gineer, New York, N. Y., for paper appearing in June, 1942, issue of *Civil Engineering* entitled "Evolution of Tremie-Placed Concrete Dry Docks."

The Daniel W. Mead Prize to Alfred C. Ingersoll, research engineer, The Linde Air Products Company, Tonawanda, N. Y., for the best paper submitted by a student on "Ethical Standards and How Best They Can Be Developed."

THE AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS

THE national technical meeting of the American Institute of Electrical Engineers will be held in the Engineering Societies Building from January 25 to 29.

According to a statement made by Floyd A. Lewis, acting editor of *Electrical Engineering,* emphasis at this year's meeting will be on war problems. Several of the technical sessions and conferences will concern conservation of critical materials through more efficient utilization of such materials as are used on electrical systems. In addition to the twenty-one technical sessions, sub-sessions and conferences, there will be a general session on Wednesday morning, January 27, devoted to engineering man power in the war effort. Also at this session, which will be presided over by the president of the institute, H. S. Osborne of New York, the Alfred Noble Prize will be presented to George W. Dunlap.

Another feature of the meeting will be the presentation of three engineering awards at a special session held on Thursday evening. The Edison Medal, highest award of the institute, will be presented to Major Edwin H. Armstrong, professor of electrical engineering, Columbia University, who has contributed so much to radio. The John Fritz Medal, awarded jointly by a group of national engineering societies including the institute, will be presented to Dr. Willis R. Whitney, vice-president in charge of research of the General Electric Company, Schenectady, N. Y. The Hoover Medal, also a joint award, will be presented to Dr. Gerard Swope, president of the General Electric Company, New York, N. Y. Following the medal-presentation ceremonies, Dr. George C. Southworth, of the Bell Telephone Laboratories, will deliver an address entitled "Ultrahigh Frequencies." This should be of especial interest in view of the wide application of ultrahigh frequencies or so-called "microwaves," in the present war.

The American Institute of Electrical Engineers has the largest membership of any of the leading national engineering societies, numbering 19,916; there are 72 local sections in major North American cities, and 124 student branches in engineering schools. The winter national technical meeting is one of three national and several regional meetings held each year for the purpose of reviewing and discussing important technical and related developments. Emphasis at all these meetings for the current year is on war problems. Registered attendance at recent winter meetings has exceeded 1,600, and there is every reason to believe that the attendance this year will be up to its usual standard.

CANCELLATION OF THE ANNUAL MEETING OF THE AMERICAN PHYSIOLOGICAL SOCIETY

THE American Physiological Society has issued the following statement:

For the first time in the history of our society it has seemed wise to cancel the annual meeting. Action in this direction was first taken by the executive committee of the federation, which voted 11 to 2 in favor of cancellation of the meeting of the federation to be held in Cleveland from April 6 to 10. On referring this matter to the individual councils of the several societies, the action was ratified by a majority of each of the separate councils. Our own council further voted (5 to 2) not to hold an annual meeting independently of the federation.

The chief reasons given for this decision were (1) the difficulty of transportation and the request by Mr. Eastman, Coordinator of Defense Transportation, "that conventions should not be held unless they are related to the war effort." (2) The advice of the Science Advisory Committee of the National Resources Planning Board "that meetings not closely connected with the war effort should be postponed" and the suggestion "that some large associations may find it advantageous to organize their annual meeting in regional gatherings rather than in a single meeting in one place." (3) The difficulty of making our meeting a material contribution to the war effort because of (a) confidential nature of much if not most of the research work being carried on by our members, (b) preoccupation of potential speakers with other more essential war work, and (c) added teaching burdens in all our laboratories.

SCIENTIFIC NOTES AND NEWS

DR. PERRIN H. LONG, professor of preventive medicine at the Johns Hopkins Medical School, has received the award of the Southern Medical Association for original work by one of its members. The award was made in recognition of his studies on the sulfonamides.

THE Octave Chanute Award of the Institute of Aeronautical Sciences has been made to A. Lewis MacClain, aircraft engine test pilot and engineer of the Pratt and Whitney Aircraft Division, of the United Aircraft Corporation, East Hartford, Conn., in recognition of the development of the engine torque

indicator, which measures brake horsepower, a practical device for accurately measuring the power output of a plane engine during flight. Presentation of the award will be made at the honors night dinner of the institute on January 26.

DR. JOHN R. MOHLER, chief of the United States Bureau of Animal Industry, was the recipient of an alumni award of merit at the Founders Day ceremonies on January 16 of the University of Pennsylvania.

