The official delegates representing Great Britain at the conference will be G. S. Callendar and A. C. G. Egerton, of the University of Oxford, and H. L. Guy, chief engineer of the Mechanical Engineering Department of Metropolitan-Vickers Electrical Company, Manchester. The German delegates will be Professor Dr.-Ing. W. Hausen, Technische Hochschule, Munich; Professor Dr.-Ing. F. Henning, Physikalisch Technisch Reichsanstalt, Charlottenburg; Dr.-Ing. W. Koch, Technische Hochschule, Munich; Dr.-Ing. E. Michel, Swarthmore, Pa., and Professor Dr.-Ing. E. Schmidt, Technische Hochschule, Danzig-Langfuhr.

Geo. A. Orrok, of New York, is chairman of the committee in charge of the arrangements for the conference, and Alex Dow, president, Detroit Edison Company, is chairman of the American Society of Mechanical Engineers' Special Research Committee on the Thermal Properties of Steam.

VISITING ASTRONOMERS AT THE MOUNT WILSON OBSERVATORY

The Christian Science Monitor publishes a statement concerning astronomers from other observatories who have been working at the Mount Wilson Observatory of the Carnegie Institution during the present summer. As corrected for SCIENCE at the observatory this list reads:

Dr. Joel Stebbins, of the University of Wisconsin, with a photoelectric cell, observed stars in the region of the Milky Way to find whether their coloring is due to dust clouds in interstellar space.

Using a lens of his own design and the 10-inch telescope, Dr. F. E. Ross, of the Yerkes Observatory, University of Chicago, photographed the Milky Way in sections. Later he will piece his photographs together in a map.

Dr. Fred E. Wright, geophysicist of the Carnegie Institution, Washington, was engaged in making a globular photographic map of the moon.

Dr. John C. Duncan, of Wellesley College, photographed nebulae.

Dr. Samuel A. Mitchell, University of Virginia, observed the faint variable stars and compared them with the neighboring ordinary stars.

Dr. J. C. Boyce, the Massachusetts Institute of Technology, investigated elements known to be present in the sun and stars and searched for others.

Dr. Charles G. Abbot and L. B. Aldrich, of the Smithsonian Institution, made measurements of the sun's radiation and of the energy of some of the hotter stars.

Dr. Oliver J. Lee, Northwestern University, made observations of the spectra of stars.

Dr. C. M. Huffer, University of Wisconsin, made studies with the photoelectric cell.

Dr. and Mrs. Gaposchin, astronomers of Harvard University, studied the spectra of novae, stars which suddenly flare to great brilliance.

SCIENTIFIC NOTES AND NEWS

DR. ALBERT T. POFFENBERGER, professor of psychology and executive head of the department of psychology at Columbia University, was elected president of the American Psychological Association at the meeting held in New York from September 5 to 8. Dr. J. E. Anderson, of the University of Minnesota, and Dr. E. S. Robinson, of Yale University, were elected directors.

PROFESSOR EMIL ABDERHALDEN, director of the Physiological Institute of the University at Halle, has been elected a corresponding foreign member of the Vienna Academy of Sciences.

THE Guyot Prize for the best work in otology during the last five years has been awarded to Professor F. R. Nager, of Zurich, and to Professor Max Meyer, of Wurzburg.

THE new amphitheater of the New York State Fair has been named in honor of Henry Hiram Wing, for forty years professor of animal husbandry at Cornell University, in recognition of the distinguished service which he for many years gave to the dairy industry and the science of animal husbandry. At the ceremony of dedication, which took place on September 4, Owen D. Young made the presentation address and Dr. Frank P. Graves, president of the University of the State of New York, who was master of ceremonies, unveiled a bronze plaque commemorating the occasion. Professor Wing spoke in acknowledgment.

ASSOCIATE CURATOR PAUL C. STANDLEY, of the department of botany of the Field Museum, Chicago, has been invited to act as vice-president of the section for taxonomy and nomenclature of the sixth International Botanical Congress, to be held at Amsterdam in September, 1935.

FOR the fourth consecutive year, Dr. Henry L. Banzhaf, dean of the Marquette University Dental School, has been chosen president of the Dental Educational Council of America. Dr. Banzhaf is a past president of the American Dental Association.

THE Earl of Malmesbury has been elected president of the Health Congress of the Royal Sanitary Institute, which is to be held at Bournemouth, England, from July 15 to 20, 1935.

