Asia; 7 in the Atlantic Ocean and adjacent water, provisionally; 60 provisionally, and 32 uncertainly, in the Pacific Ocean and adjacent waters; 7 provisionally in the Indian Ocean, and adjacent waters; 269 unknown.

## THE AERIAL SURVEY DETACHMENT

Two aerial survey detachments, each composed of a commissioned officer of the Army Air Corps, who is a photographic pilot, and an enlisted photographer, were recently authorized by the War Department, for the purpose of assisting the U. S. Geological Survey in carrying out its extensive program for the present calendar year in mapping areas in various states throughout the country.

One of these detachments will photograph areas in Maine, New Hampshire and Vermont, approximating 8,000 square miles. A great portion of these areas, particularly in Maine, have never been adequately mapped, and all existing are old and somewhat obsolete. The other detachment will begin operations on a 4,000 square mile area in Illinois, and later will photograph areas in Michigan and Wisconsin.

One detachment of this kind, organized last year for a like purpose, photographed during a six months' period approximately 9,000 square miles of territory in the states of Michigan, Wisconsin and Illinois. Through the work of this detachment it is estimated that the saving to the government was approximately $100,000, thus demonstrating the efficacy and economy of aerial surveying.

Each aerial survey detachment is equipped with trilens camera and accessories, and furnished with two special photographic planes, one of which is held in reserve. The function of these detachments is to make aerial photographs, which are in turn used in making topographic maps by the Geological Survey. The personnel of the detachments is relieved of all other military duties and assigned exclusively to aerial survey activities for a period of six months. It is placed under the direct control of the chief of Air Corps, who is authorized to issue the necessary orders, for its movements and employment, according to the program submitted by the survey.

## THE CHEMICAL EXPOSITION

FROM the advance information which has reached *Industrial and Engineering Chemistry*, it may be announced that

Many distinctively new and outstanding achievements in chemical engineering, in the manufacture of instruments of precision, in mechanical engineering as applied to the chemical industry, in new apparatus of various and sundry kinds, and, we are happy to say, in new chemicals and new chemical products, will feature the Eleventh Exposition of Chemical Industries, which will open its doors to the public on September 26 at the Grand Central Palace, New York City. There will be an extensive exhibit of casein plastics, some of which are new in the field and deserve careful examination. Alloys especially high in their resistance to corrosion will be another point of interest, for some of them have been offered only lately following a considerable period of research. One of the great corporations which has not been prominently identified with this development has recently undertaken some new lines of manufacture, the products of which will be seen at the exposition.

This year in a section devoted largely to exhibitors of containers, emphasis will be placed upon packaging, weighing, labeling and handling equipment. The subject of containers has long been a troublesome one, for in the past many products of the chemical industry have been marketed in such disreputable packages that attention was directed to the matter some time ago. Not only is the use of such packages detrimental from the sales point of view, but in some instances the common carriers have refused to accept some commodities for transportation, not primarily because of their hazard, but chiefly because of the carelessness in methods of packing. This unfortunate situation is now much relieved and the exhibits to be found this year at the exposition will prove of great assistance to chemical manufacturers.

Among the exhibits will be found many of distinctly educational nature. These include those under the auspices of the American Ceramic Society, the American Chemical Society, the National Safety Council, several bureaus of the United States Department of Commerce and the United States Department of Agriculture. Several industries will use the opportunity to promote the education of the public with reference to their products, as for example, the new types of glass which permit a large percentage of the active rays of the sun to pass through them. Iowa State College will present evidences of development in the industrial use of agricultural products. From the territory represented by such railroads as the Southern and the Southern Pacific Company, and from the Ontario Department of Mines will come interesting displays of natural raw materials from the field as well as from the mine. The southern section will include a considerable number of exhibitors, part of which will represent commercial houses and large industries. Some three hundred exhibitors are upon the list of those who have engaged space.

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## SCIENTIFIC NOTES AND NEWS

BERTRAM BORDEN BOLTWOOD, since 1910 professor of radio-chemistry in Yale University, died by suicide on August 14, at the age of fifty-seven years.

FRIENDS of Mr. Thomas A. Edison and employees of the Edison interests throughout the country joined on August 8 on the lawn of Edison's home at Llewellyn Park, West Orange, N. J., in honoring the inventor, who fifty years ago completed the first mechanism for

recording and reproducing sound. Governor A. Harry Moore, of New Jersey, was among the guests and presented to Mr. Edison a bound portfolio of letters of felicitation received from prominent men and women throughout the world.

