

SCIENTIFIC NOTES AND NEWS

THE annual meeting of the National Academy of Sciences will be held in Washington on April 26, 27 and 28. The evening lecture will be given by Dr. George H. Whipple, of the University of Rochester, his subject being "The Romance of Hemoglobin."

DR. ERICH TSCHERMAK has been elected a correspondent of the Academy of Sciences, Institute of France, in the section of rural economy. He fills the place left vacant by the death of Theobald Smith.

THE Pasteur Medal of the French Society of Clinical Biology has been awarded to Professor L. van Itallie, of the University of Leiden.

THE London *Times* announces that the council of the Iron and Steel Institute has awarded Bessemer gold medals for 1937 to Colonel N. T. Belaiew and to M. Aloyse Meyer. Colonel Belaiew, of Paris, a former pupil of Professor Tschernoff, of the Military Academy, Petrograd, is an authority on metallurgy. M. Aloyse Meyer, of Luxemburg, is an honorary vice-president of the Iron and Steel Institute, and is known as the head of the Société Anonyme Arbed, the Luxemburg combine, and the second largest iron and steel company in Europe.

DURING the April meeting of the International Council of Scientific Unions in London an honorary degree will be conferred by the University of London on the president of the council, Professor N. E. Nörlund, director of the Geodetic Institute of Copenhagen.

Nature states that the Central Executive Committee of the U.S.S.R. conferred the Order of Lenin on Professor A. N. Bach, on the occasion of the fiftieth anniversary of his scientific activity, for his work on the chemistry of photosynthesis, respiration and enzyme action. Professor Bach celebrated his eightieth birthday on March 17.

DR. HENRY V. HOWE, director of the School of Geology of the Louisiana State University, was appointed secretary-treasurer of the Society of Economic Paleontologists and Mineralogists at the recent meeting in Los Angeles.

DR. C. S. MUDGE, associate professor of dairy industry and associate dairy bacteriologist in the experiment station of the University of California College of Agriculture at Davis, was elected at the San Francisco meeting chairman of the Western Branch of the Society of American Bacteriologists. Dr. Mudge succeeds Dr. Paul J. Beard, of Stanford University. He will have charge of the arrangements for the meeting of the national organization in San Francisco next year.

DR. ROBERT P. WALTON, assistant professor of pharmacology at the School of Medicine of Tulane University, has been appointed professor and head of the department of pharmacology of the School of Medicine of the University of Mississippi.

DR. ROWLAND W. LEIBY has become assistant professor of entomology in the extension department of Cornell University, to fill the vacancy caused by the death on January 11 of Professor Cyrus R. Crosby.

VLADIMIR MISSIURO, professor at the Central Institute of Physical Education of the University of Warsaw, has been appointed research associate in the Harvard Fatigue Laboratory for the current academic year. Dr. José H. Aste-Salazar has been appointed research assistant.

DR. LINDA B. LANGE, associate professor of bacteriology at the School of Hygiene and Public Health of the Johns Hopkins University, has been appointed professor of bacteriology and immunology at the Woman's Medical College of Pennsylvania, Philadelphia.

THE department of mining and metallurgy of the Massachusetts Institute of Technology has been divided into two distinct fields of professional education; the department of mining engineering will be administered under the direction of Professor W. Spencer Hutchinson. This department will include the course in petroleum production. There will be established a new department of metallurgy, which will be directed by Dr. Robert S. Williams, professor of physical metallurgy. This department will include the course in ceramics.

AT the College of Engineering of the Carnegie Institute of Technology, beginning next autumn, courses in chemical engineering will be administered under two separate departments instead of under one as at present. Dr. Thomas R. Alexander, associate professor of inorganic chemistry, will become acting head of the department of chemistry, and Dr. Warren L. McCabe, professor of chemical engineering, will be the head of the department of chemical engineering.

PROFESSOR A. E. TRUEMAN, Channing Wills professor of geology in the University of Bristol, will succeed Professor E. B. Bailey in the chair of geology at the University of Glasgow. Dr. Bailey was recently appointed director of the Geological Survey of Great Britain.

DR. N. K. ADAM, research chemist in Imperial Chemical Industries, Ltd., has been appointed professor of chemistry in University College, Southampton.

DR. AARON L. TREADWELL, since 1900 head of the department of zoology of Vassar College, having reached the age of seventy years, will retire in June. He will be succeeded by Dr. Rudolf T. Kempton, now assistant professor in the department of biology at Princeton University.

