ports an increase of new members for 1932 of 97, or 9.3 per cent.

The report includes an urgent plea for an addition of not less than one million dollars to the endowment of the garden in order to care for the increased service which it is being called upon to render to the general public and to botanical science and education.

FELLOWSHIPS OF THE CHARLES LATHROP PACK FOREST EDUCATION BOARD

MAKING its fourth annual award of fellowships for training leaders in forestry, the Charles Lathrop Pack Forest Education Board announces its selection of three American and two Canadian fellows for the year 1933. The fellowships were established to encourage men to obtain advanced training to better qualify them for leadership in forestry and in the forest industries. The successful candidates are:

Walter U. Garstka, instructor in forestry, Penn State Forest School. To make organic analysis of leaf litter, immediately after its fall in the autumn, collected from forests growing on podzolized and brown-earth soils.

Harold R. Hay, graduate student, University of Wisconsin. To make a study of changes in the physical properties and chemical constituency of wood subjected to steam treatments.

John Edward Liersch, junior forester, British Columbia Forest Service. To continue a demonstration begun under Charles Lathrop Pack Fellowship awarded in 1932 regarding the practicability of economic selection in the Douglas fir region.

Nicholas T. Mirov, graduate student, University of California. To make a study of transpiration by different forest cover species with reference to precipitation and to moisture content of the soil.

Louis René Scheult, graduate student, University of Toronto, Toronto. To make a regional study of forest development.

This is the fourth award of fellowships by the board. They are available to Americans and Canadians for further training in the general practise of forestry, in the forest industries, in the teaching of forestry, in forest research, or in the development of public forest policy.

The directors of the board are: Henry S. Graves, dean, Yale Forest School; Samuel T. Dana, dean, School of Forestry and Conservation, University of Michigan; John Foley, forester, Pennsylvania Railroad; William B. Greeley, secretary-manager, West Coast Lumbermen's Association; Arthur Newton Pack, director, Charles Lathrop Pack Forestry Trust; E. O. Siecke, director, Texas Forest Service; Ellwood Wilson, acting professor of silviculture, New York State College of Agriculture; Hugo Winkenwerder, dean, College of Forestry, University of Washington, and Raphael Zon, director, Lake States Forest Experiment Station.

The offices of the board are at 1214 Sixteenth Street, N.W., Washington, D. C., and correspondence should be addressed to Tom Gill, secretary.

SCIENTIFIC NOTES AND NEWS

DR. HENRY NORRIS RUSSELL, research professor of astronomy and director of the observatory at Princeton University, president this year of the American Association for the Advancement of Science, will deliver the Halley Lecture at the University of Oxford on June 1. His subject will be "The Composition of the Stars."

DR. ROBERT A. MILLIKAN, of the California Institute of Technology, has accepted the invitation of Oberlin College to deliver the Centennial Commencement address on June 20. Dr. Millikan was recently reelected alumni trustee for a term of six years; he has served on the Board of Trustees since 1918.

DR. IRVING LANGMUIR, of the General Electric Company, Schenectady, New York, will be made an honorary member of the School of Engineering Alumni Association of Columbia University at the annual dinner on April 26. Dr. Langmuir and Dr. Michael I. Pupin will be the principal speakers.

DR. WALDEMAR LINDGREN, Rogers professor of economic geology and head of the department of geology

at the Massachusetts Institute of Technology, will retire at the end of the academic year.

THE Paris faculty of medicine has conferred the degree of doctor, *honoris causa*, on Professor Sanarelli, director of the Hygienic Institute of the University of Rome.

THE Bessemer Gold Medal of the British Iron and Steel Institute has been awarded to Dr. W. H. Hatfield, director of research in the firm of Messrs. Thos. Firth and John Brown, Ltd., in recognition of his distinguished services in the advancement of metallurgical science.

THE Gold Medal of the British Institution of Mining and Metallurgy, the highest distinction in its power to confer, has been awarded to Sir John Cadman in recognition of his work in the advancement of technical education and the development of the mineral industries, and of his distinguished public services. The following awards have also been made: The Consolidated Gold Fields of South Africa Gold Medal to Mr. Charles Arthur Banks for his paper on

"Air Transportation of Gold Dredges in New Guinea"; and the premium of 40 guineas conjointly to Mr. J. L. Francis and Mr. John C. Allan for their paper on "Driving a Mines Drainage Tunnel in North Wales"; the William Frecheville Student's Prize of ten guineas to Mr. Gordon J. Williams for his paper on "The Genesis of the Perrunal-La Zarza Pyritic Orebody, Spain."

