SCIENTIFIC NOTES AND NEWS

IT is noted in *Nature* that honorary foreign members of the Royal Society of Edinburgh have been elected as follows: Dr. Henry Norris Russell, chairman of the department of astronomy and director of the Observatory, Princeton University; Dr. F. Enriques, professor of mathematics, Royal University, Rome; and Dr. Karl Freiherr von Tubeuf, professor of botany, University of Munich.

A PORTRAIT of Sir D'Arcy Thompson, of St. Andrews University, president of the Royal Society of Edinburgh, was presented to the society at a recent meeting. The portrait was painted by David S. Ewart and the presentation was made by Professor F. A. E. Crew, director of the Institute of Animal Genetics at the University of Edinburgh.

THE Jenner Medal of the Royal Society of Medicine, London, was presented to Sir Arthur Newsholme, late principal medical officer of the London Local Government Board, at a general meeting of the fellows of the society on July 19. The medal is awarded "for distinguished work in epidemiological research or for pre-eminence in the prevention and control of epidemic disease."

DR. ALEXANDER KÖNIG, professor of ornithology at Bonn, has been awarded the shield of nobility of the German Reich, and Dr. Gottlob Linck, professor of mineralogy and geology at Jena, has received the Goethe Medal for art and science.

M. L'ABBÉ HENRI BREUIL, professor of prehistoric ethnography at the Institute of Human Paleontology, Paris, and of prehistory at the Collège de France, has been elected a member of the Académie des Inscriptions et Belles Lettres, in recognition of his work in prehistory and more especially of his studies of the art of the paleolithic age.

DR. PAUL R. BURKHOLDER, associate professor of botany at Connecticut College, has been appointed associate professor at the University of Missouri.

CASPAR G. BURN, assistant professor in pathology at the Yale Medical School, has been appointed associate professor of pathology at the Long Island College of Medicine. He will be in charge of the pathological service recently established at the Kings County Hospital. John Musser Pearce, formerly of the Rockefeller Institute for Medical Research at Princeton, N. J., has been appointed instructor in pathology.

THE following changes have been made in the faculty of chemistry of the Ohio State University: Associate Professors H. L. Johnston and H. V. Moyer have been promoted to professorships; Assistant Professor L. L. Quill to an associate professorship, and P. M. Harris, instructor, to an assistant professorship. Dr. George Eugene MacWood, National Research Council fellow, 1937–1938, has become an instructor. He takes the place of Dr. John Howe, who has resigned.

RECENT promotions at the Michigan College of Mining and Technology include: From associate professor to professor, Dr. R. M. Dickey, head of the department of geology; from assistant professor to associate professor, in forestry, U. J. Noblet; in mathematics, C. G. Stipe and Dr. J. H. Service; from instructor to assistant professor, in mechanical engineering, H. W. Hawn; in chemistry, Dr. R. F. Makens; in electrical engineering, W. O. Ray; in mathematics and physics, T. C. Sermon.

DR. M. F. ASHLEY-MONTAGU, assistant professor of anatomy at New York University, has been appointed associate professor of anatomy in the Hahnemann Medical College, Philadelphia.

DR. ROBERT DOUGLAS LOCKHART, professor of anatomy in the University of Birmingham, has been appointed Regius professor of anatomy in the University of Aberdeen, in the place of Professor A. Low, who recently retired.

DR. F. A. PANETH has been appointed to the university readership in atomic chemistry tenable at the Imperial College—Royal College of Science, University of London. Since 1933 he has been a consultant of Imperial Chemical Industries and has been engaged in research work with postgraduate students at the Imperial College.

DR. A. A. DUNLAP, assistant mycologist and plant physiologist at the Connecticut Agricultural Experiment Station, has taken up his work as chief of the division of plant pathology and physiology at the Texas Agricultural Experiment Station, College Station. He succeeds the late Dr. J. J. Taubenhaus.

DR. RICHARD S. SHUTT, of the American Cyanamid and Chemical Company, has become supervisor of chemical research at the Battelle Memorial Institute, Columbus, Ohio.

CIVIL members of the National Advisory Committee on Aeronautics appointed by President Roosevelt include Clinton M. Hester, administrator of the newly established Civil Aeronautics Authority, and Dr. Vannevar Bush, president-elect of the Carnegie Institution of Washington. Reappointments include: Dr. Joseph Sweetman Ames, formerly president of the Johns Hopkins University; Edward P. Warner, consulting engineer, formerly professor of aeronautic engineering at the Massachusetts Institute of Technology; Professor Jerome C. Hunsaker, head of the department of me-

chanical engineering at the Massachusetts Institute; Orville Wright and Charles A. Lindbergh.

