some cases a man "not over thirty-five," and in most cases cited, "certainly this side of fifty."

Thus it is decreed by congregations and acquiesced by even ecclesiastical authorities, that a minister is most acceptable at thirty-five, when at forty, he is somewhat discounted, while at fifty he is seemingly undesirable at many accountable churches. Thus it means that a man's ministerial career is but a matter of fifteen to twenty years at the best; hence we should be open to proposals for utilizing the remaining portion allotted to life's maturity.

It might be contended that in the other callings the same situation pertains, in that the more experienced men and women of mature age are being pushed out and younger people promoted to occupy such positions. Particularly is the thinner pay envelope being used to bring about this objective. But it must be pointed out this applies to commercial matters and not to professional callings. In the medical profession there is still a premium put upon old age and experience, in that people will not trust young practitioners in critical cases, since by demanding the old doctor, he will diagnose according to the whole history of a patient. His experience being accounted of more consideration than his academical preparation. Consider the practice of law. The longer a lawyer has been citing cases, the more dependable his defence of yours. Moreover, at the mature age of fifty-five or sixty, most of them are promoted to the honor of some higher court and, when older still, have been given places upon the supreme bench.

Not long ago, a man who was approaching the age of retirement

in the Christian ministry was called to become president of a large university in this country. As accounted in ordinary ability, he had attained the age of discount in the ministry, but apparently considered at a high premium in the affairs of education. Thus, it is evident that experience is an asset, and age an advantage in law, medicine, and education, but not in the ministry of religion, or the profession of the clergy.

Yet here is the rub; experience is the principle factor in religion, as well as the teaching of it to others, since it is not a matter of truth and theory only, but the minister must be able to speak in all such things from experience. Still with this experience comes the possibility of the discontinuing of his services, since he is not on the salubrious side of sixty.

So much, then, for the critical side of the argument; let us now revert to the constructive. It is suggested that all ministers should possess a secondary avocation, upon which to fall when at forty-five or fifty the Christian Church has no further use for his services. He is energetic in body and eager of soul to invest his abilities as ever he was, but the Church is looking for men "under forty" or thereabouts. Further, these suggestions might be considered by our seminaries and adapted to the subsidiary gifts and secondary aptitudes that most of their students are acquiring, in the light of the knowledge they have attained on the matter of maturity in the ministry. It might sustain those students who started too soon to escape the shock when this truth was first thrust at them, as well as persuade those to resume who decided it better to discontinue ministerial study, fearing to meet with this maturity.

The first consideration, then, in addition to our ministerial calling might be Insurance. Many ministers have found this occupation analogous to the ministry in that its salient sales evaluation speaks of future happiness of home; care for the aged; relief in sickness; and readiness for the rainy day, even including the deluge—all matters of importance to ministers. Many insurance companies are manned by ministers who already know it requires the alertness of an athlete, the persuasion of a parson, and the sagacity of the saint to make it successful.

The second consideration suggested is salesmanship. Particularly with some publishing house. During the minister's training he has learned that there are books that speak, books that shriek, and books

that merely slobber. What an opportunity to champion the cause of the best books, without being compelled to boost those published by the particular denominational house to which he had dedicated his life. There is a larger liberation by literature coming to that minister who can open the door to others in the matter of promoting good reading. For why should he, as a minister, be put on the shelf like a book, when most of his brethren of other professions are being put on the bench, or put on lists of specialists, or put in colleges as principals and presidents?

A third consideration in future occupation might be found in gardening. A course taken in this art should prove useful during the nine days' wonder of his brief ministry, as well as profitable to his pocket as a second vocation when the first no longer claimed him.

Finally there is writing. If every minister should be given a course in journalism while in college, there would not be so many ministerial confessions concerning their inability to write in these days. Certainly it is a trite saying that writers are born, not made: but it is true that some practical training in this connection would create better English in the expressions of a man who has given the cream of his life to the Church. By teaching our theological students to write, they will assume a literary style and acquire an accuracy of expression, which when closed from the pulpit by the decrees of ecclesiastical powers, may yet continue to prove more powerful in written word and more mighty in moving greater multitudes.

Let us recall that even Jesus had a secondary calling beside that of being the Savior of the world, for was he not a carpenter, and it may be during those silent years of Our Savior, when perhaps He felt He had lost the support of His people, He went back to the carpenter's bench. Remember Paul was a tentmaker and was mighty proud of the fact that he was dependent upon no particular party for a living. Even the disciples when they felt the claim that they be fishers of men cease, fell back upon their other occupation of fishing for food in the sea, and doubtless were persuaded there was a more substantial supply to be obtained to keep body and soul together even in old age, than ever they hoped to possess while fishing on land. This, then, is the manner in which the minister may master the dead line of ecclesiastical majority: by additional avocations make the most of ministerial maturity.

THE KERASHER PAPYRUS

BY EDWARD ULBACK

AMONGST the treasures of the British Museum is a hieratic manuscript, found in Thebes, written by, or for, an ancient Egyptian nobleman of the name of Kerasher. It is a religious work of the Ptolemaic or Roman period, in good legible condition, and is very valuable as showing the state of opinion on the question of the immortality of the soul, and the resurrection of the body, as prevalent in Egypt a short time previous to the advent of our Lord. It is thus of great service in our study of the history of religious thought.

The illustrations given are of funeral rites, and these, it is plainly indicated, were very similar to those which had been practised in Egypt for one or two thousand years previously. And the text shows that the ideas of the future state had not greatly changed amongst the Egyptians since the times of the patriarchs. There was still that firm faith in the blessed immortality of the purified which is found in the very earliest records of the human race.

In this short treatise mention is made of the *Ka*, which was the substantia of which body, *Kat*, and soul, *Ba*, and glorified body, *Sah*, and glorified soul, *Khu*, were developments. Every existing thing had a *Ka*. Then there was the mortal body, which, ere there can be blessedness after death, must be purified within and without. Thus, Kerasher is addressed: "Not a member of thee is imperfect," "It enters the underworld perfectly cleansed." This probably refers to the work of the embalmer. The glorified body was not the transmutation of the mummy, as some have imagined. That was but the seed, which should germinate, and from which the body of the future was to grow. "Ptah," the great former, will be at hand "to mould thy members. Amen is near thee to renew life. A fair path is opened before thee. Thou wilt see with thine eyes, hear with thine ears, and speak with thy mouth. The soul will be renewed godlike, in the underworld will be made thy transformations according to thy wish. Thy members will be on thy bones like what thou hadst on earth. Thou wilt drink with thy throat, eat with thy mouth, and receive nourishment with divine souls." All is to be

similar to the old body, but formed afresh, and that in accord with the desires of the soul. This is the Pauline idea. "Thou sowest not that body which shall be. To every seed its own body."

Man has a spiritual as well as a corporeal nature. This was not overlooked in the subtle psychology of the ancient Egyptians. The soul lives on. Kerasher is addressed: "Enter thou into the horizon with Ra. Thy soul will be received into the Neshem bark of Osiris. They will make thy soul godlike in the abode of Sebat. They will make thee to triumph for ever and ever." "Thy soul liveth in heaven every day." "Thy soul shall live, thy body shall grow, by the command of Ra himself. There shall not be decay or injury to thee. Thou wilt be like Ra for ever and ever."

Whatever else is needed, the importance of purification is strongly enforced. Apparently this comes on a principle of grace. The manuscript, giving no reasons, opens: "Thou art pure. Thy heart is pure. Thou art pure behind, pure before, pure within. Thou art washed with water and incense. Not a part of thee hath a blemish. Kerasher is purified in the pool of the field of peace, north of the field of adoration [or perhaps grasshoppers]. Enter into the hall of truth. Thou art cleansed from sin and all ill. Thy name is 'Stone of Truth.' Hail, Kerasher! Enter Hades as one greatly cleansed." There may be a suggestion here of the purifying work of the embalmer on the body; but certainly the promises have a much wider scope.