DR. DONALD D. VAN SLYKE, member of the Rockefeller Institute for Medical Research, New York, has been elected an honorary member of the British Physiological Society.

DR. R. G. HOSKINS, of the Harvard Medical School, has been elected an honorary member of the Asociación Médica Argentina.

DR. JOHN R. LEWIS, professor of chemistry in the University of Utah, has become professor and head of the department of metallurgy. Dr. Lloyd E. Malm, associate professor of chemistry in the Utah State Agricultural College, at Logan, has been appointed associate professor of chemistry at the university.

THE *Journal* of the American Medical Association reports that Dr. Evelyn B. Tilden, of the Rockefeller Institute for Medical Research, has been appointed associate professor of bacteriology at the Medical School of Northwestern University.

OFFICERS of the Genetics Society of America elected for the year 1943 are: Professor Marcus M. Rhoades, Columbia University, *President;* and Professor G. W. Beadle, Stanford University, *Vice-president.* The executive committee for 1943 is composed of these two officers together with Professor Th. Dobzhansky, Columbia University, and Professor E. W. Lindstrom, Iowa State College, presidents for 1941 and 1942, and Dr. B. P. Kaufmann, Carnegie Institution, Cold Spring Harbor, N. Y., *Secretary-treasurer.*

AT the meeting of the Rittenhouse Astronomical Society on January 8, Armand N. Spitz was installed as president. Dr. Charles P. Olivier, director of the Flower and Cook Observatories of the University of Pennsylvania, delivered the address of the retiring president. His subject was "Observational Practice for Variable Stars."

AT the seventy-fourth annual meeting on January 11 of the Board of Trustees of the American Museum of Natural History, Colonel F. Trubee Davison was reelected president of the museum. Other reelections were A. Perry Osborn, *First vice-president;* Cleveland E. Dodge, *Second vice-president;* E. Roland Harriman, *Treasurer,* and Clarence L. Hay, *Secretary.* Colonel Davison is on active military service, and Mr. Osborn will continue as acting president. It was announced at the meeting that after the war the museum building at Central Park West and 79th Street will be modernized completely, both externally and internally.

THE Board of Trustees of the Carnegie Institution of Washington at their recent annual meeting elected Henning W. Prentis, Jr., president of the Armstrong Cork Company, Lancaster, Pa., a member of the board to fill the vacancy created by the death of Dr. Stewart Paton.

DR. EDWARD DAVENS, Baltimore, pediatric consultant to the Maryland State Department of Health, has been appointed chief of the Bureau of Child Hygiene to succeed Dr. James H. M. Knox. The appointment will take effect on September 1.

DR. J. S. SWEARINGEN, professor of chemical engineering at the University of Texas, has leave of absence to join the Office of Scientific Research and Development.

PROFESSOR EMERITUS W. W. CHARTERS, of the Ohio State University, formerly director of the Bureau of Educational Research, has become chief of the training division of the War Manpower Commission.

AUSTIN W. CURTIS, JR., for eight years assistant to the late Dr. George Washington Carver, of the Tuskegee Institute, has been appointed his successor.

SIR JOHN C. G. LEDINGHAM, F.R.S., will retire on March 31 from the post of director of the Lister Institute of Preventive Medicine, London, which he has held since 1930. His successor will be Dr. A. N. Drury, F.R.S., Huddersfield lecturer in special pathology at the University of Cambridge, a member of the scientific staff of the Medical Research Council.

THOMAS E. MILLIMAN has resigned as chief of the agricultural-chemicals unit of the War Production Board and is returning to the Grange League Federation Exchange. His headquarters will be at Ithaca, N. Y., where he will be in charge of fertilizers and agricultural chemicals. Dale C. Keiffer, of Bethesda, Md., has been named acting chief of the unit.

DR. JOHN S. KARLING, professor of botany at Columbia University, a former director of the chicle research work of the Tropical Plant Research Foundation, has been granted leave of absence for the duration of the war to become botanical specialist in latex-bearing plants for the Department of Rubber Exploration of the American Republics Aviation. He will be associated with Dr. G. H. H. Tate, formerly of the American Museum of Natural History, in exploring the little known tributaries of the Tapajoz and Madeira Rivers in Brazil for untapped sources of wild rubber.

CLINTON G. ABBOTT, director of the Natural History Museum, San Diego, Calif., has been made a member of a Guayule Committee for the region of San Diego, to investigate possibilities of guayule cultivation, seed-collecting, planting, harvesting and suitable acreages.

