this country from China to head the department of zoology at Wheaton College, died on March 1 from injuries received when he was struck by an interurban trolley. Professor Howard was an entomologist of wide experience in this country, in Africa and in China. For the past eleven years he was connected with Lingnan University at Canton and since 1923 he was director of the Government Bureau for the Improvement of Sericulture in Kwongtung Province, a position which he held at the time of his death. He was fellow of the London Entomological Society and member of the Pan-African Trypanosomiasis Commission and was a member of the First International Congress of Entomology held in Brussels in 1909. He was to have served as chairman of the sericultural section of the Fifth International Congress of Entomology, meeting in August of this year in Ithaca.

THE annual meeting of the Kentucky Academy of Science will be held on May 12 at the University of Kentucky. The invited speaker will be Dr. E. C. Stakman, plant pathologist of the University of Minnesota, who will also represent the American Association for the Advancement of Science at the meeting. Dr. A. M. Peter, of Lexington, is secretary of the academy and the division secretaries are: Physical sciences, Professor C. S. Crouse, University of Kentucky; biological sciences, Professor E. N. Fergus, Experiment Station, Lexington; philosophy and psychology, Dr. M. A. Caldwell, University of Louisville.

A GROUP of scientific men at Princeton who are interested in "analysis situs" is organizing an informal conference on the subject immediately preceding the April meeting of the American Mathematical Society in New York City. At that meeting there will be held an extensive symposium on all phases of analysis situs, but it is believed that a conference such as planned will provide closer contact and a more thorough exchange of ideas than can take place at a general meeting of the society. The topic to be considered will be "The Ideal Organization of the Subject Matter of Analysis Situs as it Stands To-day." There is, however, no idea of holding to this subject should the discussion develop in some other direction. The formal meetings of the conference will take place on Wednesday and Thursday, April 4, 5, at 2:30, Room 312, Palmer Physical Laboratory. In addition to the members of the Princeton group (Alexander, Alexandroff, Hopf, Lefschetz and Veblen) the participation of Professors Chittenden, Kline and Morse has been assured.

AT the annual council meeting of The History of Science Society, held in New York at Teachers College, Columbia University, on February 25, officers for the year were elected as follows: *President,* Dr. Edgar F. Smith, University of Pennsylvania; *Vice-Presidents,* Dr. John C. Merriam, Carnegie Institution of Washington, and Dr. James Harvey Robinson, 173 Riverside Drive, New York; *Recording Secretary,* Dr. Harry Elmer Barnes, Smith College; *Corresponding Secretary* and *Treasurer,* Mr. Frederick E. Brasch, Library of Congress; *Editor of Isis,* Dr. George Sarton, Harvard University; Members of the Council to serve until 1930, Dr. J. McKeen Cattell, editor of SCIENCE; Dr. Florian Cajori, University of California; Dr. George S. Brett, Toronto University; Dr. Lao G. Simons, Hunter College, New York, N. Y., and Dr. C. A. Browne, U. S. Bureau of Chemistry.

THE Civil Service Commission announces an examination for the position of chief of the Bureau of Dairy Industry, Department of Agriculture. The examination will consist solely of the consideration of qualifications by a special examining board. The entrance salary for the position is $6,000. Applications must be on file with the commission in Washington not later than April 3.

UNIVERSITY AND EDUCATIONAL NOTES

THE Columbia University-Presbyterian Hospital Medical Center, which has been under construction for three years, was opened to public inspection for the first time on March 16. Six units were opened. They were the Presbyterian Hospital, the Sloane Hospital for Women, the Squier Urological Clinic, the Presbyterian Hospital School of Nursing Practice, the Harkness Pavilion and the Anna C. Maxwell Hall for Nurses. On March 19 the Presbyterian Hospital will begin to move to its new quarters. The College of Physicians and Surgeons, the School of Dental and Oral Surgery and the State Psychiatric Institute will move to the Center during the coming summer.

GIFTS amounting to $2,000,000 have been made to the $15,000,000 endowment fund for the six American colleges in the Near East since the nation-wide campaign for funds started on December 2. These gifts bring the total endowment up to $9,010,760, plus the $1,000,000 from the Rockefeller Foundation for Medical Work at the University of Beirut.

GROUND has been broken at the University of Washington for a new physics building to be built at a cost of $465,000. This will be the first unit of a science group at the university. The building, a four-story structure of Gothic design, will cover an area of 80 by 230 feet and will be from 50 to 60 feet in height. The building is expected to be ready for occupancy by November of this year.