Nature reports that the prize of the Institute of Physics for the best paper published in the *Journal of Scientific Instruments* during the year 1932 has been awarded to Mr. E. Lancaster-Jones, of the Science Museum, for his paper on "The Principles and Practice of the Gravity Gradiometer," and the prize for the best contribution to the Laboratory and Workshop Notes in the *Journal* has been awarded to Dr. J. L. Miller and Mr. J. E. L. Robinson, of Messrs. Ferranti, Ltd., for their joint note entitled "A Three-Dimensional Adjustment of an Electrode in Vacuo."

SIR RONALD GRAHAM, the British Ambassador at Rome, presented Signor Mussolini on March 24 with the silver medal of merit conferred upon him by the Royal Society for the Prevention of Cruelty to Animals—the highest award in the gift of the society—in recognition of his recent action in making the Island of Capri a bird sanctuary.

OFFICERS of the New York Branch of the American Psychological Association were elected at the recent New Haven meeting as follows: *Honorary President,* Dr. J. McKeen Cattell; *Directors,* Dr. H. E. Garrett, Columbia University, and Dr. H. S. Langfeld, Princeton University.

OFFICERS of the Ray Society, London, were elected at the annual meeting held on March 22, as follows: *President,* Sir Sidney Harmer; *Treasurer,* Sir David Prain, and Dr. W. T. Calman, *Secretary.*

AT the annual meeting of the Physical Society, London, the following officers were elected: *President,* Professor A. O. Rankine; *Vice-president,* Professor W. Wilson; *Secretaries,* Dr. Allan Ferguson, Dr. Ezer Griffiths; *Foreign Secretary,* Professor O. W. Richardson; *Treasurer,* Mr. R. S. Whipple; *Librarian,* Dr. J. H. Brinkworth; new members of council, Professor E. V. Appleton, Dr. L. F. Bates and Dr. L. Hartshorn.

DR. PHILIP BARD, assistant professor of physiology at the Harvard Medical School, has been appointed professor of physiology at the School of Medicine of the Johns Hopkins University.

DR. ROBERT B. MACLEOD, formerly an honor student in psychology and philosophy at McGill University and winner in 1927 of the Moyse Traveling Scholarship in the Classics, has been appointed an assistant professor in psychology at Swarthmore College.

IN the Bell Telephone Laboratories, Vice-president H. P. Charlesworth has resigned to accept the position of assistant chief engineer of the American Telephone and Telegraph Company. Dr. E. H. Colpitts, who has been appointed to succeed him, is assistant vice-president of the American Telephone and Telegraph Company in charge of the Development and Research Department under Dr. F. B. Jewett, vice-president.

SENATORS Kendrick, Hayden, McNary and Carey are urging the retention of Dr. Elwood Mead as commissioner of reclamation under the new administration. The recommendation is based on Commissioner Mead's long service in various government departments in the interest of irrigation and drainage works. He has devoted nearly forty years to reclamation projects in the West. In 1924 he was appointed commissioner of the Reclamation Service by President Coolidge. Secretary of the Interior Harold L. Ickes is reported to have said that he would give the recommendation every consideration.

DR. EDWARD H. GRAHAM, assistant curator of botany at the Carnegie Museum, Pittsburgh, and Mrs. Graham, will leave on April 15 on a botanical collecting expedition of several months to the southeastern Uinta Mountains in the vicinity of Vernal, Utah, in order to obtain representatives of the spring flora and thus augment the collections made by the same party in the summer and fall of 1931.

DR. JOHN C. MERRIAM, president of the Carnegie Institution of Washington, was the chief speaker at the Jefferson Day exercises at the University of Virginia on April 13.

DR. A. V. KIDDER, chairman of the division of historical research of the Carnegie Institution of Washington, will give a lecture at the annual meeting of the American Philosophical Society on Friday evening, April 21, on "Mayan Explorations and Their Results."

DR. HARRY BOYER WEISER, professor of chemistry at the Rice Institute, gave the annual lecture of the Sigma Xi Club of the University of Alabama on March 30. His subject was "Colloidal Phenomena in the Formation of Gallstones."

THE Cutter Lectures on preventive medicine at the Harvard Medical School will be delivered on April 17 and 18, at 5 P. M., by Dr. Eugene L. Opie, professor of pathology in the Cornell University Medical College, on "The Epidemiology of Tuberculosis."