DR. G. H. PARKER, Harvard University, lectured before the Royal Canadian Institute, Toronto, on January 9, on "The Coloration of Animals and their Ability to Change their Tints." He also spoke before the department of zoology of the University of Toronto "On the Cultivation of the Research Spirit."

DR. HOMER W. SMITH, professor of physiology and director of the Physiological Laboratories of the New York University College of Medicine, gave the William Henry Welch Lectures of the Mount Sinai Hospital of New York on January 5 and 12. He spoke on "The Physiology of the Kidney."

SIR STAFFORD CRIPPS, Julian Huxley and R. A. Watson-Watt will participate this week in a transatlantic short-wave discussion with Americans on the "Answering You" program of the British Broadcasting Corporation. The Americans, consisting of Watson Davis, Gerald Wendt and Samuel Kaiser, will question the British on the contributions of science to the war effort. The program may be heard over WNYC in New York on Sunday, January 24, at 5:30 P.M., and elsewhere over the Mutual network.

THE forty-fifth annual meeting of the Washington Academy of Science was held on January 21. Following the annual meeting, there was held the three hundred and sixteenth meeting of the academy with the following program: "Reports on Governmental Publication of Scientific Research" by Atherton Seidell, for the U. S. Public Health Service; by Melvin C. Merrill, for the U. S. Department of Agriculture, and by Kasson S. Gibson, for the National Bureau of Standards. "The Censorship of Scientific Publications Going Abroad" was described by Edward D. Hill, of the U. S. Board of Economic Warfare.

THE meetings of the Association for the Study of Internal Secretions, tentatively scheduled to be held in Cleveland, Ohio, on April 5 and 6, have been indefinitely postponed.

IN order to stimulate the investigation of cyclic phenomena the Foundation for the Study of Cycles, 400 West 118th St., New York, N. Y., will award a medal for the best work published on that subject in any field of science during 1943. The judges who will award the medal are: Dr. C. G. Abbot, secretary of the Smithsonian Institution, Washington, D. C.; Dr. Harold E. Anthony, dean of the scientific staff, American Museum of Natural History, New York; Professor W. C. Mitchell, Columbia University, director of the National Bureau of Economic Research; Professor V. C. Wynne-Edwards, biologist, McGill University, and Professor Ellsworth Huntington, geographer, Yale University, *chairman*.

APPLICATIONS to the Committee for Research in Problems of Sex of the National Research Council, for financial aid during the fiscal year beginning on July 1, in support of work on fundamental problems of sex and reproduction, should be received before April 1. They may be addressed to the Chairman, Dr. Robert M. Yerkes, Yale School of Medicine, New Haven, Conn. Although hormonal investigations continue to command the interest and support of the committee, preference, in accordance with current policy, will ordinarily be given to proposals for the investigation of neurological, psychobiological and behavioral problems of sex and reproduction.

COLUMBIA UNIVERSITY has announced gifts amounting to over $200,000. Among these the Josiah Macy Jr. Foundation contributed $150,000, to support a program of research and teaching in tropical medicine at the Medical Center over a five-year period. The Lillia Babbitt Hyde Foundation gave $20,000 to the radiological research laboratory, and Schering and Glatz, Inc., $10,000 for research projects in the department of bacteriology.

ANNOUNCEMENT is made of the establishment by the Gulf Oil Corporation of a fellowship in geology at the University of Chicago. The first award of this fellowship will be made for the school year 1943–44, provided qualified candidates are available under war conditions. The stipend will approximate $1,200 a year, the Gulf Corporation contributing $900 and the university making available additional funds or allowances equivalent to the tuition requirements, namely, $300. The initial award will be in the field of sedimentation, and candidates must have had the equivalent of at least a year of graduate work in geology at an institution of recognized standing. The fellowship holder will be expected to devote part of his time to research in sedimentation. The fellowship may be renewed on recommendation of the department. Renewal at the end of nine months, rather than at the end of a twelve-month period is possible if the fellow works under an accelerated program. Application forms may be obtained from the Department of Geology, University of Chicago, and must be returned to the university before March 1. The award will be announced on April 1.

A FOUR-TERM program in forestry, which could be completed in a year and three months under the accelerated program now in effect, is being planned by the School of Forestry and Conservation of the University of Michigan, of which Samuel T. Dana is

dean. Both the War Manpower Commission and Selective Service headquarters have recognized forestry, lumbering and logging as essential activities, and the new program is designed to train men for effective work in those branches of industry in which forestry and forest products are involved. Another objective is to train men so that they may qualify as officer material as quickly as possible after entering the armed forces, especially in forest regiments, engineering units, field artillery and infantry.

