resents in every respect a remarkably normal group, above the average of the general population. (3) The members in whom the body proportions have not yet suffered notably from senility, in both groups, show tall stature, higher than even that of the old Americans at large. (4) The head in the academicians, both groups again, is both absolutely and relatively to stature distinctly larger than that in the general American population; and the increase is especially in the breadth of the head, which raises somewhat the cephalic index. (5) All the facial features, particularly in the old American members, tend towards reduction. (6) The chest in the members of both groups is spacious and especially deep. (7) In pigmentation the members of the academy show absence of pronounced blonds, absence of marked reds and frequency of dark hair (though now mostly gray). The total of the results indicates that, barring rare exceptions, the membership of the academy represents not only mentally but also physically a select group.

(To be continued)

OBITUARY

DAVID GRIFFITHS

BORN at Aberystwith, Wales, on August 16, 1867, son of David and Rachel (Lewis) Griffiths, he died at Emergency Hospital, in Washington, D. C., on March 19, 1935.

He came to the United States with the family when about three years of age, settling on a farm in South Dakota, his early education being in the local schools, including Groton, S. Dak., Academy and Aberdeen, S. Dak., High School. Having taken a general scientific course, majoring in botany, he was graduated from the South Dakota Agricultural College in 1892, receiving his M.S. in 1893. During his attendance in college he taught school in winters, and from 1893 to 1898 taught biology, physics and chemistry in the Aberdeen, S. Dak., High School. Specializing in botany and zoology at Columbia University, he received his Ph.D. in 1900. At this time he was interested in the study of fungi, publishing contributions on powdery mildews, smuts, ergots and others in *Asa Gray Bulletin, Torrey Botanical Club Bulletin* and elsewhere.

He was professor of botany and botanist of the Experiment Station of the University of Arizona in 1900–01, there beginning the studies of grasses and other range plants and range management which continued through the first fifteen years of his service in the Federal Bureau of Plant Industry, which he entered in 1901 as expert in charge of field management in the Office of Grass and Forage Plant Investigations. This work involved extensive travel and field studies of native pasture grasses, salt bushes and cacti, from the Canadian border southward well into Mexico. These studies resulted in numerous department publications in which, along with other conclusions of scientific interest and practical importance, the imperative necessity for avoidance of overstocking the ranges with resultant depletion of plant cover and destructive erosion was emphasized. In these studies he became impressed with the economic importance of the cacti as forage plants, and through utilization of native stands and experimental plantings in Texas and California established the usefulness of some of these as emergency forage reserves to tide over drouth shortages. His published results of experiments with "spineless" prickly pear constituted the most important stabilizing factor during the extravagantly optimistic exploitation of this plant which occurred during the first decade of the present century, and served effectively to warn the public against the indiscriminate extensive planting of the spineless forms in climates to which they are not adapted because of their susceptibility to injury by cold.

Appreciating the possibilities of cacti as ornamental plants, he early assembled a comprehensive collection of species and varieties at the Plant Introduction Garden at Chico, Calif., which afforded material for the preparation of a fine collection of colored illustrations, unfortunately as yet unpublished. Close to 3,500 numbers of Opuntia were included in the Chico collection. From these experimental studies of the cacti resulted a steady flow of papers on taxonomic, agronomic and horticultural phases, published by the Department of Agriculture, the Missouri Botanical Garden, with which close cooperation existed, and in various scientific and popular journals from 1905 to about 1920. These materially enlarged available knowledge of cacti and were of particular importance because of their timeliness in relation to the development of the wide-spread and intensive interest in them as agricultural and horticultural plants.