THE retirement is announced of Professor Horatio Scott Carslaw, for thirty-two years professor of pure and applied mathematics at the University of Sydney.

DR. VERNON C. DAVID, since 1929 clinical professor

of surgery, Rush Medical College, Chicago, has been appointed chairman of the department, succeeding Dr. Arthur Dean Bevan, who joined the faculty as professor of anatomy in 1888.

DR. FRED R. GRIFFITH, JR., professor of physiology at the University of Buffalo School of Medicine, has been appointed head of the department to succeed Dr. Frank A. Hartman, who recently resigned to become professor of physiology at the Ohio State University College of Medicine.

ROY W. CARLSON, research engineer of the University of California, has been appointed assistant professor at the Massachusetts Institute of Technology. Mr. Carlson, as head of the testing department of the Los Angeles County flood control district from 1927 to 1931, conducted research for materials in flood control structures.

SIR GEORGE NEWMAN, chief medical officer of the British Ministry of Health and of the British Board of Education, has been renominated as a member of the British General Medical Council for five years from October 9.

DR. GASTON RAMON, assistant director of the Institut Pasteur, has been nominated a member of the Superior Council of Public Health of France, in succession to the late Professor Calmette.

DR. E. P. PHILLIPS, of the National Herbarium, Pretoria, South Africa, under grants from the Carnegie Corporation and from certain South African organizations, is making a study of the botanical institutions of the United States.

DR. CHARLES BAEHNI, assistant at the Botanical Garden of Geneva, Switzerland, is now at the Field Museum of Natural History, Chicago, where he plans to spend a year in botanical research.

PROFESSOR Y. YAMAMOTO, of the Taihoku Imperial University, Taihoku, Formosa, is spending the summer months at the New York Botanical Garden studying specimens from the Augustine Henry collection of Formosan plants. This collection, made during the latter part of the nineteenth century, is the one on which the first enumeration of Formosan plants, published in 1896, was based.

THIS summer a number of teachers and advanced students have been working in the Yellowstone National Park on problems of geology, botany and zoology. These include: Arthur Howard, geology, New York University; Dr. John T. Rouse, geology, Hamilton College; Professor John W. Scott, zoology, University of Wyoming; Professor Aven Nelson, botany, University of Wyoming; Dr. C. W. Wilson, geology, Vanderbilt University; Dr. C. N. Fenner, geology, Carnegie Institution of Washington. This fall special studies on the trumpeter swan and Rocky Mountain bighorn will be undertaken by Dr. Harlow B. Mills and Wm. E. Kearns, of the Naturalist Department.

DR. L. W. HACKETT, assistant director of the International Health Division of the Rockefeller Foundation and at present engaged in malaria research in southern Europe, has been invited by the University of London to give the Heath Clark Lectures for the year 1934. The lectures will be given during the second week in December on the subject, "Malaria in Europe."

THE Harveian Oration will be delivered on October 18, before the Royal College of Physicians of London, by Dr. James Collier, whose subject will be "Inventions, and the Outlook in Neurology."

THE new research laboratories of Messrs. Eli Lilly and Company, Indianapolis, will be formally opened with appropriate ceremonies on October 11. Sir Henry Dale will deliver the main address at the afternoon session. Sir Frederick Banting and Dr. Irving Langmuir will also speak. At the dinner in the evening, addresses will be made by Sir Henry Dale, Dr. Elliott P. Joslin, Dr. George R. Minot, Dr. Frank R. Lillie, Dr. Charles R. Stockard, Dr. George H. Whipple, Dr. Carl Voegtlin and Dr. G. H. A. Clowes, director of the Research Laboratories.

THE fourth congress of the Latin Oto-rhino-laryngological Society will be held at Brussels from September 20 to 25 under the presidency of Dr. Edmond Buys, of the faculty of medicine and surgery at the University of Turin.

THE *Journal* of the American Medical Association reports that the ninth International Congress of the Far Eastern Association of Tropical Medicine will be held in Nanking, China, from October 1 to 7. This congress was originally set for October, 1933. Various sections will hold meetings on aspects of tropical disease, with special attention to cholera, leprosy, yellow fever, plague and malaria. The secretary of the congress is Dr. P. Z. King, Wei Sheng Shu, Nanking.