DISCUSSION

AGAR-BEARING SEAWEEDS AT LA JOLLA, CALIFORNIA[1]

THE use of red seaweeds as a source of jellies began and developed in the Far East. Nine tenths of the world's agar is produced in Japan by a purely cottage industry, while on the shores of China, Malaya, the East Indies and Ceylon, there is manufactured by native methods a jelly which, if dried, would be the agar of commerce. Of about thirty species of red algae which are recorded as agariferous, only four are used outside of the regions named. It is possible that on the southern and eastern shores of Asia all profitable sources of agar have already been found, but on the other coasts of the world there probably exist considerable resources of this kind which have never been developed. The prospect of competition with cheap Japanese agar has prevented large-scale investment in exploratory and developmental processes. In Russia, with government protection, there is a modern agar industry of less than ten years' standing, utilizing two species of seaweeds, *Ahnfeltia plicata* on the Maritime coast and in the White Sea and *Phyllophora rubens* in the Black Sea. In this country, repeated efforts during the last twenty years have finally established a modern manufacture utilizing *Gelidium cartilagineum* and *Gracilaria confervoides* collected on the coasts of southern California and Lower California.

With Oriental supplies of agar cut off, attention in this country has been turned to agar substitutes and the reclamation of agar, as recent notes in this journal testify. Believing with Humm[2] that, in addition, considerable domestic resources exist, both as unlocated beds of *Gelidium* and *Gracilaria* and as beds of red algae whose agar-producing potentialities have never been recognized, the authors have examined and tested several red algae growing at La Jolla in harvestable quantities. Restrictions on the use of boats at sea have delayed the extensive survey which the situation demands and limited us to collecting at low tide and by swimming and diving in shallow water. About two miles of exposed rocky shoreline have been covered and considerable quantities of agariferous seaweeds located.

The seaweeds were drained and weighed, freed of sand, shells and conspicuous contaminating species while being washed in tap water, dried in the sun and weighed again. Bleaching was not attempted. Fifty gram lots of dried material were weighed out and soaked in tap water for twenty-four hours except where otherwise noted. Each lot was drained and put into one liter of tap water. Sulfuric acid or sodium hydroxide was added to adjust the solution to pH 6.0, 8.0, 10.0 or 12.0, except as otherwise noted and the material cooked for twenty-four hours in a water bath. Distilled water was added periodically to replace evaporation losses. Every two hours a 25 ml sample was removed and cooled to 23°–25°. The strength of the jelly (if a jelly was formed) was measured with a Lipowitz meter as described by Kizevetter[3] in which a segment of a sphere of stated dimensions is driven through the surface of the jelly by weights. The pH was measured and, when necessary, acid or alkali was added to the parent lot to maintain the pH at the value fixed on initially. The cooled sample was stirred back into the parent lot. At the end of the single extraction a 100 gram sample was filtered through two layers of cheesecloth, cooled, frozen, chopped, thawed at room temperature, drained and air dried on a glass plate. The dried agar was weighed, and a 1 per cent. jelly was made from part of it for a strength test.

Six species were readily collected in sufficient quantities to test. *Gelidium cartilagineum* grows below the low tide mark and is collected commercially by divers working as deep as ten fathoms. However, fronds 50–75 cm long can be collected in quantity just below lower low tide. *Pterocladia sp.* grows low in the intertidal zone, the 12–18 cm fronds thickly covering exposed rocks. *Endocladia muricata,* 5–8 cm long, grows higher in the same zone. *Gigartina canaliculata,* with fronds 10–12 cm in length, also occurs in the intertidal zone. *Gigartina serrata* with fronds 20–30 cm. long grows below low tide, very densely in partially shaded places. *Gigartina asperifolia* was the only species collected which so far seems unsuitable as an agar source.

A year-round study will be necessary to establish the amounts of these seaweeds which, on the average, can be collected in a day, week or month and the annual harvest which can be expected from a section of coastline. In summer, with a calm sea, approximately 100 to 300 pounds of wet seaweed of any of the species named can be collected at one tide by our

[1] Contributions from the Scripps Institution of Oceanography, New Series, No. 187.

[2] H. J. Humm, SCIENCE, 96: 230–231, 1942.

[3] I. V. Kizevetter, *Bull. Pac. Sci. Inst. Fisheries and Oceanography (Russian)*, 13: 1–135, 1937.