His steadily increasing interest in the horticultural field resulted in his eventual assignment to the bulb production project of the Bureau of Plant Industry, to which approximately his last twenty years were devoted. Some preliminary experimentation in the commercial production of Dutch bulbs, in distinction from the flowering of the imported bulbs both out of doors and under glass, had previously been done, with results which indicated probability of developing satisfactory production of some species. Economic conditions differed so widely from those in the European countries from which the imported supply came, and the lack of training and experience in the art of bulb growing

among American growers was so obvious that the pioneering of the industry along lines technically efficient and economically sound was a difficult undertaking. Though the funds available were woefully inadequate for the purpose, Dr. Griffiths entered the field with such enthusiasm of spirit and tenacity of purpose, and so promptly devised scientifically sound and practical methods of procedure that he soon became recognized as the unquestioned leader in this field. Maintaining experimental plots and to some extent variety collections at Arlington Farm, Va., Bellingham, Wash., Willard, N. C., and cooperative tests with interested amateurs and commercial growers in many sections, his leadership was largely responsible for the progress thus far made in commercial bulb production in the United States.

Even as senior horticulturist much of his field work was of necessity done with his own hands, frequently under weather and soil conditions which involved physical hardship and hazard to health which would have discouraged one less resolutely persistent and determined to carry through the undertaking. His sustained enthusiasm and courage under such conditions inspired loyalty in his assistants and encouraged them to do their very best.

Dr. Griffiths' most extensive and immediately important bulb work from the economic standpoint dealt with the devising of practical methods of growing and handling the bulbs of narcissi, tulip, hyacinth, as well as Easter, Madonna, Henry, Speciosum and Tiger lilies and other already widely grown and extensively imported Dutch bulbs, upon most of which he published extensively and usefully through the Department of Agriculture. He was at the same time intensively interested in the newer and less well-known bulbous plants, notably the Regal, Nankeen and other foreign lilies, and especially in such potentially important lilies as the Leopard, Lemon, Humboldt, Columbia, Martagon, Turk's-cap, Canada and other native species. He worked out and published practical methods of propagation of these and many other bulbous plants. Determination of the economic value of the American grown bulbs in contrast with the imported product necessitated intensive experimentation in their curing, transporting and storing, and especially the effects of storage temperatures upon their reaction to the forcing house conditions under which they are extensively utilized by florists. He had much hybridization of bulbous plants under way, particularly lilies and daffodils and had named and described a considerable number of promising new varieties, some of which are in process of dissemination.

His technical articles on bulb subjects, which comprise many papers in the proceedings of scientific societies and bulletins of the department, were effectively supplemented by a steady flow of less formal articles addressed mainly to a rapidly increasing audience of actual and potential bulb growers who could best be reached through such representative horticultural trade periodicals as *Florists' Exchange, Florsists' Review, Seed World,* etc., in which more than one hundred articles were published. His crisp and lucid style of presentation added greatly to the practical value of these communications, for he possessed in marked degree that informal clarity of expression which while sometimes vexatious to editors is the joy and satisfaction of the lay reader.

Reared, and in the main schooled, close to the agricultural frontier of that time Dr. Griffiths developed a rare combination of scientific accuracy in his research, and sound common sense in the practical application of his discoveries. Indefatigably industrious and efficient, the work which progressively he undertook on fungi, grasses, cacti and bulbs he put his whole soul into.

Dr. Griffiths married Miss Emigene Lily in 1905, who died in 1909. A daughter, Mrs. Elizabeth Griffiths Lash, and a son, John D. Griffiths, survive, together with his widow, Mrs. Louise Hayward Griffiths, a sister and a brother.

WM. A. TAYLOR

BUREAU OF PLANT INDUSTRY

SCIENTIFIC EVENTS

PROTECTING WILD LIFE

THE possibility of new conventions for the preservation of wild life in various parts of the world was referred to by Sir P. Chalmers Mitchell, secretary of the Zoological Society of London, when presiding on April 15 at a general meeting of the Society for the Preservation of the Fauna of the Empire. Dr. Mitchell stated, according to the London *Times,* that since the last meeting the most important event, so far as they were concerned, was the final ratification by the British Government of the African Convention. They had been waiting a long time for it, but the British Government had had to consult a large number of provincial governments in Africa and other parts of the world. Now that the British Government had ratified the convention there was no doubt that the other governments whose delegates had signed would also ratify it. It was the first and a very important stage in preserving the flora and fauna of the Continent of Africa. They hoped that the convention would serve as a model for similar conventions which would gradually embrace a large part of the world. There had been an All-India conference