fact that the Berkeley meeting is a joint affair including the Pacific Coast Division as well as the association generally, the executive committee decided to include in the program a Maiben Lecture also.

The committee took advantage of the presence in this country of the distinguished English scientist, Dr. L. Dudley Stamp, geologist and geographer, now on the faculty of the University of London, and as chairman of the Commission on Land Utilization actively concerned in the study of land utilization in England. It was felt that a discussion of this problem was most timely in view of present movements in our own country. Dr. Stamp will speak on Tuesday evening on "Planning the Land for the Future."

On Wednesday, Dr. J. C. Merriam, of the Carnegie Institution of Washington, will speak on "The Responsibility of Science with Relation to Governmental Problems." On Thursday evening, Dr. E. B. Wilson, of Harvard University, will discuss the question "Are There Periods in American Business Activity?" On Friday evening, Dr. Karl T. Compton, president of the Massachusetts Institute of Technology, will speak on "Science and Prosperity." The last three speakers are too widely known as leaders in the field of science to need any further comment on their work.

In view of the fact that the president of the association, Dr. Edward L. Thorndike, finds it impossible to be present at Berkeley, Dr. W. W. Campbell, president of the National Academy of Sciences, past president of the American Association and president emeritus of the University of California, has agreed to preside on Monday and Tuesday evenings, and on behalf of the association to arrange for presiding officers for the following general sessions.

SCIENTIFIC NOTES AND NEWS

IT is stated in *Nature* that Professor H. L. Lebesgue, of Paris, the discoverer of "Lebesgue integration," and Professor O. Warburg, of the Kaiser-Wilhelm Institut für Zellphysiologie, Berlin-Dahlem, known for his work on cellular metabolism and respiration, were elected foreign members of the Royal Society, London, at the annual meeting on May 3.

SIR SIDNEY HARMER, formerly director of the Natural History Departments, British Museum, was presented on May 24 with the gold medal of the Linnean Society.

JAMES CLOYD DOWNS has been awarded the Schoellkopf Medal of the Western New York Section of the American Chemical Society for 1934, because of his work in producing sodium directly from salt. The medal was presented at the meeting of the section on May 8 at Niagara Falls. Following the presentation an address on "The Downs Cell and its Relation to the Sodium Industry" was given by H. M. Gilbert, of the R. and H. Chemicals Division of E. I. du Pont de Nemours and Company. H. R. Carveth, former president of the R. and H. Chemicals Company and also a former associate of Mr. Downs, introduced the medalist.

LEWIS WARRINGTON CHUBB, director of the research laboratories of the Westinghouse Electric and Manufacturing Company, Pittsburgh, will be presented with the Lamme Gold Medal, awarded annually to an Ohio State University alumnus distinguished in the field of engineering, at the commencement exercises of the university. The medal was established by the late Benjamin G. Lamme, '88, and is valued at $200.

DR. W. J. GIES, professor of biological chemistry at Columbia University, was recently tendered a dinner by his past students and members of the staff.

A DINNER in honor of Dr. John R. Murlin, director of the department of vital economics at the University of Rochester, was given on April 30 by members of the staff, graduate students and other associates, in celebration of the sixtieth anniversary of his birth. A morocco-bound volume of letters of greeting from many of his friends was presented.

AMONG honorary degrees conferred in commemoration of the centenary of the Medical School of the University of Liverpool was the degree of doctor of science on Professor Henry Roy Dean, professor of pathology, University of Cambridge, and master of Trinity Hall; on Sir Thomas Lewis, University College Hospital, an authority on diseases of the heart, and on Mrs. May Mellanby, investigator for the Medical Research Council and wife of Professor E. Mellanby.

THE University of Birmingham will confer in June the degree of LL.D. on Dr. G. T. Morgan, emeritus professor of the University of Birmingham, director of the Chemical Research Laboratory, Teddington, and president of the British Chemical Society; on Dr. C. A. Lovatt Evans, Jodrell professor of physiology, University College, London, and on Sir Harry Duncan McGowan, president and chairman of Imperial Chemical Industries, Limited.

PROFESSOR HAVEN EMERSON, of New York City, has been elected an honorary fellow of the Royal Sanitary Institute, London.

SIR RICHARD REDMAYNE, formerly inspector of

mines, was elected president of the British Institution of Civil Engineers at the annual meeting in London.

DR. HARRY WOODBURN CHASE, who succeeded Dr. Elmer Ellsworth Brown as chancellor of New York University, will be formally installed on June 16. Dr. Chase was previously successively professor of psychology and president at the University of North Carolina, and from 1930 until his election to the chancellorship of New York University, president of the University of Illinois.

