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WILLIAM HENRY EDWARDS.

For thirty years the name of Mr. William H. Edwards was familiar in the scientific world as one of the two most notable students of the Butterflies of North America, the other being the now venerable and venerated Dr. Samuel H. Scudder, of Cambridge, Mass. Both of these men spent the greater part of their lives in the preparation and production of magnificent works on our diurnal Lepidoptera, to which we owe our present knowledge, incomplete though it may be in many respects, of these beautiful and interesting creatures.

Mr. Edwards, born at Hunter, N. Y., on the 15th of March, 1822, was the son of William W. and Helen Ann Mann Edwards. His father was one of the fifteen children of Judge Timothy Edwards, whose grandfather was the Rev. Jonathan Edwards, of Stockbridge, Mass., the progenitor of many able contributors to American intellectual life. Mr. W. W. Edwards built a tannery at Northampton, Mass., in 1794, and sent his leather to Boston; in 1816, having exhausted the supply of hemlock bark in the Connecticut valley, he removed to Hunter, in Greene Co., New York, and re-established his business on the Schoharie Creek, where he drew his supplies from an estate of 1,200 acres of hemlock forest in the Catskill Mountains. Here our friend was born and brought up, spending his early years in the midst of beautiful surroundings and imbibing a love of nature which continued throughout his life. From the village school he was sent to Williams College, Mass., and completed his course there in 1842; he then studied law in New York, and was admitted to the bar in 1847, after which he made his home at Newburg, N. Y. Subsequently he became interested in the coal fields of West Virginia, and removed to Coalburgh, where he was President of the Ohio and Kanawha Coal Company. He was an extensive land owner in the Virginias of the early days, a builder of railroads, an opener of coal mines, and throughout all his life active in the affairs of the community among whom he dwelt. Though thus busily engaged in commercial pursuits, he always found time to devote to the

study of butterflies and to the preparation for publication of the results of his investigations. His first contribution to the pages of the "CANADIAN ENTOMOLOGIST" appeared in the third number of the first volume, October, 1868, and his one hundred and seventieth in the 30th volume, January, 1898. During this period he also wrote a number of articles, chiefly descriptive of butterflies, which appeared in the Proceedings and Transactions of the American Entomological Society and "Papilio." His first published work, "Voyage Up the Amazon," gave an account of a trip that he made up the great river in 1846, not long after he had left College; it is a delightful record of visits to a number of places where the author employed himself in collecting butterflies, birds and other interesting objects, and is full of vivid descriptions of luxuriant tropical vegetation and the strange creatures that make their abode in the forests and thickets. So true is the narrative then written that the publishers, the Murrays, of London, England, still continue to issue the book as the most reliable guide for a naturalist exploring the river. It was first printed in 1847; the edition before us is dated 1861, and there is still a steady sale of the book. This is certainly a remarkable record for a description of travels written by a young man just out of college.

His *magnum opus*, however, the work which will long continue as a monument to his memory, is "The Butterflies of North America." In April, 1868, the first part was issued and at once commended itself to Entomologists everywhere by the exquisite beauty and finish of the plates and their faithfulness to nature. In July, 1872, the first series, forming a large quarto volume with fifty plates was completed. The second series, containing fifty-one plates, was begun in May, 1874, but not finished until November, 1884; the less frequent issue of the parts being more than compensated for by the increased value of both plates and letterpress. When the work was begun, as Mr. Edwards stated in his preface, little or nothing was known of the eggs, larvæ or chrysalids of any except a few of the commonest butterflies, and accordingly his first volume illustrated only the perfect state. In 1870 he made the notable discovery that eggs could be satisfactorily obtained by confining the female butterfly of any species with the growing food-plant of its larva, and at once he began the study of the life-histories of a number of species previously known only in the imago state. The results of these studies are admirably set forth in the pages as well as on the plates of the second and third series; on these are accurately depicted eggs and larvæ in their different stages, as well as chrysalids and imagoes. Many wonderful discoveries were made during