ACCORDING to the *Journal* of the American Medical Association, Tokyo Imperial University has decided to

establish a course in hormone chemistry in the medical department beginning in April. This is said to be the first course of its kind. The cost of maintaining the laboratory for the course has been donated by the Society for the Advancement of Pharmacology in an amount believed to be between 200,000 and 300,000 yen. Dr. Akira Ogata will be promoted to the rank of professor and placed in charge of the laboratory; he has been studying hormone chemistry in Europe for two years.

WILLIS A. SLATER, engineering physicist of the U. S. Bureau of Standards, has been elected research professor of engineering materials and director of the Fritz engineering laboratory in the department of civil engineering at Lehigh University.

DR. BENJAMIN ALLEN WOOTEN, professor of physics at Washington and Lee University, has been appointed head of the department of physics of the University of Alabama. Dr. Robert W. Dickey, professor of electrical engineering in the university, will replace Dr. Wooten as head of the physics department for the coming year.

DR. T. L. PATTERSON, professor of physiology at the Detroit College of Medicine and Surgery, has been appointed acting professor of physiology for the summer quarter of 1928 at Stanford University and will be located at the Hopkins Marine Station, Pacific Grove, California.

THE summer session of Cornell University, which will open on June 30, will have on its teaching staff thirty professors from colleges and universities in addition to regular members of the Cornell faculty. These include in geography and geology: Dr. Collier Cobb, of the University of North Carolina; Professor Harry Leighton, of the University of Pittsburgh; Dr. J. P. Rowe, of the University of Montana; Professor M. H. Stow, of Washington and Lee University. In physics: Dr. William F. G. Swann, of the Franklin Institute; Professor Robert E. Loving, of Richmond College; Carl A. Heeler, of Columbus, Ohio.

WILSON F. BROWN, instructor in chemical engineering at the Ohio State University, has been appointed to an associate professorship at the Kansas Agricultural College to take charge of the work in industrial chemistry and chemical engineering.

THE electors to the newly-established Rouse Ball professorship of mathematics at the University of Cambridge have elected John Edensor Littlewood, F.R.S., fellow of Trinity College and Cayley lecturer in mathematics, to the professorship.

DR. GEORG B. GRUBER, of Innsbruck, has been appointed professor of pathology at Göttingen.

DISCUSSION AND CORRESPONDENCE

OXIDATION-REDUCTION REACTIONS

IN a recent delightful address of Professor Albert P. Mathews[1] he states that it remained for the *physical chemist* to discover what was really at the bottom of oxidations, namely, that when an oxidation takes place one or more electrons are lost by the substance oxidized. This view does, indeed, prevail to-day but in the numerous recent papers which have been written to explain oxidation in the light of the electron theory, no one, apparently, has attempted to trace back this idea to its origin. The reason for this is probably that the original publication took place long before the electron theory had been enunciated and our present conception of oxidation-reduction reactions was not due at all to one who might be called a "physical chemist."

In the third edition of Douglass and Prescott's "Qualitative Analysis," published in 1880, special attention is called to the chapter on oxidation-reduction written by Otis Coe Johnson on the basis of the theory of *negative bonds*. This section appears as Part IV of the fourth edition published in 1883, and the section by Johnson is mentioned on the title page of this fourth edition as well as in the preface to the third edition. Later editions of this well-known book bear the name of Prescott and Johnson as authors. If one substitutes the word *electron* for what Johnson called a *negative bond*, it is clear that his theory is exactly the same as that which has been rediscovered by so many of the younger chemists during recent years. Inasmuch as it is not very far-fetched to call an electron a negative bond, it seems rather remarkable that Johnson in 1880 should have anticipated so closely the present electronic conception of oxidation.

Another statement occurs in Professor Mathews' address which illustrates how long an old theory will persist in literature. He writes "And when the electrical and electronic nature of valence was finally understood, *a few years ago*, it was seen that in every case of oxidation the oxidized substance lost a negative electron and thus gained a positive charge, in other words in every oxidation there is always a *flow of positive electricity, since the current is always supposed to be in the direction of movement of the positive, from the oxidizing to the oxidized body.*"

Such a statement is likely to lead to confusion. Since even the high-school pupil of to-day knows that the so-called "flow of electricity" is theoretically a flow of electrons, it is absolutely inconceivable that there should be such a thing as a flow of positive electricity. It is quite true that some fifty years or so

[1] "Some Applications of Physical Chemistry to Medicine," SCIENCE, 66, 606, 1927.