

## Magnetic Measurements and Biological Substances

In the last few years, magnetic measurements have been carried out which indicate that it is possible to get some additional information regarding the ionic configuration and the type of binding that exists in some of the complex biological substances such as hemoglobin.

F. Gruen and R. Hass [*Nature* 177, 378 (1956)] have investigated the "Magnetic properties of vitamin B<sub>12</sub>—the anti-pernicious anemia factor" [see *Science* 113, 55 (1951)]. The substance contains cobalt. The cobalt, apparently, is in a trivalent form since B<sub>12</sub> is diamagnetic. This checks with the hexacoordinated form of the compound as revealed by x-ray investigations. [For a general description of the behavior of vitamin B<sub>12</sub> and its structure, see A. W. Johnson and A. Todd, *Endeavour* 15, 29 (Jan. 1956)]. By following the magnetic measurements through the various stages of reduction, it is possible to follow the changes in the coordination and magnetic properties of cobalt and thus to elucidate the behavior of this rather complicated compound. When only about 150 micrograms of material are used in the sample tube, the measurements indicate that on reduction the contents become more paramagnetic.

Changes in susceptibility reflect the extent of the reduction as well as the degree of decomposition of the reduction products. The reduced form of the vitamin B<sub>12</sub> gives a molar susceptibility corresponding to 4 Bohr magnetons.

This is the lower limit for compounds containing bivalent cobalt, thus indicating that the cobalt atom in the reduction is bivalent.

## Merit Scholarships

According to figures compiled last week by the National Merit Scholarship Corporation, a very high percentage of the most able high school seniors are aiming for careers in science and engineering.

The N.M.S.C. assembled the figures from among the 5078 semifinalists who represent the pick of an original pre-selected 60,000 high-school seniors who took the first N.M.S.C. test on 26 Oct. 1955. The original group represented students picked by high-school principals throughout the nation as those among the top 5 percent of their senior classes.

Results show that 56 percent of the boys and 16 percent of the girls desire to become engineers or scientists. Chemistry, physics, and various engineering fields hold the strongest appeal for this group.

A further process of selection is now

being conducted to find the eventual winners of \$3 million in scholarships.

The N.M.S.C. was established last fall by grants totaling \$20.5 million from two leading foundations. Since then the N.M.S.C. has been conducting a nationwide hunt for the high-school seniors who are best able to benefit from a college education.

## News Briefs

■ As part of the safety precautions for the forthcoming nuclear tests at the Eniwetok Proving Ground, the U.S. Atomic Energy Commission has issued public notice of the danger area that will be established in the North Pacific Ocean effective 20 Apr. 1956.

The area is generally rectangular in shape and comprises roughly 375,000 square nautical miles. Although slightly smaller than the danger zone used in the latter part of the 1954 series, it is many times larger than the initial area used in 1954 and has been reoriented slightly for increased safety.

The forthcoming series of tests will involve weapons generally smaller in yield than those tested during the 1954 test series. It is expected that the energy release of the largest test will be substantially below that of the maximum 1954 test.

■ A Joint Blood Council, with headquarters in Washington, D.C., has been set up to coordinate the activities of some 1500 blood banks in the United States. The council will replace the Red Cross as the official blood-procurement agency in emergencies.

The council will have no banks of its own, but will assist local programs and try to devise some systems for standardizing, inspecting, and accrediting local banks. The American Medical Association, American Hospital Association, American National Red Cross, American Association of Blood Banks, and American Society of Clinical Pathology are represented on the council.

## Scientists in the News

PARKER D. TRASK, a lecturer in geological engineering in the division of mineral technology at the University of California and a specialist in petroleum engineering, has left for India to give a series of seminars at universities there. Trask will serve as the representative of the U.S. Geological Survey in connection with the State Department foreign aid program; he also has been appointed United States representative to the Golden Jubilee celebration of the Mining Institute of India.

HANS BELLER has been appointed manager of the new high-pressure acetylene products plant of General Aniline and Film Corporation at Calvert City, Ky.