DR. CHARLES WEISS, director of the Research Laboratories of the Mount Zion Hospital, San Francisco, has received a grant from the Committee on Medical Research of the National Tuberculosis Association to be used for a study of the nature of the lysis of tubercle bacilli in cellular exudates. Dr. Weiss will be assisted by Dr. A. Kaplan, formerly of the department of physiology of the University of California.

DR. CARL L. A. SCHMIDT, dean of the College of Pharmacy and acting dean of the University of California Medical School, has been named a member of the Committee on the Chemistry of Proteins of the National Research Council.

THOMAS J. DUFFIELD, registrar of records and director of the Bureau of Vital Statistics of the Department of Health of New York City, has been appointed an additional American delegate to the forthcoming meeting of the International Commission for the Decennial Revision of the International Nomenclature of Diseases. The meeting opens at Paris on October 3.

DR. D. H. LEHMER, assistant professor of mathematics at Lehigh University, who was recently awarded a Guggenheim fellowship, will work at various English universities on the analytic theory of numbers.

DR. C. E. FORD, demonstrator in botany, King's College, University of London, has been appointed geneticist to the Government Rubber Research Scheme, Ceylon.

AN investigation of the botanical features of the Chihuahuan Desert is being inaugurated through cooperation of the Desert Laboratory of the Carnegie Institution of Washington and the Arnold Arboretum of Harvard University. The area to be covered includes parts of Texas, New Mexico, Chihuahua, Coahuila, Durango, Zacatecas and San Luis Potosi. Work on the vegetation will be conducted by Dr. Forrest Shreve and Dr. T. D. Mallery, of the Desert Laboratory, and the flora will be investigated by Dr. I. M. Johnston, of Arnold Arboretum. Field work is being conducted during August and September in Coahuila and San Luis Potosi.

DR. GÖTE TURESSON, director of the Institute of Plant Systematics and Genetics at the Agricultural College of Sweden, at Uppsala, is making an extended journey in North America this summer. His objective is to collect suitable ecotypes of forest trees for the Swedish Forest Tree Breeding Institution, which has been started at Svalöv, South Sweden. He is assisted by C. G. Alm, curator of the old Linnean Botanical Garden and assistant curator of the Uppsala Botanical Museum. The party is doing field work from the Atlantic to the Pacific both in the United States and in Canada, giving special attention to the forests of British Columbia. Dr. Turesson arrived in May and expects to stay until the latter part of October. His address is Harvard Forest, Petersham, Mass.

DR. DONNEL F. HEWITT, principal geologist in charge of the section of metalliferous deposits of the U. S. Geological Survey, left Washington on August 7 to visit geologic field parties in several western states. He planned also to confer with state and survey officials in regard to projects recently set up under the allotment of funds to the survey by the Public Works Administration. Carl G. Paulsen, chief of the Surface Water Division, returned to Washington on August 8, after visiting several district offices in the West. In California plans were made which will tend to expedite the work related to the investigations and the report on the floods being made by the district office of the survey in California.

THE London *Times* states that J. Hanbury-Tracy has left on a two-year expedition to the Andes of Venezuela. He and Mrs. Tracy will make a collection of plants for the Royal Botanic Gardens, Kew, and a collection of insects for the British Museum of Natural History. Seeds will also be collected for private collectors, and a series of observations will be taken on behalf of the Royal Meteorological Society. The highest point in the Venezuelan Andes rises to over 16,000 feet and the expedition will conduct operations from camps at between 10,000 and 12,000 feet.

DR. JUAN NEGRIN, premier of Spain, professor of human physiology at the University of Madrid and director of the physiological laboratory of the Ramon y Cajal Institute, was at Zurich as a Spanish delegate to the International Physiological Congress. Dr. Negrin is reported, in an Associated Press dispatch, to have said: "I was particularly anxious not to miss this congress. I wanted to show that outside of all considerations science maintains its rights and does not cease to impose its duties."

THE twenty-third annual meeting of the Optical Society of America will be held on October 27, 28 and 29 at the General Brock Hotel, Niagara Falls, Canada. In addition to the usual program of papers the meeting will include a symposium on the "Optics of Illumination," in which it is planned to include invited papers on terminology and standards, basic principles of illumination, widely used light sources and recent developments in light sources; a popular lecture by Robert McMath, director of the McMath-Hulbert Observatory of the University of Michigan, illustrated with astronomical motion pictures, includ-

ing spectroheliographs of solar prominences; visits to the University of Buffalo, the Spencer Lens Company, the Cyanamid Plant, the Queenstown Power House, the Whirlpool, the Welland Ship Canal and the Locks at Thorold. The meeting will be open to non-members as well as members of the society. Non-members, who desire to receive the advance program, final notices or other information in regard to the meeting, should address their requests to the secretary not later than October 10.