DR. WARREN J. MEAD, of the University of Wisconsin, has been appointed head of the department of geology at the Massachusetts Institute of Technology. Dr. Mead succeeds Dr. Waldemar Lindgren, who retired last June with the rank of professor emeritus after a distinguished career. Since that time Dr. Hervey W. Shimer, a member of the teaching staff for more than thirty years, has been acting head of the department of geology. Alfred V. de Forest, research engineer of Bridgeport, Connecticut, has been appointed associate professor of mechanical engineering.

PROFESSOR GEORGE E. SIMMONS, head of the department of agronomy at the University of Maine since 1911, has tendered his resignation to become effective at the close of the academic year, when he will have served twenty-five years as a member of the university faculty.

DR. CURTIS FLETCHER MARBUT, of the soils survey of the U. S. Department of Agriculture, who was formerly a member of the faculty of the University of Missouri, will return to the university as honorary professor of soils on July 1 to continue his experiments there.

JOSEPH A. CHUCKA, associate biologist in the Maine Agricultural Experiment Station, has been appointed head of the department of agronomy and agricultural engineering at the University of Maine.

AT Stanford University the following have been promoted to associate professorships: Dr. J. Murray Luck, in biochemistry; Dr. Francis W. Bergstrom, in chemistry, and Dr. Aaron C. Waters in geology.

ANNOUNCEMENT is made of the following appointments at the University of Washington Oceanographic Laboratories: Dr. Dora Priaulx Henry, Dr. Martin W. Johnson and Dr. Belle A. Stevens, research associates in zoology; Dr. Lucille A. Liston, research associate in chemistry. Dr. Bertram D. Thomas has resigned as research associate in chemistry and oceanography to accept a position as research chemist with the Battelle Memorial Institute, Columbus, Ohio.

THE Carnegie Institution of Washington announces that Dr. Charles B. Davenport will retire on July 1 as director of the department of genetics at Cold Spring Harbor, L. I. Dr. Albert F. Blakeslee, assistant director, will serve as acting director during the remainder of the year. Dr. Davenport has been appointed a research associate for a limited period dating from July 1, in order to facilitate arrangements which will enable him to bring to a stage of report certain special studies on child development and growth.

THE Administrative Council of the Pasteur Institute at its meeting on May 16, called for the purpose of choosing the successors of M. Roux and M. Calmette, designated M. Louis Martin, director and M. Ramon assistant director. It also decided to create a Scientific Council composed of M. Bordet, president, and M. M. Gabriel Bertrand, Borrel, Mesnil, Nicolle and Yersin, members. M. Courtray, inspector general of finances, was chosen administrative councilor.

DR. CAREY CRONEIS, of the University of Chicago, who last year was in charge of the geology exhibit at the Chicago World's Fair, has recently been appointed head of the Hall of Science for the 1934 Century of Progress Exposition.

DR. FREDERICK D. ROSSINI, of the thermochemical laboratory of the National Bureau of Standards, has been appointed to succeed the late Dr. Edward W. Washburn as a member of the Permanent International Committee on Thermochemistry, which body is empowered by the International Union of Chemistry to establish standard values for the important thermochemical constants.

F. J. SIEVERS, director of the Massachusetts Agricultural Experiment Station and of the Graduate School at Massachusetts State College, has been elected by the United States Trust Company of New York to direct the investigations under the Herman Frasch Foundation for Chemical Research. Research in agricultural chemistry under this foundation is at present being supported at the University of Wisconsin, University of Missouri and the Boyce Thompson Institute.

THE officers, executive committee and members of the Division of Geology and Geography, National Research Council, for the year beginning July 1, are as follows: *Chairman,* Edson S. Bastin; *Vice-chairman,* W. L. G. Joerg; *Executive Committee,* Edson S. Bastin, W. L. G. Joerg, W. H. Twenhofel (retiring chairman), E. C. Case, Nevin M. Fenneman and Thomas B. Nolan; *Representatives of societies,* Donald C. Barton and E. C. Case—Geological Society of America; W. F. Foshag—Mineralogical Society of America; August F. Foerste—Paleontological Society; Nevin M. Fenneman and C. F. Marbut—Association of American Geographers; W. L. G. Joerg—American Geographical Society; Thomas B. Nolan—Society

of Economic Geologists; R. S. Knappen—American Association of Petroleum Geologists; *Members at large,* Edson S. Bastin, Mark Jefferson and Morris M. Leighton. Communications intended for the chairman of the division should be addressed to him at the National Research Council, Washington, D. C.

