absorb knowledge more rapidly and remember it better? Will his imagination be keener, will he reason out his problems more effectively; and, above all, will his life and conduct be controlled by his intellect rather than by his feelings? If so, he may be able to take knowledge in larger doses, profit more by the stored-up experience of others, instead of merely his own, and by the lessons of history. He should be far more educable than any earlier species in the family.

It may be objected that these speculations are hardly optimistic, that they do not present a hopeful picture, and that they do not necessarily envisage continued progress toward a far higher and better human world. To this I must reply that a scientist is under no obligation to be an optimist. His only concern must be to approach nearer to the truth. If the truth offers hope, we may all rejoice. If it fails to do so, we are not thereby justified in denying or even ignoring it. As King Solomon long ago advised, let us get understanding, and by so doing we may reach a serenity of outlook that will fit us better to play a worthy, even though minor, part in the great drama of human evolution.

OBITUARY

CHARLES WALLIS EDMUNDS

CHARLES WALLIS EDMUNDS was born on February 22, 1873, in Bridport, Dorset, England, the son of Thomas Hallett and Caroline (Wallis) Edmunds. In 1883 Thomas Edmunds moved his family to America and established their new home in Richmond, Indiana. There Charles Edmunds received his preliminary education, including a year at the University of Indiana, and from there he went to Ann Arbor in 1896. In Ann Arbor he completed his undergraduate training, found his life work, and established his own home. He was graduated from the University of Michigan, Department of Medicine and Surgery, which later became the University of Michigan Medical School, in 1901. In the following year, as an interne, his keen observation in a cardiac case attracted the attention of Professor Cushny, and thus his association with pharmacology was begun. Keen observation indeed became the keynote of his laboratory teaching. He believed that students too easily lost the purpose and meaning of an experiment in concentration upon the proper handling of mechanical devices.

In 1902 Dr. Edmunds became assistant to Professor Cushny in the Department of Materia Medica and Therapeutics of the University of Michigan and in 1905 assumed the direction of the department when Cushny returned to England, an early recognition of his leadership. In 1907 he was named professor of materia medica and therapeutics and later the phrase, director of the Pharmacological Laboratories, was added. The former title was retained to carry out the connection between the old materia medica and the new science of pharmacology, at that time still in the pioneer stage.

In 1905 Dr. Edmunds worked with Gottlieb and Magnus at the University of Heidelberg, in 1907 with Cushny at University College, London, and in the summers of 1908 and 1909 he worked at the Hygienic Laboratory, now the National Institute of Health, in Washington. The connection with the last institution was of the greatest importance, as it led to the close cooperation of the laboratory at Ann Arbor with various national organizations.

Dr. Edmunds held many responsible posts in and out of the university whereby he demonstrated his keen interest in medical education and in the development of pharmacology, and he brought to these tasks an unsurpassed art of gracious dignity and diplomacy. He was secretary of the Medical School from 1911 to 1921, assistant dean from 1918 to 1921, a member of the executive committee of the Medical Faculty from 1936 to 1939, and in 1937 he was appointed to the executive committee of the Graduate School. He was a member of the U. S. Pharmacopeial Convention from 1910 onward, served as chairman of its most important committees, and was elected to its presidency in 1940. He served on the Council of Chemistry and Pharmacy of the American Medical Association from 1921 and was chairman of the committee of the Council on Grants to support research on problems connected with therapeutics. He was prominently identified with the executive committee of the National Research Council in 1939 and was a member of its drug addiction committee from 1930. As a signal distinction he was appointed to the International Committee on Drug Standardization, Health Committee of the League of Nations, and in 1925 participated in its deliberations in Geneva.

Standards might be termed the theme of Dr. Edmunds's life and work. Recognition of his abilities in this respect came to him early. For example, he was a member of the committee for revision of the U. S. Pharmacopeia in 1910–1920, 1920–1930 and 1930–1940. In the first instance he was chairman of the committee to make recommendations regarding bioassay methods, and the studies of this committee led to the introduction of such methods into U.S.P. IX, the first pharmacopeia in the world to make bioassay methods obligatory.