ROBERT FECHNER, vice-president of the Interna-

tional Association of Machinists and a lecturer on labor questions at Harvard University and Dartmouth College, has been appointed by President Roosevelt to be director under the unemployment reforestation act. Those present at the conference following which the appointment was made were Horace Albright, director of the National Park Service; John D. Coffman, fire control expert of the National Park Service; William G. Howard, director of lands and forests of the New York Conservation Department; R. Y. Stuart, chief United States forester; C. H. Granger, assistant chief forester; Colonel Duncan K. Major, Jr., of the general staff of the War Department, and W. Frank Parsons, of Chicago. This committee will direct the preliminary work and will have offices in the Interior Department.

THE Committee on Scientific Research of the American Medical Association has granted to Professor Ludwig A. Emge, associate professor at Stanford University, and his associates a grant to be used toward a study of the effect of pregnancy on tumor growth. This study forms part of a more extensive study on the behavior of benign tumor growth, which is now in its fifth year. A grant has also been made to Dr. Arthur Grollman, associate professor of pharmacology and experimental therapeutics at the Johns Hopkins University, to aid in work on the hormone of the adrenal cortex.

DR. T. WAYLAND VAUGHAN, director of the Scripps Institution of Oceanography of the University of California at La Jolla, and Mrs. Vaughan, have returned from a journey around the world, which started last August and has taken them as visitors to the principal oceanographic stations.

THE April lecture to the faculty and students of the School of Medicine, the George Washington University, on the Smith-Reed-Russell Society series was given by Dr. William H. Howell, chairman of the National Research Council. He spoke on the "Recollections of a Physiologist during the Past Half Century." The regular faculty seminar for April was given by Professor George B. Roth, of the department of pharmacology, who spoke on "The Arsphenamines: their Nature and Behavior."

THE scientific session of the American Heart Association will be held on Tuesday, June 13, from 9:30 A. M. to 5:30 P. M., in the Knickerbocker Hotel, Milwaukee, Wisconsin.

THE fourth annual Connecticut Valley Student Scientific Conference is meeting at Wesleyan University on Saturday, April 15. The conference is modeled after the meetings of the American Association for the Advancement of Science. The colleges represented are Amherst, Dartmouth, Mt. Holyoke, Smith, Massachusetts State, Connecticut State, Springfield, Trinity, Connecticut and Wesleyan. About seventy-five titles of papers or demonstrations appear on the program. It is expected that about three hundred students will attend. The conference is organized entirely by the graduate students and undergraduates of the colleges concerned.

APPLICATIONS for grants from the Cyrus M. Warren Fund of the American Academy of Arts and Sciences should be in the hands of the chairman of the committee, Professor James F. Norris, Massachusetts Institute of Technology, Cambridge, Mass., not later than May 15.

A DAVID ANDERSON-BERRY GOLD MEDAL, together with a sum of money amounting to about £100, will be awarded in July, 1935, by the Royal Society of Edinburgh to the person, who, in the opinion of the council, has recently produced the best work on the nature of x-rays in their therapeutical effect on human diseases.

ANNOUNCEMENT is made of a fellowship for graduate study at the medical faculty of the University of Geneva providing for tuition and a stipend of 3,000 Swiss francs (about $600) for the academic year, 1933–34. To be eligible, a candidate must be an American citizen, a graduate of an approved American medical school or the holder of a master's or doctor's degree in a science related to the medical field and must have a thorough knowledge of the French language. The fellowship will be administered by the Swiss American Student Exchange under the auspices of the Institute of International Education.

A HISTORICAL exhibit of maps, arranged by Dr. Erwin J. Raisz, is being shown at the Institute of Geographical Exploration, Harvard University. Many of the maps are originals, and come from the collections of Widener Library and Dr. Hamilton Rice. In addition to the maps, there are shown a number of old instruments connected with navigation and surveying, loaned by the Peabody Museum of Salem. The exhibit, open from 9:30 to 4:30 o'clock every day except Saturday and Sunday, will continue until May 1.