APPLICATIONS for the position of associate chemist (insecticides), Bureau of Entomology and Plant Quarantine, Department of Agriculture, must be on file with the U. S. Civil Service Commission at Washington, D. C., not later than October 4. The entrance salary is $3,200 a year, subject to the usual deductions. Competitors will not be required to report for examination at any place, but will be rated on their education and experience.

THE South Carolina State Department of Health began a survey of hookworm in the state on September 1, under the direction of Dr. James A. Hayne,

state health officer, and Dr. Benjamin F. Wyman, Columbia, director of rural sanitation. Dr. Alvin E. Keller, professor of preventive medicine and public health, Vanderbilt University School of Medicine, will assist in the survey and corrective campaign. Every county in which the disease is prevalent will be visited and the results checked with a survey made by the Rockefeller Foundation in 1914.

SATURDAY afternoon lectures at the New York Botanical Garden for September, October and November will be held at 3:30 in the lecture hall of the museum building, the first beginning on September 8. The program follows: "Rambles in Hawaiian Mountains," Otto Degener, New York Botanical Garden; "Autumn Wild Flowers," Dr. John Hendley Barnhart, bibliographer and administrative assistant; "A Tour of the National Parks," Dr. Harold N. Moldenke, assistant curator; "Dahlias," Dr. Marshall A. Howe, assistant director; "Where Our Food Plants Come From," Dr. Elmer D. Merrill, director; "Autumn Coloration," Dr. A. B. Stout, director of the laboratories; "Bacteria in Relation to Diseases of Plants and Animals," Dr. F. D. Chester, New York Botanical Garden; "Australia," Dr. Forman T. McLean, supervisor of public education; "A Winter in Bermuda," Dr. Fred J. Seaver, curator; "Travels through Ontario," Dr. S. M. Pady, National Research Council fellow, New York Botanical Garden; "Plant Hunting in the Southern Appalachians," Mr. E. J. Alexander, assistant curator and curator of the local herbarium; "Hybridizing the Mold Fungi," Dr. B. O. Dodge, plant pathologist.

BY the will of the late John W. Hamilton, Mount Union College, Ohio, will ultimately receive $200,000 for establishing "the Jay Brown Hamilton School of All Sciences."

THE private chemical library of the late William Hoskins, chemist and inventor, has been acquired by the Museum of Science and Industry, Chicago. The data included in it are of a historical nature. The collection numbers several thousand items, including books, periodicals, pamphlets and slides. Dr. Hoskins made contributions to the development of resistance wire, now generally used in heating devices, as well as developments in chemical safety paper, luminous paints and chlorine recovery of gold.

A CORRESPONDENT of the London *Times* reports that a much needed extension of the department of chemistry at the University of Birmingham will be made possible by a gift of investments valued at £45,000 by Mr. Albert Edward Hills, a retired tube manufacturer. His intention in making the gift is to assist in the higher education of those who will be engaged in Midland industrial circles. A new chemistry block is to be erected, Mr. Hills making this stipulation because the existing premises are too cramped; a good deal of the present work is inconveniently carried on in huts. An increasing number of students is being trained in chemistry. In addition the post-graduate school provides facilities for thirty workers in research.

ACCORDING to *Museum News,* the Utah State Museum Association, Salt Lake City, has recently been organized to promote the establishment of a new state museum on the grounds of the capitol. A concrete building in the Mayan style is planned with two floors and mezzanine. The ground floor would cover a space 276 by 297 feet. The nucleus of these latter exhibits will be provided for by private collections, notably that of Charles N. Strevell, already offered to the museum.

ACCORDING to *Museum News,* Griffith Observatory, in Griffith Park, Los Angeles, with the third full-sized Zeiss planetarium to be erected in the United States, is nearly ready for opening to the public. The building, of reinforced concrete, contains the planetarium room with seating capacity of five hundred, provision for a 12-inch telescope and a coelostat, and space for exhibits of astronomy and other sciences such as geology, seismology, meteorology and oceanography. The main foyer of the entrance of the building is occupied by a Foucault free-swinging pendulum, which demonstrates the rotation of the earth by the change in its course. A gallery to the south of the entrance contains a model of a portion of the Moon's surface with a traveling light to produce the effect of sunlight on the face of the moon. Behind this gallery is the dome of the planetarium, 75 feet in diameter, sheathed in copper. On each side of the entrance, wings to the east and west provide space for the science exhibits and terminate in the two revolving domes, also copper covered, for the telescope on the east and the coelostat on the west. A seismograph and other scientific instruments are included in the plans for additional installations. The observatory has been constructed and equipped with funds bequeathed by Colonel Griffith J. Griffith. When it is complete and all exhibits installed it will be turned over by the trustee, the Security First National Trust and Savings Bank, to the City of Los Angeles and will be conducted by the Department of Parks.