The negative confession, as it is called, in which in former days the deceased invoked forty-two gods and declared to each his freedom from sin, is here reduced to six assertions. Kerasher calls certain mysterious gods to witness that he had not (1) done violence, (2) nor made boasting, (3) nor carried away the property of the dead, (4) nor done injury, (5) nor been wrong at heart, (6) nor made rebellion. Then follows the grand old profession of the Egyptian, which we have in the Book of Job. "He hath given bread to the hungry, water to the thirsty, clothing to the naked. There is no accusation against him before the gods." "Let him be favored amongst those who are favored." "Grant that his soul may travel to every place where he would be, living in the land forever (twice over) and for eternity (twice over)."

There is a hieroglyphic inscription on the vignette which is of similar import. One passage calls for notice—"Thou art favored

before the gods," and again, "He places thee at the head of the favored ones." These are very like expressions of faith in salvation by Divine grace.

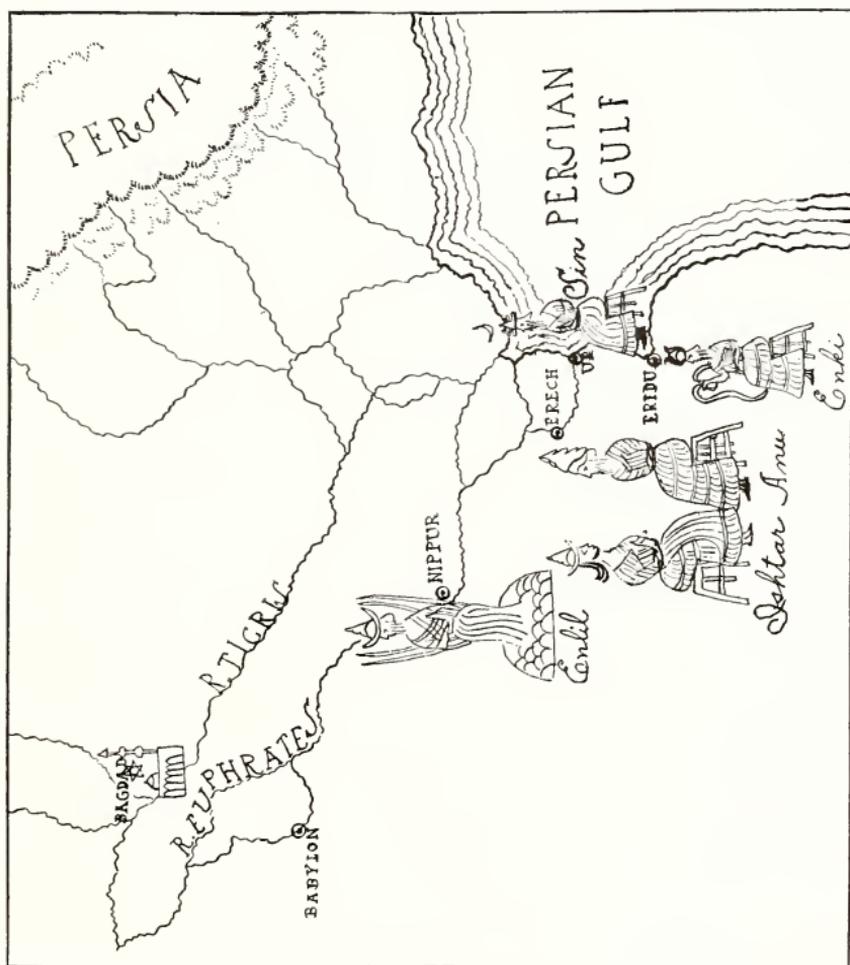
Thus much is clear, that in Egypt, in the pre-Christian era, there was a firm belief in the immortality of the soul and the resurrection of the body, but only those who are purified are thus blessed. And that purification is wrought by the favor of divine beings. These views prevailed, with but little change, for hundreds and even thousands of years. This, be it noted, gives but scanty help to the doctrine of evolution in religion. It suggests that, side by side with all the grotesque and evil mythology of ancient times there were ideas of God and the human soul, probably traditions from an earlier revelation, which found an abiding place in men's hearts and creeds. They are truths which never had been and never can be eradicated from human consciousness. The universal effort has not been so much to establish as to destroy this faith. In spite of all questioning and fears, it has blazed forth in every generation. Wherever civilization has left its records, prominent amongst them has been found the evidence of the recognition of this truth. Earth's oldest monuments are temples and tombs, both of which utter strongly expectation of a life to come. Earth's oldest literature is called "The Book of the Dead." This title was given before its contents were known. The true title should have been that found in its pages, "The Book of Going Out by Day," or the book of resurrection into life on the morning after the night of death. It is assuredly a momentous fact, not sufficiently considered by students of the evolution hypothesis in relation to religion, that the very earliest records of the human race show a belief, not only in the future resurrection of both body and soul, but also in the need of purification to make the future state happy and blessed.

GILGAMESH AND THE WILLOW TREE

BY S. N. KRAMER

THIS remarkable Sumerian poem, so simple and straightforward in articulating its epic contents, has been reconstructed from the texts of five more or less duplicating tablets inscribed in Sumerian cuneiform writing and dated approximately 2000 B.C. All of the tablets come from the southern part of ancient Babylonia (modern Iraq). Four were excavated by an expedition of the University of Pennsylvania, at the end of the nineteenth century, in a mound which covers the ruins of the ancient city of Nippur. These four tablets, however, were so poorly preserved, that their contents remained quite unintelligible. The fifth tablet was discovered at the ancient city of Ur, by a combined expedition of the British Museum and the University of Pennsylvania, which has been conducting excavations at that site for the past decade. The recent publication of the text of this Ur tablet by Mr. C. J. Gadd, of the British Museum, has enabled me to piece together the four fragmentary Nippur texts and to restore their contents. The present translation is the result of this restoration.

Sumerian is a non-Semitic language spoken by a people who had invaded Babylonia at some unknown date prior to 3000 B.C. In addition to inventing and developing the cuneiform system of writing, which for many centuries was practically the universal script of the Near East, the Sumerians influenced most profoundly the culture-pattern of the Semitic invaders who later conquered and absorbed them. Although Sumerian became extinct as a spoken language as early as the second half of the third millenium B.C., it continued to be used by the Babylonians in their literary and religious compositions to the very last centuries of the pre-Christian era. It is true, for example, that numerous Babylonian epics have come down to us in several dialects of the Semitic language usually designated as Assyrian. Nevertheless, in translating these epics for the Assyrian dictionary which is being compiled in the Oriental Institute of the University of Chicago, I have found it necessary to utilize continually the Sumerian originals to which almost all of them can be



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traced. Unfortunately, the Sumerian texts, in addition to the linguistic difficulties which they present, are inscribed on tablets that are only too frequently so fragmentary, that the connected sense usually remains obscure. This poem which I have entitled "Gilgamesh and the Willow," is one of the rare and precious exceptions. Even in this case, however, the texts on which the reconstruction is based, are damaged at several points, and the future discovery of additional material may modify the interpretation to some extent.

In translating this poem, I have tried to "hew" as close to the original Sumerian as possible, so that the reader may absorb its essence not only from the contents but also from its formal structure. However, in order that the reader may obtain a clearer idea of the contents of this poem, I append the following brief glossary:

Anu—"The Heaven," "The God of Heaven." He is the leading deity of the Sumerian pantheon and his main seat of worship was situated in Erech.