FREDERICK S. DELLENBAUGH, who was artist and one of the topographers with Major Powell in his second descent through the canyons of Green River and the Colorado, in 1871 and 1872, has presented the flag of Major Powell's boat, the *Emma Dean,* to the National Museum in Washington. The flag was made in Salt Lake City in 1871 by Major Powell's sister, Mrs. Ellen Powell Thompson. Major Powell's boat

was named after his wife. There were two other boats, the *Nellie Powell,* named after Mrs. Thompson, and the *Cañonita.*

THE Bureau of Ethnology has received the first report of the field activities of the party undertaking archeological reconnaissance in the eastern section of Honduras, made up of Dr. W. D. Strong, of the bureau staff, Alan W. Payne, and Norman Haskell. The report states that on February 10 the party left Puerto Castilla, proceeded to the mouth of the Patuca River, and went upstream. Studies were undertaken on the Guampu and Cuyamel Rivers, tributary to the

Patuca. Two archeological sites marked by the presence of earth mounds were studied and excavated. The few remaining Sumu Indians were encountered, and a brief study was made of them. The conclusion was reached that the Maya culture did not extend that far to the eastward, as nothing indicative of this culture was found. The party learned that several hundred Sumus had been living on the river until four years ago, when an epidemic of smallpox swept them away. The next trip to be made will be from the westward of the Patuca Valley overland *via* muleback into the mountain region.

DISCUSSION

A CIVILIZATION WITHOUT NATIVE MATHEMATICS

IN a recent number of the historical periodical entitled "Quellen und Studien zur Geschichte der Mathematik, Astronomie und Physik," volume 2 (1932), page 255, there appears an article by P. L. van Hee, in which it is stated that if the Chinese mathematical books of every epoch would disappear science would suffer no loss as regards mathematics. It is claimed here that China has contributed nothing towards raising the edifice of modern mathematics, but that the mathematics which appears now in the Chinese literature is due to other nations and was often credited by Chinese writers to natives of their own country. Among the recent writers who are said to have been misled by these false claims is Y. Mikami, whose work entitled "The Development of Mathematics in China and Japan," 1913, is widely known and has been frequently referred to as an authority.

There is a remarkable contrast between the recent historical developments relating to China and those relating to Egypt and Babylonia. In the former case these developments seem to tend to show that their early mathematical attainments were overestimated, while in the latter they were underestimated, especially as regards Babylonia. In particular, the issue of the periodical noted above contains also the remarkable announcement that the ancient Babylonians had a rule equivalent to a general formula for the sum of the squares of the first n natural numbers. It was formerly supposed that the first discovery of such a rule was due to the ancient Greek mathematicians. A few years ago it was announced that the ancient Egyptians had a rule which is equivalent to our modern formula for the area of a sphere, but this seems now to be incorrect, having been due to a mistranslation.

The chief interest in the article to which we referred at the beginning of this note is due to the fact that it exhibits a lack of mathematical initiative on the part of the Chinese extending over a long period of time. When mathematics was introduced from other

countries it received considerable attention and some of it was permanently retained, but no definite evidences of native advances seem as yet to have been established. The exaggerated claims made by some of the Chinese writers have really been harmful to the reputation of their country and they have made it difficult to form a correct judgment as regards their possible contributions It seems clear, however, that from the standpoint of mathematics ancient China was far behind ancient Egypt and ancient Babylonia. Their ancient as well as their modern civilization exhibits unusual mathematical weakness and many of the references to their achievements along this line are untrustworthy according to some of the most recent investigations.

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THEORIES OF CORTICO–ADRENAL FUNCTION

WITHIN the past year three theories of cortico-adrenal function have been advanced. They postulate that the adrenal cortex (1) prepotently regulates carbohydrate metabolism,[1] (2) produces a general tissue hormone,[2] (3) controls the circulating blood volume.[3] The first appeared about a year ago, the second shortly after, and the third in January of this year.

In presenting their theory of blood-volume regulation and the relation of the adrenals to shock, Swingle and his associates ride rough-shod over other hypotheses. "None," they state, "have materially advanced (*sic*) the problem of cortical function." Not even a foot-line was given to bibliographic mention of the earlier theories mentioned above.

It is not *in justitia scientiae* merely that mention should be made of the praiseworthy contributions of

[1] S. W. Britton and H. Silvette, *Amer. Jour. Physiol.,* 100: 701, 1932.
[2] F. A. Hartman, K. A. Brownell and J. E. Lockwood, *Endocrinology,* 16: 521, 1932; *Amer. Jour. Physiol.,* 101: 50, 1932.
[3] W. W. Swingle, *et al.,* SCIENCE, 77: 58, 1933.