THE London *Times* reports that the schooner *Penola* in which the British Graham Land Expedition is about to set out for the Antarctic, arrived recently in London, to be loaded with scientific apparatus and with provisions for three years. It was expected to sail on September 5. The *Penola* has been reconditioned and strengthened in readiness for the voyage. She will not sail with her full load, because the expedition's

aeroplane and a quantity of stores have already been sent out to the Falkland Islands. The expedition is setting out with the object of exploring territory between Luitpold Land and Charcot Land, and will fix its base on the west coast of South Graham Land, as far south as the ice permits.

DISCUSSION

REFORM IN THE SYSTEM OF SCIENTIFIC PUBLICATION

THE appearance of the letter from Dr. Atherton Seidell (SCIENCE, July 20, 1934, p. 70) on "Reforms in Chemical Publication," outlining the plan of Mr. Watson Davis for an improved method of recording and distributing the results of scientific research, prompts me to publish a résumé of a plan which I have discussed with several scientists during the past three years. Some of the points in the plan result from recent experiences with lithoprinting as a means of reproduction for text-book and other material. The following statement written a year ago sets forth some of the many reasons for a change in our system of publication and preservation, and briefly indicates another type of system which it appears would obviate most if not all of our present difficulties. It is to be noted that the plan suggested by Mr. Davis is similar in purpose to that outlined below and that the methods are only slightly different. It appears somewhat significant that independent approach to the problem has led at least two persons to virtually identical conclusions concerning the method of choice in the eventual solution of the problem.

The problem of providing means for the dissemination of scientific information has become more acute with the increase in the number of scientific investigators. It is becoming increasingly difficult for the journals which propose to publish the results of original research to function adequately. In America alone the number of persons who devote themselves so largely to scientific work as to require mention in Cattell's "American Men of Science" has increased fivefold from 1906 to 1933. To those acquainted with scientific work it is apparent that this increase in number of workers has resulted in at least a corresponding increase in the volume of scientific work needing publication.

The present "journal method" of publication had its origin in a local institutional, or even departmental, organ of publication. There was a character to a journal arising in a particular department given to it by its head, who was at once editor and chief contributor. The use of widely distributed periodicals for publishing scholarly work in full has appealed to the natural scientist apparently more than it has to philosophers and social scientists, who have long used the monograph system for their original contributions. It may be that scientists have been willing to condense their material and omit the majority of its detail in a way that other scholars have been unwilling or unable to do. It is a fact, however, that there arrives a point in the process of condensation and elimination beyond which one can not go without sacrificing the clarity and completeness of evidence.

It seems that this point has been reached in the requirements which editors of scientific journals are now forced to impose upon their contributors in order that the whole volume of results of current research may be reported in some manner.

The problem of scientific publication is becoming exceedingly acute from another angle, namely, that of the cost of providing working libraries in centers of scientific research. With the increase in volume of published material, the great majority of research libraries have been unable to keep up more than the pretense of maintaining complete files of all relevant periodicals. A survey of subscription lists in the United States shows that there are many periodicals in special fields for which there are only two or three subscriptions in the entire country. Even in the case of some of the most important periodicals in certain specializd fields, such as hematology, there are only ten subscriptions in the entire country. This condition is deplorable because it implies that a great many investigators must be without ready access to literature of primary importance to their own problems. It is, in all likelihood, a contributing factor to a lack of familiarity with important literature which is often evident in scientific papers. The notion that any reasonable number of libraries can at present hope to maintain a complete file of all relevant publications is a myth, which it seems should be dissipated as soon as possible.

The solution of the problem is of great importance, even if it is not simple. An increase in the number of periodicals or in the volume of those already in existence would accommodate the increased volume of publication, but it would do nothing to lighten the load on the libraries or on the investigator himself who finds it increasingly difficult to read the entire volume of original material in his own field.

There are three major objectives in any permanent solution of the publication problem. The first, and most important, is provision for full and adequate presentation of all aspects of the problem, including a reasonable historical introduction, a reproducible description of all methods of observation and a full presentation of experimental results and deductions.