HARROLD B. JONES has joined the research staff of American Smelting and Refining Company as a research coordinator for insecticides. With this appointment, American Smelting and Refining Company plans to accelerate its research program on arsenical insecticides in cooperation with the U.S. Department of Agriculture and land grant colleges.

LEONARD J. BRASS, associate curator in the department of mammals of the American Museum of Natural History, department of mammals, will head a scientific collecting team that will work for 9 months in the eastern islands of the Papua area. The expedition is sponsored by RICHARD ARCHBOLD, research associate of the museum and president of Archbold Expeditions, a nonprofit corporation affiliated with the museum. Working with Brass in New Guinea will be RUSSELL F. PETERSON, staff member in the department of mammals.

The expedition will work first on Normanby and Fergusson islands in the D'Entrecasteaux group, making extensive collections of mammals and plants. In addition to vascular plants, the group will collect mosses, liverworts, and lichens. Plans also call for field work on the Louisiades Archipelago and Woodlark Island, and for limited study and collection of reptiles, amphibians, fresh-water fishes, insects, and birds.

PHILIP B. PRICE, formerly chairman of the department of surgery and more recently acting dean, has been named permanent dean of the University of Utah College of Medicine. He will retain his position of professor in the department of surgery.

C. S. RHODE, professor emeritus of dairy science extension of the University of Illinois College of Agriculture, was honored at the annual meeting of the Illinois Purebred Dairy Cattle Association for his contributions to dairying, which included the organization of a cooperative artificial breeding association to serve northern Illinois.

HAL B. H. COOPER has joined American Potash and Chemical Corporation in the newly created position of director of development engineering. He is in charge of special engineering phases of new projects and developments at various company plants and will act as engineering adviser on pilot-plant research operations. Cooper previously

was assistant director in charge of development for Colgate-Palmolive Company.

ROGER REVELLE, director of the Scripps Institution of Oceanography at La Jolla, Calif. is one of nine specialists appointed by the director-general of UNESCO to serve on the newly established International Advisory Committee on Marine Sciences.

H. THERON THOMPSON, formerly assistant to the director of research for the General Aniline and Film Corporation at Easton, Pa., has been appointed as consultant on operations analysis at the General Electric Research Laboratory, Schenectady, N.Y.

MELVIN MARTENS, for the past 6 years an electronic scientist at the National Bureau of Standards, has been named an electronics project leader in the medical equipment division of the Colson Corporation, Elyria, Ohio. He has been assigned to development work in connection with electronic hospital equipment, including automatic blood pressure recorders and cuvette densitometers.

J. TH. G. OVERBEEK, director of the Van't Hoff Laboratory, Utrecht, the Netherlands, is delivering this year's Falk-Plaut lectures in chemistry at Columbia University. The subject of the lectures is "Electrochemistry of colloids and phase boundaries."

HEINZ G. F. WILSDORF, principal research officer of the National Physical Laboratory, Council for Scientific and Industrial Research, Pretoria, Transvaal, Union of South Africa, will join the staff of the Franklin Institute early in the summer as senior research metallurgist in the Solid State Physics Division. Wilsdorf has recently published several papers on the slip band formation and the surface structure of deformed aluminum. Some of his most recent work has concerned the study of dislocations as evidenced by precipitation in aluminum copper alloys.

RENNE S. JULIAN has been appointed technical director of the Hughes Aircraft Company guided missile laboratories. With Hughes since 1949, Julian previously served as head of the electronics department of the laboratories. His patents and publications include work in microwaves, electron tubes, and molecular beam measurements.

HUGO THEORELL, 1955 Nobel prize winner in physiology and medicine and director of the biochemical department of the Nobel Institute in Stockholm, Sweden, delivered the 52nd annual

Christian A. Herter lecture at the New York University College of Medicine on 5 Mar. He spoke on "Kinetics and equilibria in flavoprotein enzyme systems."

EDWARD J. HUGHES, manager of Eli Lilly and Company's analytical department for the last 25 years, retired on 29 Feb. During his service with Lilly, Hughes has been a leading proponent of the advancement of analytical methods and techniques through the use of instrumentation.