Enlil—"The Lord of the Air." In our poem, however, he is treated as "The Lord of the Earth"; the myths of the wars among the gods which might clarify this transformation, are still unknown. Enlil's most important temple was situated in Nippur.

Enki—"The Lord of the Earth." In the extant Sumerian literature, however, he is usually described as "The Lord of the Apsu (the English 'abyss')." As in the case of Enlil, the myths depicting the transformation are as yet unknown. Enki who is the third of the trinity (Anu-Enlil-Enki) heading the Sumerian pantheon, had his main seat of worship in Eridu.

Ereshkigal—"The Lady of the Great Abode." As our poem indicates, she was the queen of the nether world, described in Sumerian literature as "the land of no return."

Ninanna—"The Lady of Heaven"; the counterpart of the Semitic Ishtar and the Greek Venus. As the wife of Anu, her main seat of worship was also situated in Erech.

Gilgamesh—The prototype of the Greek Hercules. In later Babylonian literature he is described as two-thirds god and one-third man. His deeds and exploits were celebrated in many Sumerian tales and legends. The present poem which tells of his killing "the snake, who knows no charm," is the earliest known version of the "Slaying of the Dragon" myth.

Zu-bird—A creature conceived to be part bird and part man. His irreverent deeds epitomized the spirit of obstinacy and rebellion.

Lillith—A destructive demoness personifying barrenness and everlasting restlessness. While the word “Lillith” came into English as a loan word from the Semitic languages, it is actually of Sumerian origin and its literal meaning is “Maid of the Wind.”

GILGAMESH AND THE WILLOW TREE

After heaven had moved away from earth

After earth had separated from heaven

 And the name of man had been ordained

After Anu had carried off the heaven

After Enlil had carried off the earth

 And Ereshkigal to the nether world had been presented

After he had set sail

 after he had set sail

 For the nether world

 the father had set sail

 For the nether world

 Enki had set sail

Because of the lord

 the light winds stormed

Because of Enki

 the heavy winds stormed

 The keel of Enki's boat

 the raging waters covered with foam

Because of the lord

 the water at the boat's prow

 like a jackal attacks

Because of Enki

 the water at the boat's stern

 like a lion strikes down.

On that day

a tree

a willow tree

On the bank of the Euphrates planted

By the waters of the Euphrates nourished



"HE SMOTE THE SNAKE WHO KNOWS NO CHARM"

Suggested by scenes depicted on seal cylinders from ancient Sumer.

Drawn by Milly Tokarsky.

Fiercely the Southwind

tore at its roots

plucked at its branches

The Euphrates

on its waters carried it away.

A goddess

at the word of Anu trembling

at the word of Enlil trembling

Seized the tree in her hand

entered Erech:

“To pure Ninanna’s holy garden I bring thee.”

The goddess tended the tree with her hand

at her foot she let it stand

Ninanna tended the tree with her hand

at her foot she let it stand:

“When oh when
on a holy throne
shall I sit me down”
she said

“When oh when
on a holy couch
shall I lay me down”
she said.

Five years

ten years had passed

The tree grew big

she dared not cut it down

At its roots the snake who knows no charm built his nest

In its branches the Zu-bird set up his young

In its midst Lillith built her house

The maiden

ever-singing

all hearts rejoicing

Ninanna

the pure lady of heaven

how she weeps and weeps!

At the break of day

as the horizon grew light

The hero Gilgamesh stood by his sister’s side

His armor

fifty talents its weight

like thirty shekels he fastened at his waist

His bronze axe

his axe of the road

his axe of seven talents he seized in his hand

At its roots he smote the snake who knows no charm

In its branches the Zu-bird gathered his young

to the mountain he rose in flight

In its midst Lillith tore down her house

to the desert wastes she fled.

The tree

Gilgamesh tore at its roots

plucked at its branches

The sons of his city who had accompanied him

cut down its branches

To pure Ninanna

for her throne he gives them

for her couch he gives them.

ELISHA AND THE TWO SHE-BEARS

BY H. S. DARLINGTON

THERE is an odd passage in the Old Testament¹ wherein it is said that two she-bears came to the aid of Elisha when he was taunted by little children for being bald. Because of their unkind remarks Elisha, in the name of the Lord, cursed the impolite little children, whereupon two she-bears came out of the woods, and tore the bodies of forty-two of them. The good prophet was then able to proceed on his way from Bethel to Mount Carmel without further molestation.

On the face of it the story is purely mythical, and Elisha is represented as a heartless monster who by his sorcery called up two savage bears to slaughter the children of a village along his road. In this account we have the cryptic fiction of some secret order of priesthood who were wont to tell the laity of their doings in terms of myth and wonder. In order to seek a point of penetration so as to lift the veil off the body of the tale, it might be feasible, first of all, to give some consideration to the folkloristic significance of hair and the lack of hair.

Now, Elisha was the understudy of Elijah who is said to have been a "hairy man" and to have worn a garment of hair, or possibly the pelt of some shaggy haired animal such as that of the bear or the lion. Elijah probably belonged to some order of shamans who vowed never to cut the hair off their heads and faces, lest the power they received from the spirit they served should forsake them. One such order of priests was known as the Nazarites; and Samson of the famous locks was a member of this society. His "power" or strength was contingent upon his retention of his long locks, for when they were cut he was weak. In other words, there is supposed to be some manner of power in hair itself. However, that notion is a folkloristic one, for the rational minds of men inform them through practical experience of the fact that hair in itself has no more power or strength than in a thread of similar diameter.

¹ II Kings ii: 23-24.

The foregoing consideration should reveal to us that the mythical kind of "hair" in which there is great power, is not truly hair at all; but in some particular use or appearance it may bear a likeness to hair. A streak of lightning descending to the earth has much the suggestion about it of a red hair, or of a hair on fire; and in such a "hair" there is indeed great power or strength. Consider, for example, the Maidu belief: When a tree had been struck by lightning they believed that a hair was to be found there, but that nobody but a doctor could discover it. The doctor, or medicine man, kept the hair and later, when need arose, burned it to cause rain. Only a doctor could safely approach a tree that had been struck by lightning.² If we but give a moment's consideration to this Maidu bit of folklore, we observe that the doctors made the people believe that they had uncanny sight to find the lightning hair of fire that had entered a tree and had become invisible to ordinary eyes. When such a wonderful hair is again set on fire it is transformed once more into lightning which serves then to cause a rainfall. The doctor tells his patients that the power of the lightning cannot harm him for he has been adopted or initiated as a "son" of the god Thunder. In such a case the shaman is a "little Thunder" and can function in rain-making just as the deity in the cloud customarily does. But, in that case the human being who has been initiated into some order, or into some school of medicine men, should have about his person some evidence of hairiness, for hair is potential lightning, hence strength of a mystical kind. The man who has been adopted by Thunder and is, therefore, immune to lightning, with which the lodge of Thunder is filled, should not only be long haired and long bearded, but also should ordinarily wear a garment of hair. A shaggy bear-skin ought to lend its potential lightning-strength to the wearer if he has been initiated into the secrets of Thunder, the shamanistic "father" of the wonderful but hidden lodge in the dark stormy cloud. In the end or at death the more advanced of the priests who worship the Thunderer shoot upwards from this earth and enter a storm-cloud where, seemingly, they become one with their deity. Such was the fate of Elijah, but Elisha was buried as a thunderstone in the earth.