DISCUSSION

AN ALGONKIAN JELLYFISH FROM THE GRAND CANYON OF THE COLORADO

DURING the field study of the Algonkian formations in the Grand Canyon of the Colorado River, one of my field assistants, Mr. C. E. Van Gundy, then a graduate student at the University of California, discovered a well-preserved imprint of a jellyfish in the red sandstones above the great lava sequence which forms the top of the Unkar (lower) division of the Algonkian Grand Canyon series. The jellyfish is above 18 centimeters in major diameter. The specimen was submitted to Dr. R. S. Bassler, of the United States National Museum, who identified it. Later a detailed description will be published. The specimen was exhibited at the annual meeting of the Carnegie Institution in Washington in December, 1937, and will be deposited permanently in the National Museum.

Our studies indicate that the Grand Canyon region was under ocean water at least during a part of early Algonkian (Unkar) time when the lower limestones and some of the clastic sediments were laid down. Toward the close of this epoch, emergence took place, and, upon a land surface which probably stood close to sea level, fluvial sediments were deposited as broad flood plains. The latest event of the Unkar was the opening of fissures, the intrusion of diabasic dikes and sills, and the eruption of about a thousand feet of basalt flows. At the top of the lavas is an erosion surface, which sank below sea level and was buried beneath about 400 feet of red sands and clays; between two of the sand layers, the jellyfish was buried. This sequence has a disconformity above and below, and consequently has been set apart as a new group of Van Gundy[1]; to it the name Nankoweap has been applied. After deposition of these strata, elevation above sea level again occurred, and erosion developed a very even surface plain. Later depression below sea level for a long period was marked by deposition of the Upper Algonkian (Chuar) beds, more than 5,000 feet thick. Algonkian history in the Grand Canyon region was closed by folding and faulting, which built the Grand Canyon Mountains. Erosion accompanying and following this orogeny evolved the Ep-Algonkian peneplain, which remained above the ocean until late Lower or early Middle Cambrian time. During this erosion interval, great volumes of Algonkian strata were removed and, over considerable areas, the whole thickness of more than 12,000 feet was swept away, and the Archean basement below suffered some denudation.

The jellyfish is the only authenticated animal fossil which has been found in the Grand Canyon Algonkian. Walcott[2] in 1886 reported the finding of certain fossils "midway of the lower portion of the shales and limestones" of the Chuar group—"a minute Discinoid or Patelloid shell, a small, Lingula-like shell, a species of Hyolithes, and a fragment of what appears to have been the pleural lobe of the segment of a trilobite belonging to a genus allied to the genera Olenellus, Olenoides or Paradoxides. There is also an obscure Stromatopora-like form that may or may not be organic." In 1899, Walcott[3] described and figured these forms. The discinoid shell was named *Chuaria circularis,* nov. g., and sp. The obscure remnant of a brachiopod shell resembles the Cambrian genus Acrothele. The identification of the Hyolithes was questioned, since the specimen possibly may be an inorganic marking. Doubt also was expressed regarding the identification of the trilobite fragment. The Stromatopora-like form was submitted to Sir William Dawson, who was not certain of its organic origin; none the less he gave it the name "Cryptozooan"? occidentale. I have not examined the specimens figured by Walcott, but the illustrations strongly suggest the multitude of inorganic markings to be found throughout the Grand Canyon series. Re-examination of these specimens must be made to prove their organic origin; certainly the existing descriptions do not prove it. My assistants and I have carefully searched the various zones in this great sequence without making other finds. This scantiness of fossils has long been known and is in keeping with that characteristic of Algonkian beds elsewhere in the world. The explanation of this of course has been debated by geologists and paleontologists. Some have accepted Walcott's opinion that the continents stood above sea level during the great length

[1] C. E. Van Gundy, *Proceedings Geol. Soc. America,* 1936, p. 304, 1937.

[2] C. D. Walcott, Second contribution to the studies of the Cambrian of North America, *U. S. Geol. Surv. Bull.,* 30, p. 43, 1886.

[3] C. D. Walcott, *Bull. Geol. Soc. America,* 10: 232–235, 1899.