these investigations, among the first being that of the seasonal trimorphism of *Papilio ajax* and the dimorphism of *Grapta interrogationis* and of *Grapta comma*. The process of breeding was soon taken up by Mr. Edwards's friends and correspondents scattered over North America, and, aided by the general extension of railways over the continent, he was able to get eggs of butterflies from widely distant localities and to follow them successfully through all their stages. It is due to his efforts that the reproach of ignorance of the preparatory states of our butterflies has largely been removed, and though much even now remains to be learnt, vast progress has been made. The first part of the third series was issued in December, 1886; the eighteenth and last in 1897. Far from showing any decline from the author's high standard of excellence, the last issues were regarded at the time as the climax of good work, both on the part of the writer and the artist. In his third volume nearly half of the fifty-one plates are devoted to the alpine or subarctic species of the Satyrinæ, and every species of North American Chionobas, except the Labrador *Tygete*, is figured; of twelve species the various life-stages are fully described and portrayed with a wealth of detail of larval characteristics. As the author states in the preface, "Until these plates appeared no *Erebia* and no Chionobas, except *Semidea*, either in Europe or America, was known in its preparatory stages." All through Mr. Edwards was fortunate in having his wishes ably carried out by his artist-assistants, one of whom, Mrs. Mary Peart, not only drew most accurately nearly all the plates, but in order to do so satisfactorily, reared a large number of the caterpillars; the exquisite colouring by Mrs. Lydia Bowen could not be surpassed. The three large volumes make up a work on the life-histories of butterflies which has no equal anywhere. The accuracy and beauty of the plates are all that can be desired and the pages are filled with original descriptions and observations of many of our rarest butterflies, as well as particulars previously unknown of a large number of more familiar species. It will long continue to be an authoritative book of reference and to form the foundation of all further studies of these most interesting and lovely creatures.

Mr. Edwards was seventy-five years old when he gave up his studies of butterflies, feeling, no doubt, that his advanced age precluded him from carrying on further investigations with the ability and success that he had so remarkably displayed. Far from being idle, however, he became a spirited combatant in the Shakespearean controversy, and in 1900 published

a large volume on the subject, under the title, "Shaksper not Shakespeare." His last work was the compilation of a genealogy of the Edwards family, published in 1903.

For many years during the period of his active studies all new specimens of North American butterflies received by the Smithsonian Institution of Washington were sent to him for description and classification, and also all collections of North American examples possessed by the Imperial Russian Government and any new species from this continent that came to the British Museum were sent to him for identification. He thus became the author of a large number of new species, whose names, conferred by him, will in nearly all cases endure. His own extensive and valuable collections were purchased a few years ago by the Carnegie Institution at Pittsburg and are now in the care of Dr. W. J. Holland, the Director. Mr. Edwards kept up a world-wide correspondence during a long period of years and was an active or honorary member of many scientific societies both in America and abroad. In November, 1868, he was elected an honorary member of the Entomological Society of Ontario, being one of the very first whom our Society recognized as a leader in Entomology, and whose name it felt proud to inscribe on its roll of distinguished members. He was a man of profound and varied learning, a thorough scholar, an earnest student of nature, gifted with more than ordinary powers of observation. To those who knew him well he was endeared by many attractive characteristics; kind, open-hearted, cheery and courteous, free from pride and ostentation, widely respected and foremost in all that pertained to the welfare of the community in which he lived, he attained to a venerable old age and has left behind a fragrant memory that will not soon pass away. On the 2nd of April, 1909, he died at his home in Coalburgh, West Virginia, at the age of 87 years.

C. J. S. BETHUNE.

CENTRAL EXPERIMENTAL FARM, OTTAWA.

It is gratifying to learn that Mr. ARTHUR GIBSON'S position in the Entomological department of the Experimental Farm at Ottawa is not affected by the recent appointments to fill the place of the late Dr. Fletcher. He is a member of the "Inside Civil Service" of the Dominion, and his position is permanent, whatever other changes may take place. It is much to be hoped that his knowledge and experience may long be available for the experimental and research work carried on at the Farm, and for the maintenance of the extensive correspondence with enquirers respecting insects in all parts of the Dominion.