In America, the Pawnee tell a myth about a wonderful boy who

² P. L. Faye, "Notes on the Southern Maidu," Univ. Calif. Anthro. Series, Vol. XX, 1923, p. 53.

climbed a tree at which he saw the lightning striking. In the crotch or in a hollow of the tree he found certain strange beings. He pulled out a human being painted red, wearing a buffalo robe and having a black lariat tied round his waist. This being said his name was Thunder. The boy pulled out another being who was Lightning, and then another called Loud Thunder, and lastly Wonderful Lightning.³

In this instance we find that Thunder or Lightning wears a buffalo robe, that is, a shaggy covering of hair. The lariat is one braided from hair of the mane or tail of a black horse, and is, as it were, the very soul of the lightning. This hairy robe and the lariat were transformations of the lightning shafts that entered the tree.

The Tillamook⁴ tell of a fisherman who went up the river to catch salmon. He heard a bird calling him. It was the Thunderbird, who transformed into a man wearing a bearskin. Thunder was heard as often as this strange person shook the bearskin. This Thunderbird took the man away to his whale-skin lodge where he kept him for a year.

Plainly enough, this instance shows us that the Thunderer wears a bearskin robe, or he transforms into a bear. The man he initiates, into his whale-skin lodge and its secrets, is the doctor who is made a "son" of the "father" who owns the lodge. That is, the initiate is made over into the likeness of the master of the lodge, as a son is like his father. In this case the kidnapped man was made into a priest of Thunder before he was returned to his people to practise healing and divination. The rumbling sound in a storm-cloud is the growling of the bear. Bears and storm-clouds hover round the tops of the mountains, and both at times, literally will roll down the slopes of the mountain. The teeth and claws of the bear are considered to be the "thunderstones" with which Thunder does his destructive mischief.

The priest of Thunder is assimilated to Thunder and, therefore, should have long hair and an uncut beard, for in his hair lies his power and the strength of his magic which makes the dead come to life. The notion that lightning can restore the dead, or that a

³ G. A. Dorsey, *The Pawnee (Mythology)*, I, Carnegie Inst. 1906, p. 149.

⁴ Franz Boas, "Notes on the Tillamook," Univ. Calif. Anthro. Series. Vol. XX, 1923, p. 13.

priest as a little Thunderer can bring the dead into activity again, seems to be due to the fact that after the spring thunderstorms, wherein the gardens and fields are struck with the shaft or rod of Thunder, all nature which seems dead all winter comes again into life and beauty. One can readily see that Thunder himself would be greatly insulted if he were reproached for being bald-headed, for that would mean that he was powerless, and could strike down nobody with his shafts of fiery hair. Similarly, the priests of Thunder would feel insulted if called bald-headed, for it would be the same as saying that they were quack doctors with no ability to heal the sick, restore the dead, to cause the rain, or to perform magical deeds and clueless murders.

The Nisenan, a Californian tribe, say that Thunder is always moving from place to place, and can be seen at times crossing the sky during storms. He hears everything, hence one must be careful in speech, for it is particularly dangerous to curse him. He only kills wrong-doers, however. On a certain occasion when a drunken man lay in the round brush-house trying to sleep off his debauch, Thunder happened to rumble a little, whereupon the drunken man cursed him, shot a gun at him, and called him "bald-headed." Thunder, being incensed at this, determined to punish the man, but not to kill him. Thereupon he struck the man slightly, burning him a little, and rolled him over in the dirt. Thunder covered with smoke then arose from the brush lodge and ascended like a balloon. From his higher position he then rumbled and banged away again. The drunken man was cured of his tendency to curse Thunder and ever afterwards when storms arose he hid from Thunder.⁵

This, then is the parallel instance we are seeking, for here the insulted Thunder strikes his detractors with fiery shafts of lightning. Now, if Thunder had a priest who was wearing a bear's robe, or two such robes, it might well enough be said that a bear or two bears came forth from the darkness of the wooded distance, and attacked and tore the man who called Thunder "bald-headed."

Elisha probably had two bear skins, for no doubt he had one of his own, besides Elijah's. The moment that Elijah ascended into the cloud when grasped by the hand of Lightning or Thunder, he let his hairy mantle fall upon the shoulders of his successor, Elisha. Therefore, it seems probable that Elisha had a "double portion" of

⁵R. L. Beals, "Ethnology of the Nisenan," Univ. Calif. Anthro. Series, Vol. XXXI, pp. 381-383.

the Thunder-spirit upon him, even as he so wished to have. This double portion took the form of two bears, or two she-bears when called into manifestation before ordinary men at the moment Elisha turned about and cursed the little children who ridiculed him. Elisha showed them that he could function not only as a "Little Thunder," but as a "Double Thunder," and could strike them down with lightning shafts which he could direct with the omnipotence of his mind, for he was an adopted "son" of the Grand Master of the Thunder-lodge. The lodge is practically always considered to be a mother, hence the cloud as a "bear" is a "she-bear," for the cloud is also the lodge, or the wife of the Grand Master. The lodge-mother gives birth to her sons when fully initiated, and thus they would be cub-bears if the cloud is a bear. The father is the genius of the storm, and is commonly called Thunder because of his ability to speak in loud tones, rather than to be called Lightning because of his brilliance.

A thunder-priest usually makes claim to being able to make the rain fall when it is wanted. Elijah is represented as a rain-maker who won a contest in opposition to the priests of Baal. He brought the lightning as fire down from heaven upon the altar of sacrifice, and on Mount Carmel he brought on a veritable flood after a protracted drouth. Elisha seems not to figure so much as a rain-maker, but no doubt he could have opened the floodgates of heaven had he desired. A bald-headed man could not possibly have brought the rain, for the rain may be thought of as coming with a thunderstorm when red hairs are seen as lightning streaks between the clouds and the earth. There is, therefore, some real hard sense in the Baganda law that banishes all bald-headed persons to the special province of Kitongole where they are doomed to stay until their hair grows again.⁶ These bald-headed people evidently interfere with the needed rains and the field crops.

At the time Elisha was taunted by the little children he had just come from the Jordan where he witnessed the ascension of Elijah into the cloud. This is to be taken as a symbolic way of saying that the body of the dead or slain Elijah was sent up to the clouds in the smoke of his funeral pyre. Elisha was, therefore, in mourning for his immediate master, and accordingly, after the custom of the Jews, would "make a bald spot between his eyes." That is he would

⁶ J. F. Cunningham, *Uganda and its People*, London 1905, p. 234.

have torn out some of the hair on the fore part of his head as a sign of mourning. Probably he was not actually bald, for he would no doubt have been so superstitious that he would not have believed in his own powers if he were truly bald all over the top of his head. It would have meant to him that Thunder whom he called Yahveh, had wholly abandoned him.

The prophets of Yahveh seem to have had colleges or lodges at Carmel, at Bethel, at Jericho, and at Gilgal. Probably there was one across the Jordan at the place where Elijah died and was cremated. Formerly there had been a lodge at Bethel, but apparently at the time Elisha walked the road past that town, there was no lodge of Yahveh there, but on the other hand, a lodge of priests of Baal and Astarte. Leaving Jericho, Elisha had come to Bethel where the hostile "little children" mocked him by calling him "bald-headed." These "little children" were grown men, for they were the "sons" of the "father priest" or the prophet who had charge of the lodge and college of Baal. These men as shamans of a rival order and a rival deity knew that he was telling the laymen that a miracle had occurred and that Elijah had not really died at all. They knew the esoteric meaning of the tale, for they also used similar stories to keep their laymen mystified. These "sons" of the prophet are also to be viewed as his "little children." One finds that Paul liked to pose as the "father" of his congregation and refer to his converts as "little children."