DR. CHARLES ATWOOD KOFOID, chairman of the department of zoology at the University of California, has been elected president of the Pacific Division of the American Association for the Advancement of Science; Dr. Joel H. Hildebrand, professor of chemistry, and Dr. Leonard B. Loeb, associate professor of physics, have been appointed members of the executive committee.

ON the occasion of the meeting of the British Association for the Advancement of Science, the University of Leeds will confer the doctorate of laws on Sir Arthur Keith, president of the association; on the Duchess of Atholl, and on the Hon. Sir Charles Parsons, and the doctorate of science on Dr. J. B. S. Haldane, Dr. N. V. Sidgwick, Dr. F. O. Bower and Dr. R. A. Millikan.

THE fifth gold medal of the African Society, instituted for those who have done the best work for Africa, has been awarded to Sir Ronald Ross, director-in-chief of the Ross Institute and Hospital for Tropical Diseases.

M. CHARLES FABRY, professor of physics at the Sorbonne and director of the institute of optics of the University of Paris, has been elected a member of the Paris Academy of Sciences in the section of physics to succeed the late M. Daniel Berthelot.

M. GRAVIER has been appointed a delegate of the Paris Academy of Sciences to the International Congress of Zoology, which will open in Budapest on September 9.

DR. EMMELINE MOORE, of New York, was elected president of the American Fisheries Society at its recent convention at Hartford, Connecticut. Other officers elected were C. F. Culler, of the U. S. Bureau of Fisheries, *vice-president;* Carlos Avery, secretary of the American Game and Protective Association, *secretary,* and T. E. Pope, of the Public Museum of Milwaukee, *treasurer.* Next year's meeting will be held in Seattle, Washington.

DR. F. L. CAMPBELL, assistant professor of biology in New York University, has resigned to accept a position as associate entomologist in the Bureau of Entomology, Washington, D. C., where he will investigate the toxicology of stomach poison insecticide.

J. D. RUE, chief of the pulp and paper section of the U. S. Forest Products Laboratory, will leave the laboratory about September 15 to take the position of director of research for the Champion Fibre Company, of Canton, N. C. Mr. Rue has been in charge of the pulp and paper section of the Forest Products Laboratory since 1921.

DR. PETER H. BUCK (TE RANGI HIROA), director of Maori Hygiene for the New Zealand Government, has been appointed anthropologist on the staff of Bernice P. Bishop Museum, Honolulu. During 1927–28, Dr. Buck plans to give his attention chiefly to investigations in the Cook Islands, in continuation of previous studies. Gerrit P. Wilder, botanist on the staff, has returned to the United States after a year's study of the breadfruit trees in the Society and Cook Islands. Mr. John W. Gillespie, Bishop Museum fellow in Yale University, is making a botanical survey of Viti Levu, Fiji, with especial attention to the flora of high altitudes. In this investigation, he is associated with Mr. H. E. Parks, of the University of California, who has been at work in Fiji for the past three months. Mr. H. G. Hornbostel, who for the past three years has been engaged in archeological field work in Guam and the Marianas Islands, under the auspices of the museum, has begun similar studies in the Caroline Islands.

DR. WALTER H. EDDY, professor of physiological chemistry at Columbia University, has returned from a half year's leave of absence which he spent in Spain, France, England, Barbadoes, Trinidad, Costa Rica, Panama and Cuba.

DR. CALVIN O. ESTERLY, for twenty years professor of zoology in Occidental College, has been granted a leave of absence for the academic year 1927–28. Dr. and Mrs. Esterly plan to go to Hawaii in August.

H. S. LADD, of the University of Virginia, is engaged in studying the fossil mollusks of the Fiji Islands and will later spend about a month at the National Museum.

H. D. SKINNER, of the department of anthropology of the University of Otago, Dunedin, New Zealand, was recently the guest of the Pueblo Bonito Expedition of the Smithsonian Institution.

DR. JAMES MUIR, radium therapist, sailed for Europe on August 6 to read papers and give clinical demonstrations on his treatment of cancer by radium implantation at the four leading European capitals.

LEAVE of absence has been granted to Dr. Arthur H. Compton, professor of physics of the University of Chicago, from October 1 to November 10, in order that he may attend the Solvay Congress, and to Derwent S. Whittlesey, associate professor of geography, for the autumn, winter and spring quarters, 1927–28, in order that he may take charge of the work in geog-

raphy on the second round-the-world cruise to be conducted by New York University.

