

ART. XIX.—*Daniel Cady Eaton.*

DANIEL CADY EATON, Professor of Botany in Yale University, died at his home in New Haven on June 29th.

He was of old New England stock, and the name has been associated with the progress of botany in this country for more than eighty years. His grandfather was that pioneer of American science, Prof. Amos Eaton, who perhaps more than any other one man stimulated the study of natural history in this country during the second and third decades of this century.

Several of his children were educated in scientific pursuits. One son, Amos B. Eaton, although sharing the scientific tastes of the other children, was trained for the army and graduated at West Point in 1826. He was in the Seminole, Mexican and the Civil War, and rose to the rank of Brigadier General.

General Eaton married Elizabeth Selden, who also was of New England stock, and Daniel Cady Eaton, the subject of this sketch, was born at Fort Gratiot, in Michigan, September 12th, 1834. In the changes incident to the military duties of the father, the family, during the youth of the son, had no very permanent place of abode. The mother was a sister of the eminent jurists, Samuel L. Selden and Henry R. Selden of Rochester, N. Y., and she lived in that city during a part of his boyhood, and until the close of the Mexican war. Later, he was for a while a student in the Rensselaer Institute at Troy, and still later, in Gen. Russell's Military School at New Haven.

He entered Yale College in 1853, and was graduated in 1857, having among his classmates an unusual number of persons who have since become eminent as professors in colleges. He was already a zealous student in botany, and published his first paper "On Three New Ferns from California and Oregon" in this Journal in 1856, while a junior in college.

After graduation he studied botany with Prof. Gray at Harvard for three years, and received in 1860 the degree of B.S. in that institution and that of M.A. in course at Yale.

He was a diligent student and published during this period papers on some New Filices from Japan; An Enumeration of Ferns collected by Mr. Charles Wright in Cuba; Equisetaceæ, Filices, etc., of the United States and Mexican Boundary Survey; contributed the description to the Filices in Chapman's Flora of the Southern States; and as a graduation thesis, Filices Wrightianæ et Fendlerianæ, including some ferns from Panama, collected by Messrs. Schott and Hayes.

During the Civil War his father becoming Quartermaster-General, he went into the commissary department in New York as inspector of stores. In this capacity he became very expert, and ever after retained a special interest in certain vegetable products which had been under his study and inspection. These duties, while interrupting botanical work, did not prevent it absolutely. He botanised about New York, he became acquainted with the local botanists there, he delivered some lectures on botany and studied some small collections of ferns sent from various places, but he published nothing more until the close of the war.

In July, 1864, he was elected Professor of Botany at Yale at the same time with the writer of this sketch. As with his colleague, the late Wm. D. Whitney, the professorship was on a university foundation, not specially attached to any one department of the institution but practically his labors were chiefly in the Sheffield Scientific School, where he was a member of the Governing Board, and in which he was an active and successful teacher for thirty-one years. Regular classes in botany in the Academic department only began many years later, but from the first he gave instruction to such advanced students as wished it, and a considerable number have enjoyed this privilege.

As a teacher he was intensely conscientious, sympathetic, courteous, kind, and helpful in the extreme to those who wished to learn. Compelling students to learn was very distasteful to him, although he was patient to a fault with those who were indolent or indifferent.

During his professorship he published fifty botanical papers, works or contributions which are enumerated in the "Yale Bibliographies," and this list need not be repeated here. They related mostly to Ferns and Acrogens. The number but illy describes the work. Some of the contributions consisted of several parts of some larger work, and some were complete works of themselves. He prepared the *Compositæ* for the Report on the Botany of the Geological Exploration of the 40th Parallel, as well as the *Acrogens*, and both are enumerated as but one title in the published list cited.

His largest single contribution to botany was his "Ferns of North America," a sumptuous quarto in two volumes, published in 1879-'80, and dedicated to his old instructor, Prof. Gray, for whom he always had a strong affection. The work is beautifully illustrated with colored figures, from drawings by Emerton and Faxon. It gives technical descriptions and full synonymy, as well as a popular discussion of each species in his own charming style. This work is classic in the botanical literature of this country.

Most of his publications relate to Ferns, but he made a study of the Algæ and Mosses. While he printed but little pertaining to the Algæ, he, associated with Professor W. G. Farlow of Harvard University and Dr. C. L. Anderson of California, prepared and distributed numbered sets of specimens of North American sea weeds, under the title of "Algæ Boreali-Americanæ," a timely contribution to this department of our botany. It was the first considerable set authoritatively sent out, and is the most important of its kind yet published. Many of the specimens found on our Atlantic coast he collected, and this work with that of their preparation and the incident correspondence necessitated an amount of labor only appreciated by those who have attempted similar work. During the later years of his life he devoted more time to the Mosses, and for some years he had been making a critical study of the Sphagna, especially the North American species. In coöperation with Mr. E. Faxon he was preparing sets of specimens of North America Sphagna for distribution. It is a great loss to science that death cut short this work. He was at work on it to almost the very last, and the examination of the new specimens he collected last summer or received since, cheered him during his long and painful illness. He had been very desirous to obtain specimens from the far north for these sets, and the writer made special effort to collect such for him last summer. Their loss by shipwreck he deeply regretted, returning to the subject the last time I saw him, scarcely two weeks before his death, "What a pity I cannot add those Greenland specimens to the sets."