And just as Elijah before him showed the prophets of Baal how much greater Yahveh was than Baal as a dropper-down of lightning, and sender of rain, so now Elisha resolved to show these unseemly students of the mysteries of Baal how powerful he and his Thunder-deity were. He turned about in the road and cursed the little children with the result that two she-bears rushed out of the woods and tore forty-two of them. If they were strong in their assimilation to the Thunder deity, they could not have been injured by the lightning, and the storm-bears would have caressed them instead of tearing them. Thus was Elisha vindicated; and to himself he had proved that Yahveh does not abandon his shamans when, in mourning for a rain-priest, they have made a bald spot between their eyes.

The words of the taunters were: "Go up you baldhead, go up you baldhead." By this expression they did not mean that he should continue on his way up Mount Carmel, for rather they meant that he

should try to do what Elijah had just done — ascend to heaven. These sons of the prophet, as initiates to the mysteries of Baal and Astarte, knew of the hoax in the ascent of Elijah, and were suggesting to Elisha that he, too, ought to be slain and burned on a pyre so that his smoke might go up as an offering to the nostrils of Yahveh. They knew that lightning was supposed to have taken Elijah up, and that a bald man could not reasonably lay claim to having any ability to rise into the clouds, for he lacked lightning power.

There crops up the question why the number forty-two is specifically given as the number of students in the college at Bethel, all of whom are supposed to have been struck by lightning? Could it be that the acceptable and maximum number of students or brothers in a shamanistic training school, under the tutelage of a fatherly priest, was set at forty-two? If so, perhaps the idea arose in Egypt, where Osiris as the father of men, and the slain god, is said to have been cut up into a number of fragments. Commonly he was divided into fourteen but others say sixteen, and still another account says forty-two. One of these fragments was supposed to have been preserved in each of the principal temples. These forty-two temples were located in the forty-two nomes or districts of the land. Although Osiris was dismembered it was believed that he would be resurrected when all forty-two parts came to a coalescence or integration whereby his spiritual body, rather than his material body, would be reconstituted, and a new Unity achieved. No doubt there was a priest for each of the forty-two temples and the forty-two fragments. If these men met in secret conclave at times, in a secret hall of initiation, they would figuratively at least have restored Osiris to cosmic functioning again. In Christian terms where one or two are gathered together there the Christ will be; so it seems the Egyptians believed that in the assembly of forty-two priests as parts of the total spirit of the slain deity, the godhead in perfection would be reestablished. Every soul seeking union with Osiris had to be tried before forty-two judges who assisted Osiris, and these it seems are the brothers of a fraternity who pass on the character of the candidate for initiation into the ultimate mysteries of the god and of the doctrine of unity with him. Hence from Egypt, probably came the notion of having forty-two students or brothers in a fully constituted lodge of rain-makers.

In summary: The forty-two children torn by the two she-bears, were priestly brothers in an initiation school for doctors who sought for adoption by Thunder, but who knew him as Baal instead of by his "true" name Yahveh. Elisha as a partly bald man called up a thunder-storm, and the lightning struck the false "sons of the prophet." This in itself was a wonder, for a bald man should not normally have any power at all to provoke a thunderstorm. Thus, Elisha was an exceptional priest and Yahveh an exceptional Thunderer.

SCIENCE AND REALITY

BY T. SWANN HARDING

SCIENTISTS themselves, and even those buck privates who form the rear of the scientific profession, are alternately praised or blamed for being materialists. At best it is said they deal with stark reality, they get down to basic things, and definitely make contact with the fundamental, material stuffs composing the universe about us. Many people, fretful because they feel somehow detached from reality—often they are economists or sociologists—will congratulate workers in physical and biological sciences because they truly know reality.

That attitude is so often expressed that one begins to wonder and wondering, it seems best to consult some of our greatest scientists to discover how they felt about reality. What is the opinion of such men as Einstein and Heisenberg on this matter? Then, returning to the sturdy routine workers who perform the humdrum jobs in research laboratories without which great discoveries could never occur, what is the experience of lowlier laboratory workers? What is real under the microscope? What is real out there in the sky?

Here is a scientific article on star counting. It is illustrated by photographs. One series of photographs depicts the same patch of sky as seen using telescopes of increasing power. The first picture represents what can be seen with a lens that renders only stars of the twelfth magnitude clearly visible. The second, third, and fourth pictures show the enormously increasing number of stars that appear to exist when stronger glasses bring stars of the fifteenth, eighteenth, and twentieth magnitude to visibility.

The ancients saw the stars with the naked eye. In that way one can count about six thousand of them and one then sees stars of only the first to sixth magnitudes. Stars of the first magnitude are a hundred million times brighter than those of the sixth magnitude. It is practically impossible to count all the stars in the sky as seen by our most powerful telescopes; they run into hundreds of millions. Therefore, counts are made in restricted areas of the sky, and these are assumed representative of the whole.

All right then: What is the reality here—the few thousand stars seen by the naked eye or the countless millions seen by the aided eye? Or is the true reality what might be seen through a glass of infinite power that would bring in all the stars? Or is it the actual conditions there millions of light years out in space, conditions we can never experience in the sense that we experience things that happen in the same room or on the same earth with us?

We may leave the sky and consider a razor blade. We marvel at its smooth edge. It feels and it looks smooth. We examine it under the microscope and it is rough and jagged. What is the reality about it?

Here is some salt on the table. We use it to season food. We can get all we want very cheaply and it means little to us, but we read that salt is rare and difficult to obtain in certain parts of the world and is there esteemed highly as a great delicacy. What is the reality about this common salt?

A chemist takes it to his laboratory. By appropriate means he breaks it down. He shows us a soft, bright metal that can be cut with a penknife and which, when thrown on water, spontaneously bursts into flames. He shows us a queer greenish gas which makes us cough if we try to breathe it. He says the metal is sodium and the gas chlorine and that the common table salt is really composed of them.

Is it really, we ask? What trace of that soft explosive metal and that green gas is there to be found in this white powder, common table salt? If sodium and chlorine exist in the salt it is obvious they must reside there as their own proper selves, at least that is the only way we could recognize them. The chemist says that common salt (NaCl) equals sodium (Na) plus chlorine (Cl). What does he mean by equals?

Turn to another problem, that of lead in food. Lead is a poison. If quantities of it remain in fresh fruits and vegetables after they have been sprayed to rid them of insects the foods may be toxic to human beings. Yet certain small traces of lead are not toxic; poison experts are agreed that the body can throw these off without damage. Also certain foods contain no lead—at least that is the report in a certain year.

A year or two passes and it is now reported that practically every food contains some minute trace of lead. None are exempt. What

has happened? A new and more refined method of chemically determining lead has been invented. Foods that appeared to contain no lead when the old method was used can now be shown to contain it by this new and very delicate method. What is reality then? Isn't it a function of the current refinement of instruments and methods? What else?

Laboratory experience is often disconcerting and humbling. Any number of times I have thought I had really proved what had not been proved at all. Any number of times I have truly "seen" certain experiments turn out as my preconceptions told me they should turn out when improvement in methods or better instruments, or a chance inexplicable test which changed my preconception, soon made me "see" the reverse quite as plainly.

At one time I worked for some years upon what I sincerely supposed to be one compound in the blood which proved later to be quite another. What happened later was still more striking. The man who originally discovered the second compound, and who had also reported synthesizing, or building it up, from its simpler constituents, was wrong about its constitution. In the end it was discovered that three different biological chemists in three different countries had been working for some years in the effort to make a nonexistent substance!

Certainly the reality that the scientists apprehend differs from that the ordinary run of us experience simply because he uses different methods and instruments, as well as a different background of knowledge, in analyzing and examining the data of experience. What the scientist regards as real today depends upon the state of his knowledge, the refinement of his instruments, and the perfection of his methods. Change any of these factors and he will of necessity announce a new reality tomorrow.

