call this *defensive* research; it is the method by which we defend ourselves against a host of hostile forces. Second, we have to have another even more far-reaching kind of research that looks to the future. You might call this *aggressive* research. Certainly we are not entirely satisfied with the civilization we have to-day. We want to go forward, to build a still better civilization. And as science made our present civilization possible, I believe it will also make possible the better civilization of the future if we keep on with *aggressive* research in all the sciences, natural and social.

OBITUARY

WAYNE J. ATWELL

IN the untimely death of Dr. Wayne J. Atwell on March 27, the University of Buffalo has lost one of its most valued teachers and administrators, and the world of science has been deprived of one of its ablest and most energetic investigators.

Wayne J. Atwell was born in Fairfield, Nebraska, in 1889. After graduation from Nebraska Wesleyan University in 1911, he entered the University of Michigan as a medical student. Becoming interested in the morphological sciences, he discontinued the study of medicine, and under the inspiration and guidance of the late Dr. G. Carl Huber, began his career as a teacher and investigator. He was granted the degrees of A.M. and Ph.D. by the University of Michigan in 1915 and 1917, and served as assistant or instructor in the anatomy department of that institution until he was appointed professor and head of the department of anatomy of the University of Buffalo in 1918. In the latter institution, after several years spent in building up his department and its staff, he was able to continue his medical studies on a part-time basis, and was awarded the degree of doctor of medicine in 1934.

Dr. Atwell's first contribution to the literature of science was a paper on the relation of the notochord to the hypophysis, published in the *Anatomical Record* in 1915. In the same issue of the *Record* he published a shorter article describing the conversion of a photograph into a line drawing.

During his graduate study under Dr. Huber he acquired skill in a variety of techniques and procedures which were of value in his later investigations, the results of which were usually elucidated in his papers by excellent drawings of sections, models or reconstructions, or by skilled photography. His thorough and critical study of the development of the hypophysis of the rabbit, on which he prepared his doctor's dissertation, fixed his interest in the morphology and function of that organ and determined the trend of his later research. The morphology of the organ, sometimes with particular reference to its pars tuberalis, was treated in a series of papers on its embryology in the tailed amphibia, in man, and in the chick; his last completed scientific paper, which appeared during the month of his death, dealt with the morphology of the hypophysis in several species of toads. These various embryological and anatomical studies were supplemented by an investigation of the histology of the pars tuberalis, and a study of the Golgi apparatus in the cells of the anterior lobe.

The numerous morphological studies mentioned above naturally led to an interest in the functions of the several parts of the hypophysis and stimulated the experimental work which constitutes much of Dr. Atwell's later contribution to our knowledge of the organ. Beginning in 1919 with a short report in SCIENCE, he published a number of papers dealing with the relation of the pituitary to pigmentary changes in the amphibia, and the nature of the pigmentary responses in these animals; his latest investigation in this field was to have been presented before the American Association of Anatomists at its April meetings in Chicago. He also investigated by experimental methods the thyreotropic and adrenotropic hormones of the anterior lobe, as well as certain pituitary-adrenal-gonad relationships; and he attempted through the use of extracts prepared from it, to determine the functional role of the pars tuberalis. He developed methods of transplantation of the pituitary anlage in amphibia and utilized hypophysectomy with and without such transplantation in several of his more recent studies. All in all, he played a highly important part in the establishment of our present concepts of pituitary structure and function.

In addition to his many papers on the hypophysis, Dr. Atwell reported (or aided his students to report) certain of the more rare anatomical anomalies encountered in the dissecting room. His outstanding work outside the field of his pituitary investigations, however, is his painstaking study of an early human embryo, published in the Carnegie Contributions to Embryology in 1930. This embryo has since been mentioned and figured in text-books of embryology as the Atwell embryo.

At various times Dr. Atwell served on the staff of *Biological Abstracts, Endocrinology* and *The American Journal of Anatomy*. He also served as president of the Western New York Branch of the Society for Experimental Biology and Medicine and as a mem-

ber of the Executive Committee of the American Association of Anatomists. That his various contributions to science were highly regarded by his fellow anatomists is evidenced by the fact that he was recently chosen as one of the ten anatomists to be added to the "starred" group in "American Men of Science."