DUE to illness, Professor Edgar Allen, of the Yale University School of Medicine, is unable to carry out his plans of being in charge of the course in Surgical Methods in Experimental Biology at the Biological Laboratory, Cold Spring Harbor, this summer. Professor George W. Corner, of the School of Medicine of the University of Rochester, will direct the work of the course. He will be assisted by Professor Ernest W. Blanchard, of Bryn Mawr College and Mr. William H. Parkins, of Princeton.

DR. GEORGE B. CRESSEY, chairman of the Department of Geology and Geography at Syracuse University, sailed from San Francisco on June 1 for five months of geographic field work in China. This study is made possible through an appropriation from the National Research Council.

DR. HARVEY CUSHING, Sterling professor of neurology, and Dr. Stanhope Bayne-Jones, professor of bacteriology, will speak before the Association of Yale Alumni in medicine on June 18, and at a dinner to be given in the evening Dr. C.-E. A. Winslow, professor of public health, will speak on "A Physician of Two Centuries Ago."

DR. HAROLD C. UREY, of Columbia, discoverer of heavy hydrogen, delivered a public lecture at the University of Minnesota recently, telling "The Story of the Isotopes." Dr. Urey's lecture was sponsored by the Minnesota chapter of Sigma Xi. He also spoke before the Minnesota chapter of the American Chemical Society and took part in a colloquium of the chemistry faculty.

DR. ARTHUR H. COMPTON, professor of physics at the University of Chicago, will be the commencement speaker at Ohio Wesleyan University, on June 4. Dr. Compton gave two lectures at the Iowa State College under the auspices of the Sigma Xi on May 8, on "The Quest of the Cosmic Ray" and "The Rôle of Science in the New Civilization."

DR. ROBERT F. GRIGGS, professor of botany at George Washington University, gave the annual Sigma Xi address before the University of Cincinnati Section of Sigma Xi, on May 18. His talk, illustrated by lantern slides and motion pictures, was on "The Scientific Results of the Katmai Expeditions."

PROFESSOR LOUIS KAHLENBERG, of the department of chemistry of the University of Wisconsin, addressed the chemists and biologists of northeastern Wisconsin at Appleton at the Institute of Paper Chemistry on May 24, on "The Function of the Sterols in Plant and Animal Life."

PROFESSOR CHARLES SINGER delivered the annual oration on "The Contrast between Ancient and Modern Science" at the London Jewish Hospital Medical Society on May 10.

MORE than three hundred leaders in science and industry were present at Chicago on May 25 to attend the forum on progress sponsored by Alfred P. Sloan, Jr., president of General Motors Corporation. The forum, entitled "Previews of Industrial Progress in the Next Century," was held in the Hall of Progress, General Motors Building, on the grounds of the Century of Progress Exposition, which was officially opened on the following day. Each delegate contributed a statement giving his opinion of what he believes will be "the most important development ahead that might lay a foundation for broad industrial growth." Besides Mr. Sloan, who presided, the speakers were: Charles F. Kettering, vice-president of the General Motors Corporation, in charge of research; Dr. Willis R. Whitney, of the General Electric Company; Dr. Arthur H. Compton, professor of physics, University of Chicago; Walter B. Pitkin, of Columbia University School of Journalism; Carl R. Gray, president of the Union Pacific Railroad; Dr. Morris Fishbein, editor of the *Journal* of the American Medical Association; M. H. Aylesworth, president of the National Broadcasting Company; Glenn Frank, president of the University of Wisconsin, Dr. Robert E. Wilson, director of research for the Standard Oil Company of Indiana, and Harvey Wiley Corbett, architect.

THE London *Times* reports that in accordance with their general plan for reconstruction of the upper floor of the British Museum, the trustees will shortly proceed to reconstruct those parts of the northern galleries of the main building which have not already been undertaken. The first, second and third Egyptian Rooms have already been reconstructed and reopened; progress is being made with the old sixth Egyptian Room, but it can hardly be opened to the public before the middle of next year. There remain the fourth and fifth Egyptian Rooms, and the whole range of smaller galleries (the Syrian, Semetic, Old Babylonian, Assyrian and Persian Rooms) between the northwest and northeast staircases. The Students' Room and offices of the Egyptian Department, together with the approach to the King Edward VII Building, will also be involved. These galleries which are to be reconstructed will be closed to the public from October 1 onwards, but the Students' Room will remain open until October 15. A temporary Stu-

dents' Room will be established as soon as possible in the Assyrian Basement, which will remain closed to the general public. Of the objects thus removed from exhibition it will be possible to exhibit only a few in other parts of the building. Two cases of special interest, containing the Oxus Treasure and the Nimrud ivories, will be placed in the Front Hall. Other select cases will be placed in the new Babylonian (old sixth Egyptian) Room as soon as that is available. All other antiquities from these galleries will be stored, and it will not be possible to supply information, make photographs, or permit inspection of them during the period of reconstruction. These works are expected to take not less than two years.

