SCIENTIFIC NOTES AND NEWS

THE gold medal of the Radiological Society of North America has been awarded to Dr. Robert A. Millikan, director of the Norman Bridge Laboratory of Physics of the California Institute of Technology.

THE Council of the Royal College of Surgeons has conferred the honorary fellowship of the college on Dr. Banting, of the University of Toronto, the discoverer of insulin. Lord Moynihan pointed out, according to a statement in the London *Times*, that Dr. Banting's discovery of insulin was the first piece of important scientific research in the realm of medicine contributed by the British Dominions. The college accords him the recognition of surgeons of a piece of scientific work of a physiological character bearing on the practice of surgery, though in itself something entirely outside the practice of surgery.

AT the monthly meeting of the American Geographical Society on November 26, the David Livingstone Centenary Medal for 1930 was presented to Dr. Laurence M. Gould for his explorations in the Antarctic.

THE George Robert White Medal of the Massachusetts Horticultural Society has been awarded to Dr. David Fairchild, botanist and explorer, since 1906 in charge of the office of foreign plant introduction of the U. S. Department of Agriculture.

DR. EMILE F. HOLMAN, professor of surgery at Stanford University, has been awarded the Samuel D. Gross prize for his research on abnormal arteriovenous communication.

AT a meeting of the Geological Society of London on November 5, Professor P. Lemoine, Paris, and Professor G. A. F. Molengraaff, Delft, were elected foreign members. Professor R. S. Bassler, U. S. National Museum, Washington; Professor O. Mügge, Göttingen; Dr. D. I. Mushketov, Leningrad; Madame M. Pavlov, Moscow; Professor P. D. Quensel, Stockholm, and Professor E. Stensiö, Stockholm, were elected foreign correspondents.

THE *British Medical Journal* calls attention to the issue of the *Wiener medizinische Wochenschrift* for November 1, which is dedicated to the Vienna pediatrist, Professor Hochsinger, on the occasion of his seventieth birthday, and which contains articles dealing exclusively with diseases of children.

THE title of emeritus professor of electrical engineering in the University of London has been conferred on Professor Ernest Wilson, on his retirement from the university chair of electrical engineering at King's College.

DR. E. H. VOLWILER, director of research of the Abbott Laboratories, North Chicago, has been elected a director of the organization into which the Abbott laboratories and Swan-Myers were recently merged.

DR. STEFAN ANSBACHER, physiological chemist, formerly of the institute of pathology of the University of Geneva, has joined the laboratory staff of the South Carolina Food Research Commission at Charleston.

PROFESSOR GUSTAVO PITTALUGA, director of the laboratory of parasitology at Madrid, has been named director of the Spanish National School of Hygiene.

AT the annual meeting of the American Society of Agronomy, held in Washington on November 20 and 21, the following officers were elected for the ensuing year: *President,* Dean W. W. Burr, University of Nebraska, Lincoln; *Vice-presidents,* Dr. A. B. Beaumont, Massachusetts Agricultural College, Amherst; Dr. S. A. Waksman, New Jersey Agricultural Experiment Station; Professor George Stewart, U. S. Forest Service, Ogden, Utah, and R. I. Throckmorton, Kansas State Agricultural College, Manhattan; *Editor,* J. D. Luckett, Agricultural Experiment Station, Geneva, New York; *Secretary-treasurer,* P. E. Brown, Iowa State College, Ames. Three members of the society were elected fellows. These were: President F. S. Harris, Brigham Young University, Provo, Utah; Dr. James A. Bizzell, Cornell University, and Dr. Walter P. Kelley, University of California. The winners of the Chilean Nitrate of Soda Nitrogen Research Award, sponsored by the American Society of Agronomy, were: Luther G. Willis, of the North Carolina Agricultural Experiment Station; James K. Wilson, of Cornell University, and Joshua J. Skinner, of the Bureau of Chemistry and Soils.

PROFESSOR S. C. BROOKS has been granted a half year's leave of absence from the University of California and will continue his experiments at the Stazione Zoologica, Naples. He will occupy the Woods Hole-Columbia Table there. Dr. Matilda Moldenhauer Brooks has been given a grant from the National Research Council to enable her to continue her oxidation-reduction studies at Naples and will occupy the Woman's Table of the Association to Aid Scientific Work by Women. They will sail from New York on December 16 and will return to Berkeley *via* Japan in August, 1931.

