

his Ph.D. degree at Washington University. From 1903 to 1907 he was instructor in general biology there. In the latter year he became investigator at the Station for Experimental Evolution (Carnegie Institution of Washington) at Cold Spring Harbor, Long Island, and continued there for seventeen years. In 1924 he was called to the chair of botany at the University of Minnesota where, as head of the department, he developed it in masterly fashion.

From the time of his attachment to the Carnegie Institution, Harris spent some time in other institutions and in the field. During 1908-09 he studied biometry under Karl Pearson at London. In the winters of 1912-13 he worked at the Desert Laboratory, Tucson, of the institution, and thereafter spent winter months at Tucson, at Jamaica, South Florida, and, in collaboration with the Bureau of Plant Industry, in the cotton experimental fields of the Southwest. This last work he continued after going to Minnesota. The Weldon medal and memorial prize of the University of Oxford were awarded to him in 1921.

Harris was one of the most industrious of investigators and prolific of writers in biology. Not infrequently he published fifteen or more papers in a single year. These covered a great range in detail, but fell into the following general classes: ecology, experimental evolution, biometry. His first paper, published in Kansas, 1900, was an annotated "Catalogue of the Crayfishes of Kansas," and this was followed by several papers on the crayfishes, culminating in his "Ecological Catalogue of the Crayfishes belonging to the genus *Cambarius*, 1903," which was, apparently, his doctor's thesis. In 1901 he published his first botanical paper ("Normal and Teratological Thorns of *Gleditschia*"). In 1903 he published on floral abnormalities and this topic interested him for many years; it led him particularly to consider the subject of variation in seeds in capsules. He became much interested in the pure-line theory and tested it out with beans. This led him to grow over a million seedlings. He discovered biotypes that had extra cotyledons.

A second series of papers grew out of his ecological interest. With R. A. Gortner he worked out a method of determining density of plant saps. This led to observations in the tropics and elsewhere and to the discovery of the greater sap density of parasitic plants over their host plants. It led to a study of the chemical differences in races of cottons corresponding to their morphological differences.

The third great interest of Harris was biometry. He had the statistician's love of numbers and he applied the Pearsonian methods to a great variety of animal and plant data, such as the egg laying of fowls, basal metabolism in man (with F. G. Benedict), and

seedlings of the bean. His biometric work led him to work out new formulae of which many are of particular interest to geneticists.

Through all of Harris's work runs evidence of his interest in problems of evolution. He published not only on organisms in relation to environment, but also repeatedly on natural selection and on assortative mating (in man).

Of the personal traits shown by Dr. Harris, unlimited industry is one of the most striking. He never spared himself, and on one occasion when the nature of his research demanded continuous observation he worked during the midnight and early morning hours throughout the winter. He organized a biometric laboratory at Cold Spring Harbor and supervised the work of a large corps of assistants. In the field his energy was boundless. At Minneapolis he catalyzed a somewhat dormant botanical group, so that his department soon rose to a high rank. Harris had remarkable social traits. He inspired loyalty in his associates in the laboratory and in the field. His hospitality, with that of Mrs. Harris, was unbounded, and their home was the center of many social meetings of his associates. He was particularly happy in his married life. Mrs. Harris (Emma Lay) was also a naturalist. They had four sons in whom the family traits will, we feel sure, be continued. But the numerous societies in which he participated, often as officer, will miss him sorely. The loss brought by his death to his scientific associates will be only second to that suffered by his family.

C. B. DAVENPORT

RECENT DEATHS

DR. ALLERTON SEWARD CUSHMAN, chemist and founder of the Institute of Industrial Research in Washington, died on May 1, at the age of sixty-two years.

DR. CHARLES FRANCIS MCKENNA, consulting chemist of New York City, died on April 25, at the age of sixty-nine years.

MEMORIALS

A CENTENNIAL anniversary dinner in memory of the late Dr. Abraham Jacobi, who was born on May 6, 1830, and died on July 10, 1919, was held on May 2 at the New York Academy of Medicine. Professor Franz Boas, of Columbia University, was chairman of the committee of arrangements. The speakers announced were Dr. J. A. Hartwell, Dr. William H. Welch, Dr. Fielding Garrison, Miss Lillian Wald and Mr. George McAneny. Dr. Mary Putnam Jacobi, widow of Dr. Jacobi, was expected to attend. Dr. Jacobi became in 1860 the first professor in America of diseases of children, a subject which he taught for nearly fifty years.