His preparation of the descriptions of the Ferns in Chapman's Flora of the Southern States, in Gray's Manual of the Botany of the Northern States, and in Gray's Field and Forest Botany and in Brewer and Watson's Botany of California are too well known to need more than reference here.

He was careful, accurate, and intensely conscientious in all his botanical work. Neither time nor patient work was spared, if by them the conclusions arrived at might be made more certain and sound. He saw the number of described species of American Ferns greatly enlarged during his career, of which he described about a dozen new species. His published work relates almost entirely to systematic botany. The anatomy and physiology of plants he considered a separate specialty, and he pursued it only so far as was necessary for an understanding of the completed organism.

He was a person of keen literary and artistic tastes, and these profoundly influenced his scientific work. His large private herbarium was arranged and kept with scrupulous care. Each sheet of specimens was as carefully prepared

and as fondly cherished as if it were a precious work of art. His library was rich in rarities, and undoubtedly the fullest in the country in the literature of ferns. He was emphatically a student of plants and his zeal and pleasure in their study was enhanced by his strong love of nature. He loved a plant because it was a plant, and he saw beauty as well as interest in its every feature and organ. The writer long ago came to the opinion that Professor Eaton had chosen his specialty largely because of the intrinsic beauty of the plants of those orders. The delight with which he would call attention to the special beauty of the foliage of some moss under the microscope, or the delicate tracery of some fern indicated the pleasure their contemplation and study afforded him. They had to him not merely a scientific interest, studied for description and classification, but he contemplated them also with much the pleasurable emotion that an artist contemplates a great painting or statue, as an object of beauty. Some species he seemed to regard much as other persons regard pets, whose very presence was a pleasure to him. Representations of the walking fern and the climbing fern embellished his study, and one of the first botanical walks the writer had with him was to a locality near New Haven where the walking fern grew.

In technical descriptions his style was clear, and in popular writing it was smooth and genial. It was his aim to so write that there might be no misunderstanding as to what he meant. His carefulness in this matter may be illustrated by a remark he once made to the writer: "I never send a telegram that I cannot parse." But careful as he was as to style, language was to him but an instrument, and he was strongly on the conservative side in the revolution that is being attempted in botanical nomenclature. Botany was to him a study of plants, not a quibble over names. When a plant had long been known by some botanical name under which it had been most studied and by which it was generally known in speech and in literature, he decidedly objected to changing that name merely to satisfy some newly made and arbitrary rule. Language in its growth and use had heretofore refused to be so fettered, and he believed that the slight gain which might arise by strictly following the newly proposed rules would not compensate for the loss that he thought would come by the additional confusion introduced into botanical literature, and the unsettling of what was sufficiently established for practical use. If there was a more cordial agreement between the American and European botanists he would accept it although regretfully, but as the matter actually stood, he resisted the change.

Other than as incident to his scientific work, Professor Eaton published but little of what is usually termed "popular"

botany. He, however, between 1868 and 1890, delivered twenty of the public "Lectures to Mechanics" given in annual courses at the Sheffield Scientific School. They were all upon subjects related to botany, such as Trees of New England; Our Common Weeds; Seaweeds; Mosses; Hybridism in Plants; Oaks; Water Lillies, etc. These lectures were written in his genial style, and were very popular.

The most of his botanical work was done in his study or in the fields and woods about New Haven. In connection with the work of The Geological Survey of the 40th Parallel, he spent a part of the summer of 1869 in Utah, and was intensely interested in the study and aspects of the vegetation of that part of the Great Basin. He spent much of the year 1866 in Europe, and then took occasion to consult and examine specimens in several of the herbaria there.

Professor Eaton was fond of literature, and retained a love for the ancient classics. He became deeply interested in historical and genealogical studies, and was an officer in several societies devoted to these subjects, and was also the secretary of his college class. He carried on a wide correspondence, and published several papers relating to these subjects. Of the sixty-four titles given under his name in the "Yale Bibliographies," fifty-six were botanical. Reviews of botanical books, published in the Nation, some of which might rank as scientific "papers," are not included.

Regarding his personal qualities I cannot do better than quote the language of another. "An ardent enthusiast in his chosen science, ever ready to aid those seeking its lights, Professor Eaton owned as a natal gift a most graceful and winsome personality. He was singularly but unobtrusively helpful in every social relation, generous and tender in his charities, always eager with some self-sacrificing act of neighborly kindness. He took keen interest in the politics of city, state and nation. He loved intensely the out-door life of woodland and field, and was fond of out-door sports."

He appeared in his usual good health until last year. While botanizing for mosses and particularly sphagna in the White Mountains in the summer vacation, a malady before unsuspected began to acutely manifest itself. Although the disease was very painful, he did some botanical work in the autumn, but he attempted no college work after the Christmas recess. He endured his sufferings with Christian resignation, and passed away with the college year, two days after Commencement.

He married, February 13th, 1866, Caroline, daughter of Treadwell Ketchum, of New Haven. She, a son and a daughter survive him.

WM. H. BREWER.