similarly and differently spaced groupings of all kinds. The discovery that simple substances, chemically related to the hapten, inhibited the specific precipitation of the new antigen and its antibody in proportion to the nearness of relationship to the entering group greatly facilitated the testing of large numbers of substances and made unnecessary the often difficult process of preparing an antigen with each. With this material, he was able to discuss and describe immunological specificity in terms of known chemical groupings of simple structure. Perhaps the most spectacular outcome of this work, and a closer point of contact with the specificity of native proteins, was the demonstration with van der Scheer that the order of amino acids in di-, tri- and tetra-peptides was a major directive influence on the specificity.

Landsteiner's book, "The Specificity of Serological Reactions," not only summarizes these researches but places them in their proper perspective in a broad field in masterly fashion.

Of prime importance, also, has been the long series of investigations carried out by Landsteiner and Chase on skin-sensitivity to simple chemical compounds, a study which laid a scientific basis for new concepts of allergy and its mechanisms. Especially noteworthy was the finding that sensitization results most easily from compounds capable of combining with reactive protein groupings and thus presumably forming new antigens foreign to the organism. And no less important were the final joint studies of these collaborators, as yet unpublished and unfinished, on the transfer of acquired sensitivities of this type.

In the laboratory, Landsteiner was the authoritative and energetic director of research; but outside, in his personal contacts, he was diffident, shy and quiet, though his flashes of genial wit were apt to enliven any conversation in which he took part. When he did address a gathering, he was stimulating, inspiring and brief. He played the piano with a sensitive touch and musicianly understanding, but was as reticent in exhibiting these talents as he was in talking of his work.

Dr. Landsteiner's wife and their son, a surgeon, survive him, but he is mourned as well by a host of friends and scientists who not only revered him for his intellect and attainments, but for his genial accessibility and inspiring counsel, as well.

MICHAEL HEIDELBERGER

C. STUART GAGER

AMATEUR and professional horticulturists and botanists have lost a leader and a friend in the death of Dr. Charles Stuart Gager, director of the Brooklyn Botanic Garden, after a short illness, at Waterville, Maine, on August 9.

Dr. Gager was born in Norwich, N. Y., on December 23, 1872, the son of Charles Carroll Gager and Leora Josephine Darke Gager. He received his A.B. degree from Syracuse University in 1895. The New York State Normal College at Albany conferred degrees of bachelor and master of pedagogy on him in 1897, and he received the Ph.D. degree in botany from Cornell University in 1902. Syracuse University gave him the D.Sc. in 1920, and the New York State Normal College a doctor of pedagogy in 1921. In 1902 he married Bertha Woodward Bagg, and two children, Benjamin Stuart (deceased) and Ruth Prudence (Mrs. Kenneth G. Bucklin) were born.

Beginning as a laboratory assistant at Syracuse University in 1894–95 he became vice-principal of the Ives Seminary at Antwerp, N. Y., in 1895–96; professor of biological sciences and physiography at the New York State Normal College, 1897–1905; director of laboratories at the New York Botanical Garden, 1906–08; and professor of botany at the University of Missouri, 1908–10. In addition he taught for short periods at the Morris High School in New York City, at Cornell University, Rutgers University and New York University. In 1910 he was called to become director of the Brooklyn Botanic Garden, to the development of which he devoted the balance of his life. Starting with an area of waste land he created one of the outstanding institutions of its kind.

His botanical interests were primarily physiological and, while associated with the New York Botanical Garden, he initiated one of the earliest investigations of the effect of radium upon plants. Administrative duties and other demands prevented him from developing what might easily have become a brilliant career in research.

Always generous with his energy and his time he served on many committees and boards of horticultural and botanical organizations. His addresses, freely given on numerous occasions, were carefully prepared and always spiced with humor and some unusual or unique point of view. In spite of his numerous other duties and activities, he found time to publish several books on teaching, botany and genetics, and to act as editor or business manager of important botanical periodicals, including the *American Journal of Botany, Ecology* and *Genetics.*

Among other societies Dr. Gager was a member of Phi Beta Kappa and of Sigma Xi and an honorary member of the Royal Agricultural and Horticultural Society of India, of the Pennsylvania Horticultural Society and of the School Garden Association. He served as president of the Botanical Society of America; of the Torrey Botanical Club, of the National Institute of Social Sciences and of the Twentieth

Century Club of Brooklyn. An active member of the International Flower Show Committee, he served also on several committees of the National Research Council. He was vice-chairman of the board of directors of the Horticultural Society of New York for many years, and for eight years a trustee of Adelphi College. He was a director of the Bermuda Biological Station for Research and of the New Jersey Federation of Shade Tree Commissions. In 1941 he received the Arthur Hoyt Scott Garden and Horticultural Award.