DR. WALTER L. JENNINGS, head of the department of chemistry and chemical engineering at the Worcester Polytechnic Institute, will retire from teaching at the end of the current academic year. He will be succeeded by Dr. Frederic R. Butler.

AT Columbia University Dr. Leslie C. Dunn, professor of zoology, and Dr. James W. Jobling, professor of pathology, have been elected members of the university council. Dr. Dunn will serve as chairman of the committee on instruction.

DR. PAUL POPENOE has resigned from the Human Betterment Foundation at Pasadena, Calif., of which he has been secretary since its organization, and hereafter will devote all his time to the Los Angeles Institute of Family Relations, of which he has also been general director from its incorporation seven years ago.

PROFESSOR AUGUSTO BONAZZI, for a number of years connected with the Estacion Experimental Agronomica of Santiago de las Vegas, Havana, has recently assumed his work as director of research for the Department of Agriculture and Animal Industry at Caracas, Venezuela.

DR. WALTER B. CANNON, of the Harvard Medical School, is honorary chairman of the Greater Boston Committee to Aid Spanish Democracy. Sponsors of the movement include President Karl T. Compton, of the Massachusetts Institute of Technology; President Daniel L. Marsh, of Boston University, and Dr. John Albert Cousens, president of Tufts College.

IN response to a request for an opinion on "The Place of Science in National Planning," by Senator Robert J. Bulkley, chairman of the United States Senate Committee on Manufactures, the American Institute sponsored a discussion at the Chemists' Club, New York City, on April 22. Dr. Willis R. Whitney, of the General Electric Company; Waldemar Kaempffert, science editor of *The New York Times*; Dr. George Baehr, trustee of the New York Academy of Medicine; Julius H. Barnes, formerly chairman of the U. S. Chamber of Commerce, and others were present and led the discussion.

DR. E. V. MCCOLLUM left on April 2 for Geneva. He represented this country in nutrition at a meeting of the Mixed Committee of the Health Section of the League of Nations, which held sessions from April 10 to 17.

AT the University of Michigan, leave of absence during the first semester, 1937 to 1938, has been given to the following members of the faculty: Dr. Ermine C. Case, professor of historical geology and paleontology; Dr. Samuel A. Graham, professor of economic zoology; Dr. Burton D. Thuma, assistant professor of psychology; Dr. Lewis E. Wehmeyer, assistant professor of botany. Leave of absence for the entire year has been accorded to Dr. Otto Laporte, associate professor of physics; to Horace W. King, professor of hydraulic engineering, and to Stephen S. Attwood, associate professor of electrical engineering.

DR. HUGO OBERMAIER, professor of prehistory at the University of Madrid, recently lectured before the German Archeological Institute at Rome.

PROFESSOR A. A. ALLEN, of Cornell University, addressed a joint meeting of the Washington Academy of Sciences and the Biological Society of Washington on April 8. The lecture on "American Ornithology, Past and Present," was illustrated by lantern slides and motion pictures with sound recordings.

SIGMA XI lectures on "Internal Secretions in Reproduction," by Dr. Edgar Allen, professor of anatomy at Yale University, were given at Tulane University, the University of Alabama, Virginia Polytechnic Institute and the University of Maine from March 31 to April 8.

DR. C. V. ARIENS KAPPERS, director of the Central Institute of Brain Research of Amsterdam and professor of comparative neurology at the university, addressed the third-year class of the Long Island College of Medicine on April 7. His subject was "The Autonomic Center of the Hypo-Thalamus."

THE eighth annual meeting of the American Association of Physical Anthropologists was held at Cambridge, Mass., on April 8, 9 and 10. The annual public address was delivered by Dr. H. L. Shapiro, of the American Museum of Natural History, the subject being "The Pitcairn Islanders." At the dinner Professor Wm. F. Petersen, of the University of Illinois, gave an illustrated address on "Environmental Effect and Organic Differentiation."

THE annual meeting of the American Association of Pathologists and Bacteriologists will be held in Atlantic City, N. J., on May 3 and 4, 1938, in conjunction with the Congress of American Physicians and Surgeons.