A native of Pennsylvania, Hughes was graduated from the Philadelphia College of Pharmacy and Science in 1916 with the degree of doctor in pharmacy. In 1925 he did graduate work in experimental organic chemistry at the University of Pennsylvania, and in 1938 he was awarded an honorary master of pharmacy degree by the Philadelphia College of Pharmacy and Science.

After a year's military service in World War I, Hughes returned in 1919 to the Philadelphia College of Pharmacy as an instructor and, later, assistant professor of chemistry. He joined Lilly in 1927 as assistant to the production superintendent and was transferred 2 months later to the formula control department as a pharmaceutical chemist; he has held his present post since 1930. Hughes has been a member of the editorial staff of Remington's *Practice of Pharmacy* for the last four editions and has been associated with many revisions of the *U.S. Pharmacopoeia*.

### Recent Deaths

MARY F. BABCOCK, Providence, R.I.; 61; authority on natural history; coauthor of a series of science textbooks; 2 Mar.

ANGELO E. BENAGLIA, Washington, D.C.; 48; biochemist; staff member of the National Academy of Sciences-National Research Council; 3 Mar.

CAMERON DUNCAN, Brooklyn, N.Y.; 80; clinical professor emeritus of obstetrics and gynecology at the State University of New York College of Medicine; 4 Mar.

LOWELL A. ERF, Philadelphia, Pa.; 48; assistant professor of medicine at Jefferson Medical College and assistant director of the Charlotte Drake Cardeza Foundation; 30 Jan.

ARTHUR FELIX, London, England; 68; former director of the Central Enteric Reference Laboratory; codiscoverer of the Weil-Felix reaction for typhus diagnosis; developer of the Vi-phase

typing method for tracing typhoid epidemics; 14 Jan.

WILLEM H. KEESOM, Leyden, the Netherlands; 79; professor of physics at Leyden University, 1923-45; specialist in low-temperature research and the first scientist to solidify helium; 4 Mar.

FRANKLIN DAVID KEIM, Hardy, Neb.; 69; chairman of the department of agronomy at the University of Nebraska, 1932-52; president of the American Society of Agronomy in 1943; secretary of AAAS Section O since 1954; 7 Mar.

CARL H. LAWS, Brooklyn, N.Y.; 71; former professor of pediatrics and professor of child health and welfare at Long Island College of Medicine; 29 Feb.

PATRICK J. MCKENNA, New York, N.Y.; 58; authority on horticulture; former assistant horticulturist at the New York Botanical Gardens; 2 Mar.

JOSEPH PRATT, Boston, Mass.; 83; emeritus professor of medicine at the Tufts College medical school; 3 Mar.

FRED T. ROGERS, JR., Columbia, S.C.; 41; head of the physics department at the University of South Carolina; 22 Feb.

JOHN H. VAN DEVENTER, Brewster, N.Y.; 74; engineer; former editor of *Iron Age*; 5 Mar.

### Grants, Fellowships, and Awards

■ Entries for the fourth annual Howard W. Blakeslee awards competition of the American Heart Association may be submitted through 1 May. The competition is open to newspaper and magazine articles, books, radio and television programs, and films published or produced between 1 Mar. 1955 and 1 Mar. 1956.

The number of awards to be made, each carrying a minimum honorarium of \$500, will be determined by the judges. Presentation of the awards will take place during the annual meeting of the AHA in Cincinnati, Ohio, 27-31 Oct.

■ A trust, estimated at slightly more than \$100,000, has been established at the University of Wisconsin by Joseph S. Daniels of Rhinelander, Wis., the income of which is to support a professorship in the University of Wisconsin Medical School. The holder of the professorship will be known as the Doctor Alfred D. Daniels professor on diseases of children. The Medical School plans to make an appointment to this professorship in the near future.

■ A series of special scholarships aimed at increasing the number of adequately trained secondary school science teachers has been established at Massachusetts Institute of Technology. Beginning next fall the institute will award a number of scholarships in amounts ranging up to