Moreover the scientist, like other human beings, is animated by certain desires. For instance he prefers a monistic to a dualistic universe. He prefers a certain continuity in the phenomena of nature. He does not like to countenance arbitrary breaks in natural phenomena and often says nature makes no sudden leaps. He assumes that objects in some way persist and maintain their identity, though he can not prove this.

What is the identity of a glass of water? The water depends for its shape and contour upon the nature of the glass. But what is

more, its molecules are assumed to be in a state of perpetual motion at tremendous speeds. At the top certain molecules are continually shot off into space and become water vapor. Hence the glass of water does not persist as such from one second to the next though the scientist has to assume that it does.

The scientist also expects to find a certain simplicity and economy in the explanation of natural events, and he holds that the simplest and most economical explanation is therefore the truest—a piece of pure metaphysics. He tried to build such systems as will predict future consequences accurately and he requires some sort of "stuff"—atoms or what you will—with which to build. He holds to the theories of the uniformity of nature, the existence of determinism in nature, and the validity of inductive generalization.

Like the rest of us, the scientist feels that when his expectations have been fulfilled he is on the right path, and there is comfort in that. At one time the universe made up of hard little billiard-ball atoms seemed to fulfill these expectations, along with the fiction of potential energy—precisely enough fictioned potential energy being created to enable the system to preserve its total energy and thus satisfy the so-called law of the conservation of energy. But those things have passed away. They are no longer real.

Atoms were invented to explain certain things scientists observed in their laboratories, but they eventually assumed a suppositious reality and in some mysterious way seemed to become more real than the facts they were invented to explain. The same holds for our more modern electrons, protons, and other particles, as well as for genes and cells in biology. These things are constructs, not realities, yet leading scientists often appear to feel as if they were very real.

However, it is said that the scientist "verifies" his assumptions. What does this consist in? The scientist determines whether the consequences deduced from his hypothesis are or are not contradicted by his observations of nature. If the hypothesis can not be verified it is excluded ruthlessly, for science is interested not in truth as a whole but only in technically verified truths.

The only facts that have standing in science as it is are those that fit into its current pattern of truth. The hypotheses of science are indeed verified by the facts observed, but it must be remembered that the only facts considered valid to verify the hypothesis are those not too obviously in conflict therewith. Hence scientific laws and the facts of nature form a mutual verification society.

Upon what do the judgments of science depend? Upon a mere half dozen factors. There are first, judgments of perception such as: The rabbit is white. Second, there is the belief in the existence of an external world, fundamental but incapable of proof. Third, there is the belief in the trustworthiness of memory, and we all know how little reliance can be placed here. Fourth, there is the belief in the existence of other selves which are, by and large, like ourselves, also fundamental but incapable of proof. Fifth, there are such self-evident analytical judgments as one foot equals twelve inches, axioms agreed upon by definition but having nothing whatever to do with the events of nature or with what ordinary people regard as reality. Sixth, and last, there are synthetic propositions concerning the relations between universals—such as black is different from white. Upon these factors the whole fabric of science rests.

As a result all science becomes a highly personal and subjective affair. It used to be said that the social sciences were not truly scientific because the investigator could not be objective; he himself formed part of his object of study. This is now seen to be true of the biological and physical sciences as well. It is true to such an extent that in *Science Progress* for October 1932 Prof. G. B. Brown produced two or three pages of delightful humor on the subject—for the elect and initiated.

Herein he depicted such great scientists as Einstein, Sir J. J. Thompson, Lord Rutherford, Sir Arthur Eddington, Dirac, and Heisenberg as each building his own peculiar little structure of highly personal physics. Some, like Schrödinger and de Broglie, were represented as living in rows of huts. Einstein was described as standing at the entrance to a cave and facing a cliff of solid rock, a little undecided just what to do.

Then, what is the opinion of such a man about reality? That should be more important than almost anything else. I sought to find out, and in his Herbert Spencer Lecture "On the Method of Theoretical Physics," delivered at Oxford University June 10, 1933, Einstein delivered himself of his opinion. The lecture started with the thought just mentioned above, subjectivity in physical science. For Einstein began by saying that a man's "view of the past and present history of his subject is likely to be unduly influenced by what he expects from the future and what he is trying to realize today." Our own Prof. P. W. Bridgman expressed a similar idea

some years ago when he wrote that "the chances are, therefore, that the relations between phenomena will be found by those who are previously convinced that the relations exist."

This idea that the beliefs of the physical scientist determine the kind of science he develops is not new. In the last article of the late Viscount Haldane published in this country, in 1928, he declared that all science had been driven back upon mind as the only basis upon which explanations were available. In discussing "Reality in Physics" before the American Physical Society, late in 1931, Dr. W. F. G. Swann described reality as "the most alluring of courtesans, for she makes herself what you would have her at the moment."

In his address delivered as President of the British Association for the Advancement of Science in 1934 Sir James H. Jeans said that "in the old physics the perceiving mind was a spectator; in the new it is an actor. Nature no longer forms a closed system detached from the perceiving mind; the perceiver and the perceived are interacting parts of a single system." We may accept it as fundamental in modern scientific thought that the mind determines the type of reality the physical or other scientists claim to perceive.

Einstein, in the address we were following, continued that pure logical thinking could give us no knowledge whatever of the world of experience, conclusions reached by such processes being entirely empty so far as reality is concerned. However, modern theoretical physics consists of certain basic concepts, which are purely invented fictions, related together logically by laws, from which certain consequences are deduced logically. The experiences and observations of the scientist must conform to these theoretically deduced consequences, otherwise the system is faulty.

Reason supplies the structure of modern science and experience produces the data. Science differs from a geometry like Euclid's in that Euclid made no direct attempt to relate the consequences of his logical theory to the experiences of reality. Hence, in modern science, a fact is worth nothing until it is sustained by a good theory, but the whole structure is, Einstein says, founded on "certain basic concepts and laws which are not logically further deducible." These indispensable concepts are merely assumed "true" as were the axioms in our school geometries.

Therefore, unproven assumptions underlie all science and the

character of any science depends largely upon the character of the assumptions regarded as true in the first place. In the eighteenth and nineteenth century, however, scientists did not realize the purely fictitious character of their basic principles. Newton, for instance, believed that he developed his basic principles about space, time, mass, force, acceleration, etc. directly from experience.

While Newton was rendered a bit uneasy by his idea of absolute space (because it involved the idea of absolute rest and he could find no body at absolute rest) he did not suppose his basic concepts to be "free inventions of the human mind," as Einstein puts it. Einstein and his coworkers, however, accepted the idea that the basic postulates were freely invented and declared that "the fictitious character of the principles is made quite obvious by the fact that it is possible to exhibit two essentially different bases, each of which in its consequences leads to a large measure of agreement with experience."

It is well, of course, for science to diminish the number and increase the simplicity of its basic concepts, but there is then an ever-widening gap between the axioms and the consequences. The widening of that gap worries modern physicists a great deal, Einstein admits. Then, he asks, has a scientist any reason to hope that they will find what he calls "the correct way" in time. His answer to his own question is:

"To this I answer with complete assurance that in my opinion there is *the* (his own italics) correct path and, moreover, that it is in our power to find it. Our experience up to date justifies us in feeling sure that in Nature is actualized the ideal of mathematical simplicity. It is my conviction that pure mathematical construction enabled us to discover the concepts and laws connecting them which give us the key to the understanding of the phenomena of Nature."