Standardization of digitalis was an early and con-

tinuing interest. More recently anti-anemic preparations gained a considerable portion of his attention, so that he was made chairman of the Pharmacopeial Advisory Board having control over potency claims for all official liver and stomach preparations used for the treatment of primary anemia. Dr. Edmunds's prominence in connection with pharmaceutical standards was based upon not only his interest but his own research work, the underlying object of which was improvement in therapeutics. Outstanding were his observations upon the effect of intravenous injections of dextrose in the treatment of diphtheria complicated by circulatory collapse, observations which have saved the lives of many individuals. Dr. Edmunds probably considered this his most important contribution to pharmacological research, for he made it the subject of his lecture delivered upon the occasion of his selection in 1937 as Henry Russel lecturer at the University of Michigan, the highest faculty honor award.

Dr. Edmunds not only was a keen observer but had a sharp perception of the underlying meaning of important situations and conferences. He was a friendly, sympathetic counselor and, although chary of direct advice, adept at finding the means to a solution or decision without it; in other words, eager and able to help one to help oneself. He loved and respected tradition and in pharmacological teaching helped to create it. He came into the field when laboratory teaching had only just been made a part of medical education and was vigorous in cultivating its growth. He was co-author with Cushny of "A Laboratory Guide in Experimental Pharmacology," the permanent form of their instructions to the students. Through the years this guide has been modified, but its principles still direct the laboratory work in pharmacology at Michigan. Also the text-book of pharmacology which Cushny took seven years to write was repeatedly and ably revised by Dr. Edmunds at great expense in time and effort.

There has been in the past much opposition to the existence of pharmacology as a separate entity in the medical school, resulting too often in its treatment as a step-sister of physiology or biochemistry. Against such treatment Dr. Edmunds took a strong stand. Closely related were his views upon the standards of pharmacology and pharmacologists and his insistence on freedom from commercialism.

Dr. Edmunds's authority and ability as a director and his relations with such bodies as the National Research Council brought to the University of Michigan at least two large research projects, the work of which was vastly aided by his scientific interest and informed advice. One of these was the pharmacological part of the coordinated investigation of the relation of chemical structure and physiological action among morphine derivatives and related substances as a means of attack upon the drug addiction problem. The other project was an extensive investigation of caffeine, coffee and decaffeinated coffee.

Dr. Edmunds possessed artistic abilities which he found time to employ in two directions. He was a great lover of flowers, and in the springtime his hyacinths and tulips were worth going far to see. For more than twenty years his summer holidays were spent at Monhegan, Maine, and most of the time there was devoted to painting in water color. In spite of the fact that his hand was idle in this field for the remainder of the year, each summer saw the execution of very fine work which was exhibited with distinction in many places.

In the death of Dr. Edmunds the University of Michigan Medical School lost a fine teacher and counselor, his associates an inspiring leader, and the science of pharmacology one of its ablest pioneers.

NATHAN B. EDDY

RECENT DEATHS

DR. ANNIE JUMP CANNON, astronomer of the Harvard Observatory, died on April 13 at the age of seventy-seven years.

WILLIAM REMSEN APPLEBY, professor of metallurgy and dean emeritus of the School of Mines of the University of Minnesota, died on April 8 at the age of seventy-six years.

DR. REUBEN EDSON NYSWANDER, professor of physics and electrical engineering and dean of the School of Science and Engineering of the University of Denver, died on April 8 at the age of sixty-three years.

DR. FRANK CLINCH HAMMOND, professor of gynecology and honorary dean of the School of Medicine of Temple University, died on April 12. He was sixty-six years old.

DR. HUGO KAHL, curator of entomology at the Carnegie Museum, Pittsburgh, until last January when he became curator emeritus, died on February 19 in his eighty-second year.

HENRY OSBORN TAYLOR, distinguished for his work on the history of civilization, died on April 13 at the age of eighty-four years.

SCIENTIFIC EVENTS

GRANTS AND FELLOWSHIPS OF THE AMERICAN COLLEGE OF DENTISTS

THE American College of Dentists offers each year a small number of grants-in-aid and research fellowships. These are intended primarily for individuals preparing themselves for a career as teachers and