Few men have been able to combine, as Dr. Gager did, horticulture and botany, education and research, the applied and the scientific, civic interests and professional duties. A man of the highest ideals, Dr. Gager did not hesitate to oppose attitudes, ideas or trends which he considered unwise or ill considered or to correct erors in fact or statement in the fields with which he was familiar. Yet no worthy project related to his fields of interest failed to receive quick and generous support. His career illustrates how much can be done by a man of ability who devotes himself consistently and conscientiously to a subject he considers worthy of his utmost effort.

WILLIAM J. ROBBINS

DEATHS AND MEMORIALS

DR. ALEŠ HRDLIČKA, since 1910 curator of the Division of Physical Anthropology of the U. S. National Museum of the Smithsonian Institution, of which he had been in charge since 1903, died on September 5 at the age of seventy-four years.

DR. H. JUSTIN RODDY, formerly curator and professor of geology at Franklin and Marshall College, died on September 4 at the age of eighty-seven years. Dr. Roddy joined the faculty of Franklin and Marshall College in 1922. He had previously been a member of the faculty of the Millersville State Teachers College.

DR. ARTHUR PEHR ROBERT WADLUND, professor of physics at Trinity College, Connecticut, died on September 1 at the age of forty-seven years.

DR. THOMAS GILBERT PEARSON, president emeritus of the National Association of Audubon Societies, died on September 3 at the age of sixty-nine years. He resigned from the presidency of the association in 1934, after serving for fourteen years. He had previously been secretary and executive officer of the society.

JOHN K. GORE, mathematician, until 1934 president of the Prudential Insurance Company, died on June 22, at the age of seventy-nine years.

THE death is announced of Dr. Willem A. J. M. Van Waterschoot van der Gracht, formerly inspector general of state mines in the Netherlands, who had been connected with ore and petroleum companies in the United States and Canada.

THE life and work of Alexander Wilson, author of the first American ornithology, will be the subject of the October number of *Frontiers,* the magazine of the Academy of Natural Sciences of Philadelphia. On the evening of October 20, Dr. Cornelius Weygandt will address members of the academy and guests on the place of Wilson in American life, science and art. On account of limited editions imposed by the war, those wishing to have the special Wilson number of *Frontiers,* which will appear on September 15, should apply at once.

SCIENTIFIC EVENTS

SCIENTIFIC RESEARCH IN GREAT BRITAIN

IN the British House of Lords on July 20 there was a continuation of the debate on a motion by Viscount Samuel calling attention to the need for the further expansion of scientific research. Lord Dawson pointed out that "It was difficult to overstress the importance where science was concerned—and this applied equally to medicine—of preventing the enmeshment of any research body in the close entanglement of a Government department. One of the chief reasons why these research bodies should receive further support was that they succeeded in combining good order in the work of men of ability with freedom for scientific investigation."

Lord Cherwell said in part "that the importance, from the economic point of view, of fostering pure fundamental research could not be overlooked.

The Government recognized that pure research must be, in a large measure, its responsibility and must be done at the universities; but naturally, they also wished to encourage industry to spend money on pure research. It was the Government's policy and intention to increase its aid for research, and it would welcome any developments of industry in a similar direction. The treatment of scientists in the Civil Service had been mentioned, and he frankly admitted that the Civil Service had not hitherto shown due regard for the contribution scientists were making to the nation's welfare. This matter had now been reviewed, and an investigation had been in progress to make sure that the conditions of service, pay and prospects of Government scientific employees compared favorably with those on the administrative side. He hoped that a definite announcement on these reforms might be made before long. There were probably not more than a few dozen physicists in Great Britain capable of evolving and developing new applications of, say, the various radio