That is all. We may achieve understanding, but never direct knowledge of some one absolute reality. Experience must still guide us in the choice of the mathematical concepts to be used, though it must not be the source of their derivation. "The truly creative principle resides in mathematics." Moreover Einstein is a strong believer in simplicity in Nature, a belief which, we must remember, determines the character of the science he will evolve and espouse. He demands that science at all times search "for the mathematically simplest concepts and connexions of them" and in the very paucity of

the possible concepts and relations he sees "justification for the theorist's hope that he may comprehend reality in its depths."

None the less the reality so comprehended and expressed in formidable equations would differ enormously from what the average person regards as reality. The detailed picture of space and time made familiar to us by the older physicists would vanish utterly. Instead we should have a group of impressive mathematical formulae which can not be pictured. These new concepts can not be reduced to the old terms nor visualized by use of the old pictures of reality.

The theory that mathematics will ultimately explain the universe is a metaphysical theory, of course, though it is the very heart of modern scientific explanations. Ultimate reality and causal efficacy are ascribed to mathematics, and this world is then identified as best it may be with the realm of material bodies moving in what we naively call space and time. This Einsteinian world is not one of stuffs or substances possessing certain qualities experienced by human beings. It is a world of purely mathematical electrons which move in accord with fixed mathematical laws. Is this reality?

Here is an ethereal stratosphere of four-dimensional continuums, Riemannian metrics, vector-fields, anti-symmetrical tensor-vector-fields, and spinor field quantities. All of this is very remote from our daily life. Even quite expert scientists may become somewhat awed by this hypnotic nomenclature. Yet the results obtained mathematically depend for their validity upon the number and quantity of the data available, or upon the number of observations that happen to have been made at the time the predicting calculations were carried on.

For instance, both Neptune and the trans-Neptunian planet were found as predicted simply because the limited number of inaccurate observations used by Leverrier and Lowell in their calculations happened by the merest chance to give a result that was later verified. Had either prophet had more reliable data, or had the observations existed in greater number, their predictions would have been completely falsified. So it is through all mathematics.

When a scientist weighs a crucible on his balance, takes a reading on a colorimeter or polariscope, measures electric current by observing a pointer—and practically all science consists merely in observing pointer readings—he must finally arrive at a figure he calls "correct." That is the average of a series of five, ten, or twenty

weighings or readings. It very often is not precisely the same figure as that for any one real weighing or reading, yet this purely mathematical average is announced as the correct value.

Then what is the reality the scientist discovers? It depends not only upon his original choice of basic concepts and his personal beliefs, but also upon the quantity of data at hand. It is manifestly certain that a chemist will not get exactly the same value when he weighs a crucible five times and averages these weighings as when he weighs it twenty-five times and averages those weighings. It is just as obvious that a rather unusually erroneous weighing will bulk more heavily in the first average than in the second.

Hence mathematics is treacherous. It can not give us the inner nature of real reality. It gives us a sort of austere mathematical reality—a reality of averages, equations, and abstract concepts. This is, however, the present chosen reality of modern physics and of physical science generally. It fixes the pattern of science and, as we saw earlier, that pattern determines the facts science will accept, just as it is determined by the facts science has accepted.

For instance, it happens to be true that every major observation of the speed of light that has been made since 1902 has given a slightly smaller result than the previous observation. It would seem logical to conclude, therefore, that the speed of light in miles per second is really diminishing, but the scientists conclude no such thing. The pattern of modern physics demands that the speed of light remain absolutely fixed, hence irregularities are attributed to "experimental error."

Charles Peirce, noted American scientist and philosopher, went so far as to suggest accepting the actual results in the case of any scientific experiment, rather than having resort to averages. He was bothered by the scientist's pet alibi, "experimental error," and said why not assume that the individual results are correct and that all scientific findings forever oscillate around purely theoretical and fictioned fixed points? His heretical suggestion has been largely ignored by science.

Consequently science continues to accept as "real" that which its current pattern regards as real, no more no less. The chemist accepts as the result of his analysis the average of twenty weighings on his refined balance, not the result—the actual, true, real, experimental result, that is—of a single weighing. Physical reality is re-

duced to a set of equations, the electrons themselves have become disembodied ghosts or near wave forms in four-dimensional space-time, and statistical averages rule dictatorially over all.

Speaking in Germany in the fall of 1934 Prof. W. Heisenberg, noted physicist and discoverer of the so-called principle of indeterminacy, remarked that the old physics which dealt with the behavior of real entities in space and their real variations with time was no more. The old view that "the occurrence of events in time and space is independent of observation" is gone forever. The concepts of absolute time and of determinacy have no place in the new cosmic physics, however useful they still are in certain limited fields such as mechanics, optics, or thermo-dynamics, where they remain as unaltered as did the geography of the Mediterranean Basin after the voyages of Columbus and Magellan.

Heisenberg very plainly said: "Thus Nature influences modern natural science more than the earlier form in such a way as to place the old question of realization of reality upon a new basis and to answer it in a new manner. Previously the pattern of exact science led to a philosophical system in which a definite truth—perhaps the 'Cogito, ergo sum,' of Descartes—was the starting point from which all problems of world-view were to be attacked. Nature in modern physics has reminded us clearly, however, that we may not hope to reach the entire region of the understandable from such a fixed basis of operation."

If any science should give us what we formerly regarded as reality it should be physics. But what have we found? Physics is a system of symbolic construction. It starts with definite facts that can be perceived but which are too gross for its immediate acceptance. Its pattern will not admit these crude data. So it proceeds next to work in a highly theoretical field where many things are imperceptible and where there is great freedom from the restraints of experience. Thereafter it returns to the facts of nature to check up.

A physicist sees, for instance, the deflections of a pointer on an ammeter and notes that these change in certain ways when he adds more wire to the electrical circuit. He then retires to his chamber of speculations and invents entities he has never observed in order to explain these facts, *i.e.*, to make them intelligible to him in terms of his thought pattern, for he believes he has perceived similar things in similar but really quite different connections.

He calls these invented entities "electric current," "resistance," "electromotive force," though he admits their properties are merely assumed by definition, and they are useful merely because of their symbolic character, and of the relations into which they can enter. He derives a law, such as Ohm's Law, which no real electric current ever does follow exactly. He deduces certain consequences that should occur if this law were approximately true, then he returns to the world of experience to see what he can see.

If the law is not verified it is false, though if it is verified that does not prove it true—it proves merely that it held true in the particular tests made. In making these tests, the physicist says he is measuring current, resistance, and electromotive force. He makes his fiction of the electric current still more definite by imagining streams of fictioned particles going through wires like molecules of water down between river banks, and he calls these particles electrons.

He next thinks of these particles as being charged with electricity and, finally, of producing effects (like cloud tracks) which can be detected by the eye. Yet the electrons are never objects of perception. They are not part of nature, though by using such concepts the physicist can make correct statements about matters of fact that can be perceived in nature. The whole field of symbolic construction of physics is thus filled with masses, forces, electrons, and so forth, but the reality we are searching does not appear.

It never does appear anywhere in science where materialism is outmoded. For science and what the average person regards as reality have parted company, and it looks as if the divorce were absolute and final.

BOOK NOTES

Mencius. Translated by Leonard A. Lyall. Longmans Green & Company. New York, 1932. Pp. 277.

Mencius lived in China at a time when the power of the empire was weak, and the suffering caused by warfare and tyranny of the feudal kings was great. He saw deep into the hearts of the people and collected doctrines from older literature and sayings, approaching national problems realistically, always with an understanding of man's intellectual and moral nature as basis. Though his doctrines upheld the traditional Chinese Society, he accepted the ancient right of the people to revolt against an evil sovereign, and insisted the duty of king was to rule in the interests of the people. "If a prince is benevolent all is benevolent." Feelings, thought, and activity, he found a universal attribute of mankind, and that wisdom and kindness come from within. Individual responsibility is emphasized again and again—reform through the reform of the individual.