DR. EDWIN G. CONKLIN, of Princeton University, recently lectured at Columbia University on "Heredity *versus* Environment in Human Progress" and on "Some Common Misconceptions regarding Evolution," and at the Mount Desert Botanical Laboratory in Maine on "The Evolution Controversy in the United States."

DR. FRANCIS G. BENEDICT, director of the nutrition laboratory in Boston of the Carnegie Institution of Washington, gave an address at the University of New Hampshire, recently, on "Physiologic Research Institutions of Europe."

DR. ALEXANDER CROMBIE HUMPHREYS, for twenty-five years president of the Stevens Institute of Technology, well known as a gas engineer, died on August 14, aged seventy-six years.

LOYALL VERGIL HUNT, B.S., Kansas State Agricultural College, 1923, student assistant in zoology at West Virginia University, was drowned on August 7 while bathing in the Cheat River near Morgantown.

SIR BRYAN DONKIN, honorary member of the Royal Medico-Psychological Association, and author of many publications on criminology and related subjects, died on July 26, aged eighty-two years.

DR. ALBRECHT KOSSEL, professor of physiology in the University of Heidelberg, known for his contributions to our knowledge of the chemical nature of the proteins, died on July 5, aged seventy-four years.

DR. PAUL KESSLER, associate professor of geology at the University of Tübingen, died on July 14.

THE United States Civil Service Commission announces open competitive examinations to fill vacancies in the U. S. Department of Agriculture as follows: Junior crop and livestock estimator, in the bureau of agricultural economics, for duty in Washington, D. C., or in the field, at $1,860 a year, and associate dust explosion prevention engineer at $3,000 a year, and assistant dust explosion prevention engineer at $2,400 a year, in the bureau of chemistry and soils.

IT is reported in the *Journal* of the American Medical Association that the residents of Pine Grove are seeking an injunction to prevent the establishment in that community of a research laboratory by the state of Montana for the purpose of investigating the prevention of Rocky Mountain spotted fever, it being reported that they have instituted court proceedings, making members of the state board of health the defendants. Dr. William F. Cogswell, secretary of the state board of health, testified on July 29 that there would be no chance for the experimentally infected ticks to escape from the proposed laboratory. The question of how fast these ticks travel is said to have enlivened the court proceedings.

THE Illinois State Geological Survey has recently received from the legislature, with the approval of the governor, an increased appropriation, which will permit an extension of specialization in petroleum engineering and geological engineering and the undertaking of a comprehensive paleobotanical study of the Pottsville series, in addition to its regular program of stratigraphic, glacial and economic studies. The paleobotany of the Pottsville series will be studied by Dr. David White. The previous appropriation of $50,000 per year for topographic mapping was continued.

THE topographic maps made by the Geological Survey of the Department of the Interior show by means of contour lines, of which there are thousands on some maps, the altitude above sea-level of every portion of the area represented. In addition to portraying all physical characteristics, as well as the works of man, these maps constitute a wonderfully detailed dictionary of altitudes, showing the height of every hill and slope. As the United States becomes more and more completely mapped, the scope of this "dictionary" constantly expands. At the present time a little more than 40 per cent. of the United States is topographically mapped, but the work is progressing rather slowly at the rate of only 17,000 or 18,000 square miles a year. Moreover, the maps of a large part of this area are either very old, and therefore somewhat crude, or else on so small a scale as to be inadequate for present-day needs. In addition to areas that have never been surveyed, there are considerable areas that will have to be resurveyed.

WE learn from *Nature* that in *Man* for July, Professor Frassetto, of Bologna, figures and describes his reconstruction of the jaw of Piltdown man, which he compares and contrasts with the jaws of the orang and the chimpanzee. In his view its resemblance lies in the direction of the orang rather than that of the chimpanzee. He gives in tabular form eight points in which the orang differs from the chimpanzee, and in which the jaw of Piltdown man, so far as its condition allows, is comparable with it. As a whole, the jaw of the chimpanzee is relatively thin, slight and light, while both orang and Piltdown are massive and heavy; the ascending ramus is oblique in relation to the horizontal portion, but in the orang and Piltdown almost vertical; the position of the semilunar notch coincides in the two jaws, but in both differs from its position in the chimpanzee jaw; the angle has a curvature of a large radius in orang and Eoanthropus, but it is small in the chimpanzee; the posterior margin of the chimpanzee ramus is narrow to the root of the