Dr. Atwell's work as a teacher and administrator at the University of Buffalo made him one of the most admired, respected and beloved members of its faculty. As a teacher he had few equals; as an administrator he displayed rare tact and skill; and as a friend and counselor he won the regard and affection of his students and colleagues alike. His home, with Mrs. Atwell as a charming and gracious hostess, was often the scene of friendly informal social gatherings of his departmental staff or other faculty colleagues. His enthusiasm for and enjoyment of the out-of-doors will long be recalled by his fortunate companions on picnics, collecting jaunts, and canoeing and camping trips. In the several honorary and social fraternities of which he was a valued member, in his church, to which he gave freely of his time and efforts, and in the suburban community in which he lived, his loss will be keenly felt. His own life was rich in accomplishment and made happy by a wide variety of interests, and he left an inestimable number of others the richer for his association with them as teacher and friend.

R. R. HUMPHREY

UNIVERSITY OF BUFFALO

RECENT DEATHS

DR. OTIS ELLIS HOVEY, consulting civil engineer of New York City, died on April 15 at the age of seventy-seven years.

DR. CHARLES RUSS RICHARDS, president emeritus of Lehigh University, previously dean of the College of Engineering of the University of Illinois, died on April 17. He was seventy years old.

DR. FRED KUHLMANN, chief of the Division of Research of the Minnesota State Department of Public Institutions, died on April 19 at the age of sixty-five years.

Nature announces the following deaths: Dr. C. R. M. F. Cruttwell, formerly principal of Hertford College, Oxford, on March 17, aged fifty-three years; J. P. Gilmour, from 1916 to 1933 editor of the *Pharmaceutical Journal,* on March 10, aged eighty years, and E. L. Ince, lecturer in technical mathematics at the University of Edinburgh, on March 16, aged forty-nine years.

SCIENTIFIC EVENTS

THE PERMANENT SCIENCE FUND OF THE AMERICAN ACADEMY OF ARTS AND SCIENCES

INCOME from the Permanent Science Fund, according to agreement and declaration of trust, shall be applied by the American Academy of Arts and Sciences to such scientific research as shall be selected. Applications for grants under this trust are considered by the committee of the academy on stated dates. To be considered at the next meeting of the committee, applications must be in the hands of the chairman of the committee, Professor John W. M. Bunker, Massachusetts Institute of Technology, Cambridge, Mass., on or before October 1.

Grants in aid from this fund were authorized by the academy on March 12, 1941, as follows:

Robert B. Dean, junior instructor, University of Minnesota, for the study of bimolecular films, $200.

Dr. Nicholas T. Werthessen, Endocrine Laboratory, Boston Dispensary, for assistance in the study of ovarian disfunctions, $720.

Graham P. DuShane, instructor in zoology, University of Chicago, for assistance in the investigation of reflexes through isolated motor cells, $400.

Donald D. Brand, professor of anthropo-geography, University of New Mexico, for materials and field expenses of an archeologic study of the occupation sequence in the middle Rio Balsas area, Guerrero and Michoacan, Mexico, $405.

Charles B. Davenport, retired, of the Carnegie Institution of Washington at Cold Spring Harbor, for assistance in completing the analysis of certain biometrical studies on children, $200.

Joseph S. Butts, professor of biochemistry, Oregon State College, for expendable materials and for assistance in continuing his study of the Intermediary Metabolism of Amino Acids, $350.

Paul A. Vestal, research curator, Botanical Museum, Harvard University, for expendable materials, assistance, and certain field expenses, in connection with an ethnologic study in the economic botany of the Ramah-Atarque Navaho Indians, $300.

George W. Kidder, assistant professor of biology, Brown University, for assistance in studies of substances produced by living cells which accelerate or inhibit the proliferation of other cells, $450.

Barry Commoner, tutor, department of biology, Queens College, Flushing, N. Y., for equipment to permit continuation of a biochemical investigation of the relation between auxin, respiratory mechanisms and growth in plant cells, $350.

Vincent G. Dethier, instructor in biology, John Carroll University, Cleveland, Ohio, toward expenses of a study of the chemistry of food plants chosen by larvae of certain species of Chrysophanus in North America, $200.

Margaret Harwood, director, Maria Mitchell Observatory, Nantucket, Mass., for assistance in a study of the form and motions of Eros, $400.

Frederick Johnson, curator, Robert S. Peabody Founda-