DR. KARL LANDSTEINER, of the Rockefeller Institute for Medical Research, who was recently awarded the Nobel prize in medicine, sailed for Europe on November 25 in order to receive the medal at Stockholm.

DR. ROBERT A. MILLIKAN, of the California Insti-

tute of Technology, will give the Proctor Foundation Lecture at the Brooklyn Institute of Arts and Sciences at the Academy of Music, on Saturday evening, December 13. His subject will be "Exploring the Universe."

DR. EDWIN P. HUBBLE, of the Mount Wilson Observatory, will lecture at the Carnegie Institution of Washington on December 10. The title of the lecture is "The Exploration of Space."

DR. J. B. JOHNSON, research physicist at the Bell Telephone Laboratories, New York, lectured on "The Cathode Ray Oscillograph" on December 4, before the Franklin Institute, Philadelphia.

DR. DEXTER S. KIMBALL, dean of the College of Engineering at Cornell University, lectured at the University of California on December 2 and 4, on "Economic Tendencies in Industry."

DR. B. H. HIBBARD, professor of agricultural economics and head of that department in the University of Wisconsin, will lecture for four weeks at the summer session of the Kansas Agricultural College at Manhattan.

AN illustrated lecture course on astronomy will be given during the winter, both at Pasadena and Los Angeles, under the auspices of the Astronomical Society of the Pacific and the Mount Wilson Observatory. The subjects and lecturers are as follows: "What the Stars are Made of," Dr. Arthur S. King, Mount Wilson Observatory; "Taking the Census in the Solar System," Dr. Seth B. Nicholson, Mount Wilson Observatory; "Comets and Asteroids," Dr. William F. Meyer, president, Astronomical Society of the Pacific; "Celestial Laboratories," Dr. Theodore Dunham, Jr., Mount Wilson Observatory; "The Exploration of Space," Dr. Edwin P. Hubble, Mount Wilson Observatory.

DR. CHARLES F. SWINGLE, Bureau of Plant Industry, U. S. Department of Agriculture, delivered on November 15 a lecture on "Hunting Plants in Madagascar" at the Royal Canadian Institute.

THE Henry Sidgwick Memorial Lecture at Newnham College, Cambridge, was given by Professor A. V. Hill, professor of physiology in the University of London, on November 22. The title of the lecture was "Biology in Education."

Nature reports that the third Liversidge lecture of the British Chemical Society, which was to have been delivered by Professor H. B. Dixon, will be given on December 11 by Professor W. A. Bone, at the Imperial College of Science and Technology, South Kensington. Professor Bone will take as his subject, "Fifty Years' Experimental Research upon the Influence of Steam on the Combustion of Carbonic Oxide (1880–1930)."

A SERIES of lectures is being given at the Institute of the History of Medicine, Johns Hopkins University School of Medicine, by Sir D'Arcy Power, England, honorary librarian of the Royal College of Surgeons. The subjects of the lectures are: "Essentials of Medical Biography," "Medical Bibliography," "The Meals of Our Ancestors," "Aristotle's Masterpiece," "Medical Iconography" and "The Growth of a Hospital."

THE second annual meeting of the American Association of Physical Anthropologists will be held on December 29 to 31, in Cleveland, in affiliation with Section H of the American Association for the Advancement of Science and with the American Anthropological Association. The society's sessions will be held in the department of anatomy of Western Reserve University. A joint meeting and a joint dinner will be held with Section H of the American Association for the Advancement of Science and with the American Anthropological Association. For members desiring to make reservations of rooms, the Hotel Winton is suggested.

THE Central Society for Clinical Research held its third annual meeting at the Research and Educational Hospital of the College of Medicine, University of Illinois, on November 21. About two hundred members attended the meeting. The officers elected for the ensuing year are: *President,* Dr. Louis Leiter, and *Secretary,* Dr. Lawrence D. Thompson.

THE first regular meeting of the American Geographical Society for the season 1930–1931 was held on November 25, at the Engineering Societies Building, New York City, President John H. Finley in the chair. Laurence Gould, of the University of Michigan, addressed the society on his Antarctic field work of 1928–1930. Dr. Gould was the geologist and geographer, as well as the second-in-command, of the Byrd Antarctic Expedition. During the expedition he made two independent trips, one by airplane, to the newly discovered Rockefeller Mountains, 150 miles east of Little America, and the other by dog sledge 440 miles south from Little America to the mountains at the border of the South Polar Plateau. Of these border mountains, for a distance of 250 miles, the first adequate survey was made.