condyle, where it widens rapidly, but in both the other jaws it widens gradually as it passes into the condyle. Again, the lower borders of the corpus of the mandible resemble one another in both orang and Piltdown, but differ from the chimpanzee, which also has a relatively small genial fossa as opposed to the large fossa of the other jaws. The reconstruction was therefore made by grafting the symphysian region of the orang's mandible duly enlarged on to the corpus of Piltdown man's jaw, the conclusion being that the jaw is human, belongs to the same individual as the cranial fragments, and represents a primitive race belonging to a genus of the orang type. Not only is this because of the features of the mandible, but also because of the eyebrow ridges, which do not exhibit the prominent torus characteristic of the chimpanzee type to which Neanderthal man belongs.

THE results of an investigation into certain processes and conditions on farms undertaken by Mr. W. R. Dunlop, under the auspices of the National Institute of Industrial Psychology, are reported in *Nature* as follows: "These results show that farm management in Great Britain is by no means efficient. The present investigation is the first systematic attempt in Great Britain to apply the point of view and methods of industrial psychology to agriculture. Two problems were studied: (*a*) the picking and packing of fruit, including bush fruit, hops and glass-house produce, and (*b*) milking. It is shown that the best pickers at one kind of fruit are the best pickers at all other kinds, that there is no evidence to show that afternoon rates are lower than those of the morning, that there are considerable individual variations in efficiency. The milking problems include discussions of milking rates, differences of cows, manual skill of milkers. Some important questions are raised in the third section dealing with future enquiries, not the least of which is the selection of the right worker for the right work, and the guidance of young people leaving school into occupations for which they are most fitted. Apparently there is a tendency for the children of a lower level of intelligence and ambition to take up agriculture, the town attracting the more intelligent. In so far as this is so, it is to be deplored, but obviously the problems connected with such a choice are very difficult to attack, involving as they do the attitude of mind of the community towards agricultural work, the lower standard of nominal wages and the ties with regard to hours."

## UNIVERSITY AND EDUCATIONAL NOTES

BY the will of the late Dr. Charles A. Dewey his estate of nearly $1,000,000 is to be held intact as the Charles A. Dewey Fund, the income to be devoted to the support of the medical schools of the University of Rochester and of Harvard University. Dr. Dewey graduated from the University of Rochester and from the Medical School of Harvard University in 1880. In addition to the foregoing provision, which became effective through the recent deaths of a nephew and niece, the will provides a gift of $100,000 to the Rochester General Hospital as a memorial to Dr. Dewey's sister.

AS a result of a decision handed down by John P. O'Brien, surrogate of the New York County Court, Dartmouth College eventually will receive $373,024 from the estate of Mrs. Helen L. Bullard. The will had been contested on the ground that the decedent estate law prohibits the payment of more than one half of an estate to charitable or educational institutions when there are immediate members of the family living at the time of the passing of the testator. It was ruled that the value of the Dartmouth remainders should be computed at the time of the death of Mrs. Bullard upon the life expectancy of the thirteen life tenants as shown in insurance tables.

DR. RAYMOND M. HUGHES, for sixteen years president of Miami University at Oxford, Ohio, has resigned to accept the presidency of the Iowa College of Agriculture and Mechanic Arts at Ames.

AMONG the promotions to full professorships announced by the University of Chicago Board of Trustees are the following: Ernest W. Burgess, in sociology; Fay-Cooper Cole, in anthropology; Arthur J. Dempster, in physics; Edward Sapir, in anthropology; William Taliaferro, in pathology, and Louis Leon Thurstone, in psychology. Promotions to associate professorships include: Merle C. Coulter, in botany; Maude Slye, in pathology, and Benjamin A. Willier, in zoology.

DR. W. MANSFIELD CLARK, of the Hygienic Laboratory of the U. S. Public Health Service, Washington, D. C., has accepted the position of professor of physiological chemistry at the school of medicine of the Johns Hopkins University.

DR. THOMAS MURRAY MACROBERT, university lecturer in the University of Glasgow, will succeed Dr. Gibson as professor of mathematics.

DR. ERWIN SCHRÖDINGER, of the University of Zurich, has been called to the University of Berlin as the successor of Professor Max Planck.

DR. REINHARD DEMOLL, director of the biological laboratory at the University of Munich, will succeed Dr. Karl Grobben as professor of zoology in the University of Vienna.