DISCUSSION

THE HISTORY OF CHINESE MEDICINE[1]

THERE is more and more evidence appearing that the silk route from China, although safer in the days of Marco Polo, was never absolutely closed for long periods, although Mohammedans extracted most of the profits from caravans a large part of the time. From China Europe learned not only of printing, the compass, gunpowder and firearms, silk and porcelain, but also alchemy, the deep breathing and exercises now taught in physical education and the diagnosis of disease by means of the pulse. The reason that Europe knew so little of Chinese medicine was not that China was physically isolated, as was Japan, but that Europeans could not read Chinese. The use of alphabets spread over Asia all the way to the Pacific Ocean. Only one people resisted this advance and that was China; whereas Tibetans, Mongolians, Manchurians and Koreans had alphabets. Chinese have always looked upon alphabets with contempt, and "scholarship" in the entire Far East is inseparable from the knowledge of the Chinese characters. It is, therefore, very convenient for us that Wong and Wu have written the "History of Chinese Medicine" in English. Their history is divided into two books, first, that of Chinese medicine and, second, the penetration of western medicine into China. The distinction between Chinese medicine and western medicine was not so great in its early practise, since the basis of most of it has been blood-letting and the administration of herbs and the use of surgery, including anesthetics, but western medicine is entirely different in regard to diagnosis and particularly in the application of scientific discoveries to practise.

BOOK I

Shen Nung 2838 B. C., the founder of Chinese medicine, is described as a student of pharmacology. He experimented on the effects of drugs on himself. The record of these experiments is compiled in Pen T'Sao, but the editing of an edition of the Pen T'Sao on bamboo is attributed to Huang Ti, 2698 B. C. The characters were arranged in vertical columns, due to the shape of the bamboo. In 651 B. C. the use of a soporific potion in surgery is described. In A. D. 7, Wang Mang orders court physicians to study human anatomy. Smallpox is recorded first in A. D. 49. Chang Chung-ching, 168, greatly advanced medicine by studying the cathartic action of bile and made vital statistics of typhoid fever. In A. D. 180 infection with tapeworm is attributed to eating of raw meat. In A. D. 221 the system of physical exercises is elaborated by Hua T'o and, besides the old soporifics, other anesthetics are described. In A. D. 265 Wang Shu-ho publishes the Mo Ching or pulse-classics. If the pulse was like the snapping of a cord (hyper-tension) death in four days of kidney trouble was predicted. In A. D. 443 medical schools were established, and in 502 Tao Hung-ching published Ming I Pieh Lu, the first official pharmacopœia of China.

Notwithstanding all these advances in medicine another tendency developed. In the centuries just before Christ the idea of the philosopher's stone and the Great Elixir of Life took shape. Alchemy was developed and finally spread to Europe and stifled European medicine as well as Chinese. These alchemical ideas were elaborated into what is called taoism, which dominated China until the modern era. Notwithstanding the shadow of taoism some new observations are recorded, but not particularly elaborated, with the exception of one, which was the inoculation against smallpox discovered about 1063 and which was adopted by Europeans and even spread to America. Wong and Wu state that the use of thyroid gland for goiter is recorded in A. D. 627, but no particular attention was paid to this fact. Tung Chi wrote a monograph on beri-beri in 1078, but Wong and Wu do not tell of any method of prevention.

The evidence is considered conclusive by American studies among the Maya Indians that syphilis was carried to Europe from America. It did not take it long to reach China from Europe, as it is described in Canton in 1505. The Europeans bringing syphilis also founded hospitals, the first being the Misericordia Hospital in Macao in 1569.

BOOK II

With the advent of the Portuguese and Spaniards, Jean Terrentius, 1621 to 1630, published a human anatomy in Chinese, but it remained for two Catholic fathers to persuade the emperor that the West had

[1] By K. Chimin Wong and Wu Lien-Teh, The Tientsin Press, Ltd., Tientsin, China, 1933. 706 pages; 92 illustrations.