THE third annual meeting of the New York Geographical Association will be held on May 1. There will be a series of papers during the morning session, from nine-thirty to twelve o'clock; a field trip in the afternoon, starting at two o'clock; and a banquet in

the evening at six-thirty. Professor Erwin Raisz, of the Institute of Geographical Exploration at Harvard University, will be a guest speaker. The special committee on the status of geography in the schools of New York State will present its report.

THE Division of Biology of the University of Georgia announces a meeting on May 7 and 8 of the biologists of the southeastern states at Athens, Georgia. Papers on original research and accounts of biological work in southeastern institutions will be presented. The principal address will be given by Dr. L. O. Kunkel, member of the Rockefeller Institute for Med-

ical Research, who will speak on some of the recent developments in virus research.

THE Missouri Public Health Association will hold its thirteenth annual meeting on April 29 and 30 at the Kentwood Arms Hotel, Springfield. A program of particular importance to the public health interests of Missouri will be presented. Papers on tuberculosis, cancer, venereal diseases, maternal welfare, crippled children's service, oral hygiene and malaria are among those that will be given. The final paper which will be given pertains to the future of public health in Missouri under the Social Security Program.

DISCUSSION

RUBBER PRODUCTION FROM CASTILLA AND HEVEA

CAUCHUC, guttapercha, balata, chicle and guayule belong to a series of organic materials sharing such properties as plasticity, resilience and tensile elasticity, dissolving in ether, chloroform, benzol and other liquid hydrocarbons, combining readily with sulfur and the halogen elements, but otherwise inert. No general function in the plant economy has been demonstrated, but the various forms of rubber may be viewed as excretory products and associated with resins, tannins and lignins. As with sugar from cane and beet, rubber of the same nature is obtainable from the Castilla or Central American rubber tree, and from the Hevea or Para rubber tree of Brazil, cultivated in the East Indies, although the trees belong to unrelated families and different methods of extraction are required.

Many kinds of rubber-bearing trees, vines and shrubs have been exploited in the wild state, but only three systems of cultural production have been worked out, one with manual tapping of the Hevea tree, the others with mechanical extraction of guayule and gutta-percha. The mechanical processes are definitely unsuited to the thin Hevea bark, but may be adapted to the thicker latex layer of the Castilla tree. Both trees have been introduced in southern Florida and have reached the stage of flowering and seeding, so that local tests of cultural behavior and methods of extraction may be made.

The special value of Hevea as a plantation tree lies in its system of microscopic latex tubes branching and anastomosing as a continuous network through the inner bark, seeping the creamy fluid to a single cut, replenishing the wound area and restoring the bark pressure. Tapping is repeated by paring the rim of the cut, with the latex supply becoming more liquid and the flow increasing in successive days, the so-called "wound response." The method of wound renewal was discovered by Ridley at Singapore in 1889 and led to

commercial planting in 1896, twenty years after Wickham took the seeds from Brazil.

Castilla has simple latex tubes, not branched or connected, so that the Ridley tapping method does not apply, but the latex of Castilla is more abundant and was much easier to collect by the native methods, though the trees were soon exterminated. Castilla was tapped with many cuts, in Mexico by climbing the trees and gashing the bark obliquely, in South America by felling and circling the trunks. Several pounds of rubber were obtained, 30 to 50 pounds from large trees being credibly reported, though only a small part of the latex is forced out by the bark pressure.

An oxidizing enzyme in the sap of Castilla blackens and softens the rubber to a sticky paste, but simple heat treatments avoid such damage. Even in logs lying in the sun the enzyme may be destroyed, and the latex then coagulates in pale elastic threads that separate readily from decaying bark, as in retting for mechanical extraction. Small drops of pure latex sometimes exude when "scrap rubber" is pulled from tapping cuts and coagulate without discoloring. Castilla latex corked in glass bottles shows no visible changes, and was the "liquid rubber" brought from Central America for the early experiments in England by Hancock and Faraday, in 1822 and 1826. Records of Castilla go back to Bernardino de Sahagun, who reached Mexico in 1529 and wrote of "ulli" as a black elastic resin with many medicinal uses, and made into bouncing balls.

Many reference works convey the impression of Castilla being confined to Central America and Mexico, whereas even greater areas were occupied in South America, from Panama through Colombia, Ecuador, Peru, Bolivia and Brazil, including practically the entire range of *Hevea brasiliensis* in the Amazon valley, to Matto Grosso and Para. When Richard Spruce reached Brazil in 1849 commercial tapping of Hevea was "limited to the immediate environs" of Para, but