How deeply the effect of this social philosophy of the potentiality of the individual is engrained in Chinese thought, can be seen in the way she is now slowly building from the bottom up.

China, however, though accustomed to ideas of communism from her great family system, seems to be emerging now towards a more individualistic system. The continuity of her mental and cultural civilization is still a reality.

Mencius followed the teachings of Confucius. His approach to national problems was psychological and based on his analysis of the individual.

The excellent and direct translation of Mr. Lyall, with the humor and imagination of the original preserved, makes interesting reading, although the teachings of Mencius are scattered and difficult to follow.

Book xiv, Chapters xi, xii, xiii.

Mencius said, A man that loves fame can give up a land of a thousand cars; but if he is not the man to give things up, it will show in his face over a bowl of rice or pea soup.

Mencius said, Without faith in love and worth the land is empty and hollow. Without good form and right, high and low are confounded. Without rule and order there is not enough money for use.

Mencius said, Lands have been won without love, but all below heaven was never won without love.

Japan's Policies and Purposes. By Hiroshi Saito. Marshall Jones Company, Boston, 1935. Pp. 231.

Mr. Saito speaks with knowledge as well as authority on the policies and purposes of his country. This volume is composed of a selection of addresses and writings by the Ambassador which contain a consistent interpretation and which explains the Japanese point of view of many happenings which puzzle Americans, such as her relations with China in Manchukuo and her foreign trade policies.

A History of Western Civilization. By Harry Elmer Barnes with the collaboration of Henry David. Vol. I. New York, Harcourt Brace and Co., 1935. Pp. xxvi, 911.

Two main convictions of the author have guided his history of the institutions and culture of the western world—making it a contribution to the

"so-called new history,"—namely, that it should be grounded in "biology, anthropology, archaeology, and sociology as well in political, legal, and military history," and that it should tell the "whole story of human development." Though free from moralistic missions the author feels that the significance of a history lies in its power of understanding the present and pointing towards a better future.

The Supreme Law. By Maurice Maeterlink. Translated from the French by K. S. Shevankar. New York, E. P. Dutton and Co., 1935. Pp. 160.

Maurice Maeterlink, poet and mystic, in his latest work, describes his attitude toward life and science. He is not willing to discard the work of Newton for the Einstein theory of relativity, but finds "that men have plunged farther into the dark because they have searched for light more avidly. It is with gravitation as with all the other great problems of the world . . . but an instinct whispers to us that these obscurities are more fertile than the trivial clarities which cradle self-complacent ignorance."

A Search in Secret India. By Paul Brunton. New York, E. P. Dutton and Co., 1935. Pp. 312.

"A quest," says Sir Francis Younghusband in his Foreword, "for that India which is only secret because it is so sacred." The author portrays vividly the numerous magicians, yogi, and holy men against characteristic features of Indian background. Finally under the guidance of the Maharashee of the Holy Hill of the Beacon, he experiences spiritual enlightenment with its transcendent bliss and peace, and a realization of the significance of life.

The Church of Christ and the Problems of the Day. By Karl Heim. New York, Charles Scribner's Sons, 1935. Pp. xii, 132.

Professor Karl Heim, Professor of Theology at the University of Tübingen, delivered the 1935 James Sprunt Lectures at the Union Theological Seminary of Richmond, Va., which appear in this volume. They consist in a discussion of the position of the church today from the orthodox Evangelical point of view. The church is threatened with being crushed between the two great forces of Communism and Nationalism, each of which is a faith and way of life as well as a political organization. The author makes an inspired plea for the validity of the acceptance of Jesus, the reality of sin and the reality of the Atonement, the power of prayer and the vital importance of the Resurrection.

The Early Philosophers of Greece. By Matthew Thompson McClure. With translations by Richmond Lattimore. New York, D. Appleton Century Co., Inc., 1935. Pp. x, 218.

With a short introduction setting the stage of early Greek thinking,—the prehistory of the Greeks, their beliefs about the soul, about the cosmos, about nature and man's relation to nature, Professor McClure has written an interpretation of the early philosophers of Greece. He has considered it essential to include translations of what source material is available. His insight and clearness make this a valuable book for beginner as well as the student of philosophy.

The Accuracy of the Bible. The Stories of Joseph, the Exodus, and Genesis confirmed and illustrated by Egyptian Monuments and Language. By A. S. Yahuda. New York, E. P. Dutton and Co., Inc. Pp. xxxvii, 226. Illustrated.

The author, equipped with the knowledge of the languages and cultures of the neighbors of the people of Israel, points out Assyro-Babylonian similarities as well as subsequent Egyptian elements. His object is to prove by tracing

the various relationships of words and customs that the biblical narratives could only have developed by migration from Ur, through Canaan to Egypt and back again. The details of his research and his interpretation of their significance make interesting reading.

Tangled Hair, translated from the works of the poet Akiko Yosano by Shio Sakanishi. Boston, Marshall Jones Company, 1935. Pp. xvi, 70.

This is the second volume of the Modern Japanese Poets Series, and is as beautifully printed and bound as *A Handful of Sand* by Takuboku Ishikawa. The author is the only woman represented in the series.

It is interesting to note what tremendous changes the urge for poetic expression makes in the life of a poet. Akiko as a child was rebellious against the drabness and drudgery of her conservative, middle-class life, but found consolation in books of her great-grandmother which she secretly read in the old store-room behind her father's confectionery shop. Later she secured current literature and translations from the French and English. Her meeting with Hiroshi Yosano marked the turning point of her career. ". . . with desperation I staked my whole life, fought and won my love. With this triumph, I escaped from the family bondage, which had so long imprisoned my personality. Moreover, that very moment, I found that I could freely give artistic expression to my inner thoughts and feelings. Thus all at once, I won the three most precious things of life: courage, love, and poetry."

Hiroshi was at this time the leading spirit in the New Society whose purpose it was to instill and to give expression to the experiences a feeling for love and beauty into poetry which had degenerated into a "mere choosing and arranging of words." He divorced his wife and married Akiko.

The creed of the Society was embodied in her first volume of poetry, *Midare gami* (*Tangled Hair*), a passionate exaltation of love and beauty. Conservative readers, at first scandalized by her frank admission of passion and desire, soon began to quote her. Akiko's courage and glamour, augmented by her romantic marriage, caught the public imagination. Her later poetry developed more depth and lost some of its early exuberance. Her creative energy was tremendous. Between 1901 and 1928 she wrote twenty-one volumes of poetry. Unlike less robust poets she has been able to devote thirty-five years of unbroken service to her literary activity. Akiko later has written many essays for magazines and newspapers. She has devoted much time to a girls' school founded by her husband and to her large family of twelve children, ten of whom are still living.

The influence of the Yosanos on the development of poetry in Japan is significant because with their great energy and revolutionary spirit they were largely instrumental in bringing about the renaissance of Japanese poetry and bringing it into closer touch with reality.

TANGLED HAIR

As my tangled hair
Unwittingly touched the strings,
The harp that had been still
For three long spring months,
Sounded a note.

Not knowing love,
I sought beauty in the gods.
But today I see in you
The beauty in heaven and earth.

A LOTUS BARGE

As to good and evil
Ask those behind me on the bank.
I, for one, ride and play
On a hurricane.

SUMMER TO AUTUMN

Like a holy Buddha
In a shrine of gold,
The morning sun rests in the depths
Of the field of rape-seed flowers.

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