THE fifty-first annual meeting of the American Society of Mechanical Engineers opened on December 1. The ninth national exposition of power and mechanical engineering in which four hundred exhibitors have taken space is being held in connection with the meeting. The engineering departments of

Princeton, Stevens Institute, the Massachusetts Institute of Technology, Rensselaer, Cornell and the University of Pennsylvania are among those to be represented at the exhibit. There will be a special exhibition of the works of the late Dr. Elmer A. Sperry, past president of the society, at the museum, as well as motion pictures and a sound cartoon explaining the production and exhibition of talking pictures.

THE *British Medical Journal* states that on the occasion of its tenth annual meeting the German Society for Diseases of the Digestive System and Metabolism has founded a Boas prize of the value of 1,000 marks. The subject is the bacterial and non-bacterial origin of diseases of the pancreas. Candidates should send in their essays by April 1, 1931, to the general secretary, Professor R. von den Velden, 30, Bambuga Strasse, Berlin, from whom further information can be obtained.

COLUMBIA UNIVERSITY will receive $173,232 under the will of Miss Euretta J. Schlegel, who died in Brooklyn on December 4, 1929. The legacy is provided for the purpose of establishing fellowships "for the study of letters at Oxford or Cambridge."

THROUGH error in transcription the Central Chemical Company of Chicago instead of the Central Scientific Company was credited in a recent issue of SCIENCE with endowing a national chemical fellowship at the Johns Hopkins University.

UNDER the will of the late Lord Brotherton, who died on October 21, the University of Leeds will receive £100,000 for general purposes, and in addition a gift to the university library of his collection of books, with an endowment for upkeep.

A REVISION of the graphical symbols used in radio communication has been prepared by a technical committee under the auspices of the American Standards Association and is now being considered by the Institute of Radio Engineers for submittal to the association for approval. The purpose of the revision is to eliminate any possible confusion between radio symbols and the symbols used in other branches of engineering. A general committee on scientific and engineering symbols and abbreviations, working under the American Standards Association procedure, has already completed national standard symbols for hydraulics, for heat and thermodynamics, for photometry and illumination, for aeronautics, for mathematics, for electrical quantities, for telephone and telegraph use, and for navigation and topography. The American Association for the Advancement of Science, the American Institute of Electrical Engineers, the American Society of Civil Engineers, and the American Society of Mechanical Engineers are joint sponsors for the work of the technical committee which prepared the symbols.

THE *Journal* of the American Medical Association reports that the board of health for the University of Iowa, authorized by President Walter Jessup, was recently organized and its divisional work inaugurated with headquarters at the student out-patient service offices. The personnel includes Dr. Henry S. Houghton, professor and dean of the college of medicine, chairman; Dr. Fred M. Smith, professor and head of the department of theory and practice of medicine; Dr. Milford E. Barnes, professor and head of the department of hygiene and preventive medicine, secretary, and Dr. Carl E. Seashore, head of the department of psychology and the graduate college; Mr. Robert E. Rienow, dean of men; Miss Elizabeth Halsey, professor and head of the department of physical education for women, and Dr. Edward H. Lauer, professor and director of the division of physical education. With the approval of Dr. Daniel C. Steelsmith, state commissioner of health, the university board will enforce regulations of local health officers and remove possibilities of menace to health arising from the existence of the hitherto "no man's land" in the form of state owned properties. The activities of the new board will include the inspection division, under the direction of Mr. Jack J. Hinman, Jr., assistant professor of sanitation and chief of the water laboratory which will carry out the sanitary inspection of all buildings under the direction of the quasi control of the university and all water, milk and food supplies and swimming pools. The communicable disease section, under Dr. Carl F. Jordan, assistant professor of hygiene and preventive medicine, will investigate and act on all reportable and communicable diseases within the university health district; those cases involving extramural action will have close cooperation with the local health authorities. The life extension division, under Dr. Chester I. Miller, chief of the student out-patient department, and Drs. L. B. Hanson and Grace E. Williams, examiners for men and women, respectively, will handle students, nurses and employees. The health examinations now required of all freshmen will be extended to include all incoming registrants and all prospective graduates during their final year. The student out-patient department will be supervised by Dr. Miller and will care for student illnesses, and those in need of additional service are referred to the hospital, for which a nominal charge is made.

ARRANGEMENTS have been made by the Department of Conservation and Development for the first large-scale planting of Asiatic chestnut trees in North Carolina by federal and state officials in an effort to replace the native tree destroyed by blight. Five thou-

sand seedlings, which range from two to three years in age, have been acclimatized at the State Forest Nursery near Clayton. They will be planted almost exclusively on publicly owned lands that their growth and condition may be checked closely. Settings will be made in orchard formation to assure a future supply of nuts if the trees thrive in their new environment.

DISCUSSION

CONSIDERATIONS LEADING TO THE VIEW THAT PELLAGRA IS AN IRON-DEFICIENCY DISEASE

THERE are so many facts recorded in the literature which tend to support the idea that iron deficiency occurs in pellagra that it seems curious that no one has suggested that the etiology of pellagra is in some way related to iron deficiency. At least the writer has not found such a reference.

Pellagra is practically unknown in very young infants (first year or two). In this connection it is interesting to note that children, puppies, kittens and rabbits are born with an iron concentration of about three times that found in adults. It is worthy of note that the young just mentioned get their first nourishment from milk which has a low iron content, while guinea-pigs, which feed like adults as soon as born, have no higher iron concentration than full-grown animals.

It is recorded that in the investigations of the Thompson-McFadden Pellagra Commission the disease was found to be more prevalent in women than in men—and particularly within the age limits of 19 to 44 years. Between these ages the menstrual cycle in woman causes her to lose 250 cc or more of blood each 28 days. Calculating the hemoglobin content of blood as 10 per cent. and iron as 0.335 per cent. of hemoglobin, the daily loss of iron by this route alone is 3.00 mg. Sherman estimates that such daily loss may average 3.0 mg. Unless the food eaten contains abundant iron this loss, in women certainly, operates to cause a depletion of the amount of iron in the body. Pellagra, in the United States, occurs almost wholly among the rural population of the Southern states, and is found chiefly among those whose economic status forces them to subsist upon a diet made up largely of corn bread and syrup—a diet low in iron. The low iron content of the diet of the women in the rural districts in the South, coupled with the regular losses of iron during menstruation, therefore, are in harmony with the view that the higher incidence of pellagra in women between the ages of 19 and 44 years is related to an iron deficiency. In connection with the foregoing it is also interesting to note that the symptoms of pellagra are usually ameliorated during pregnancy.

Largely as the result of the work of Goldberger and his associates it is generally believed that the heat-stable portion of vitamin B (called the P-P factor or vitamin G—after Goldberger) protects against pellagra. This work of Goldberger has made less of an impression upon clinicians and laboratory workers in the South who are in actual contact with the disease than might be inferred from its ready acceptance in standard texts to-day. Assuming, however, that there is such a "vitamin," its exceptional stability towards heat and its concentration by absorption on kaolin lend themselves suggestively to the idea that the active agent may, indeed, be iron.

Goldberger and his associates adopted the working hypothesis that black-tongue of dogs is the analogue of pellagra in man, and they found that diets which are effective in preventing pellagra in man are also effective in preventing black-tongue of dogs—and the same is said of the curative effects of those diets. Examination of the protocols published by Goldberger reveals the fact that those diets which prevented or cured black-tongue in dogs are just those to which had been added "syrup iodid of iron U.S.P.," and those diets which when fed to dogs produced black-tongue or failed to cure the disease are those to which no iron had been added. Apparently the iron was not added to or withheld from those diets with any intent to affect the balance of the element, because the footnote explains that it was added to "improve the mineral composition of the diet." They make no further mention of iron.

Further, it may be said that the foods which are supposed to contain liberal quantities of vitamin G (beef, liver, egg yolk, yeast) are all iron-containing foods (some of them being among those containing more iron than any other known biological product), while the pellagra-producing diet of poor farmers of the South (molasses and corn bread) is extremely poor in iron.

The anemia which is a very frequent concomitant of pellagra may be yet another finger pointing to an iron deficiency in pellagra.

The achlorhydria of pellagra would certainly promote a greater than normal alkalinity in the region of the duodenum, and the lessened solubility of iron salts in an alkaline medium would hinder their absorption—for it is known that it is there that iron is almost wholly absorbed.[1]

[1] A. B. Macallum, "On the Absorption of Iron in the Animal Body," *Journal of Physiology*, 16: 268, 1894.