the first college of the University; in 1884 University College, Liverpool, founded in 1881, and in 1887 the Yorkshire College, Leeds, founded 1874, were associated with it as constituent colleges of the University. By its charter women are admitted to all the degrees of the Victoria University. They were first admitted to lectures of the Owens College in 1883, and of the 1002 registered students in 1899—all of whom, however, are not students of the University—126 were women.

Such is, in brief, the history of the first of the University Colleges of the country. Space forbids any attempt at a description of all the present buildings, or of the interior organisation of the college and its relation to the University; much information on these points may be obtained from the book, and the plan and illustrations, which have been prepared with great care and skill, give an admirable idea of the buildings. Among these the most recent are the Christie Library and the physical laboratory, opened by Lord Rayleigh in June last. The Manchester Museum, however, must have a special mention. The nucleus of the collection consists of the specimens belonging to the Manchester Natural History Society and the Manchester Geological Society, transferred to the college with some endowments in 1872. The college is bound to maintain the collections and give the public access to them, free of charge, on certain days. The public lectures, which have become well recognised institutions, are also delivered by the staff and others.

The collections are now housed in splendid buildings and maintained at a total cost of 2700*l.* per annum, of which some 900*l.* is provided by endowment while 400*l.* is a grant from the City Council.

Enough, perhaps, has been said to indicate the magnitude and importance of the work performed for the country by the Owens College; if more proof is needed it can easily be supplied from the volume under review. The ninety pages covered by the record of original publications contain the names of many who have made their mark in literature and science, together with the titles of numerous papers universally recognised as of the highest merit. The authorities of the college did good service to the cause of university education in the country when they prepared a volume such as this for exhibition at Paris. R. T. G.

LORD LILFORD'S LIFE.[1]

THE scientific aspect of the late Lord Lilford's career is, we are informed in the preface to the present volume, to be written by another hand. The task of his sister has been, in the main, to set before the world the character and every-day life of her brother. And a noble theme, admirably carried out, the author has had before her. To a man fond of field sports and an enthusiastic observer of nature, scarcely any more terrible affliction, save loss of sight, can be conceived than to be stricken down in the prime of life by a malady which rendered him for the rest of his days a helpless cripple dependent for every want upon the attention of others. And yet how nobly and how patiently was this affliction borne by the subject of this pathetic memoir! Of course, every alleviation that money could purchase or affection suggest was at his command, but even so the trial of existence under such distressing circumstances must have been a heavy burden. How much was done by the late peer to advance the science he loved so well, and to ameliorate the lot of his fellow sufferers in humbler walks of life, those who knew him intimately can alone tell. The story of such a life is a lesson and a bright example to us all, and it should thus attract many readers besides personal friends and those interested in ornithology.

But in a journal like NATURE, attention must be directed to scientific rather than to moral attributes, even in a memoir which purports to treat chiefly of the latter. From his earliest days Lord Lilford appears to have displayed a remarkable fondness for animals, and throughout his life the observation of their habits seems to have afforded him the most intense delight. To those who are not endued with this love of living creatures it is difficult to realise how strong is its development in others. Although in earlier days a keen sportsman, Lord Lilford states he experienced more delight in watching the movements of wild birds than in shooting them; and in the collection at Lilford it was his aim that the feathered captives should enjoy as much liberty and space as was compatible with deprivation of complete freedom. The sight of a captive eagle moping in a cramped cage, with draggled feathers and unclean surroundings, was absolutely hateful to his sensitive nature; and the collection of eagles and other birds of prey at Lilford afforded an example, as regards mode of treatment, to the menageries of the world. But cranes were the birds which formed the great specialité of the Lilford collection, and only a

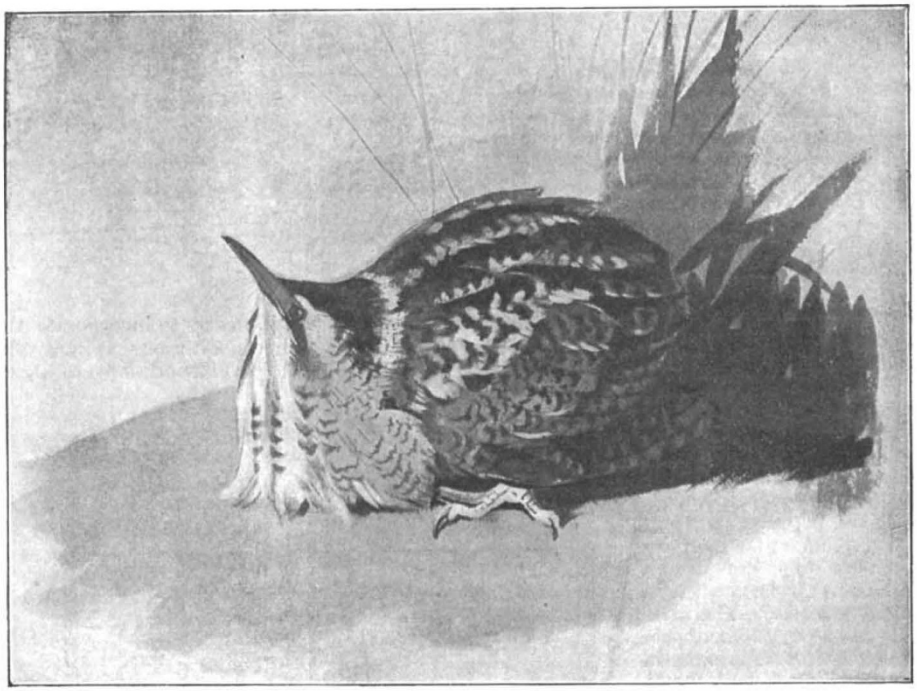

FIG. 1.—A bittern in the crouching attitude (from "Lord Lilford's Life").

[1] "Lord Lilford, Thomas Littleton, Fourth Baron." A Memoir by his sister, with an Introduction by the Bishop of London. Pp. xxiii + 290. (London: Smith, Elder and Co., 1900.) Price 10*s.* 6*d.*

bird lover can fully realise the joy of the owner at the completion of the series, in 1894, by the arrival of a specimen of the wattled species.

Lord Lilford, in his published letters, constantly deprecates his own claims to be regarded as a scientific ornithologist; but, altogether apart from his beautiful work on British birds, we venture to think that the work of the field-naturalist, which he did so much to advance, is at least as important as that of the systematist. Not that the late peer was in any way out of sympathy with the latter line of research; quite the contrary, as is demonstrated by the letter from Mr. O. Thomas, referring to his generous aid in assisting to complete the collection of European mammals in the British Museum with a view to a future exhaustive work on the subject. In addition to his energetic efforts on behalf of bird protection (including the prohibition of indiscriminate egg-collecting), Lord Lilford displayed especial interest in the fauna of Spain—an interest which has been happily commemorated by the name assigned by Mr. de Winton to the Spanish hare, which has been recently found entitled to specific distinction.

In the main the letters which the author of the memoir has selected for publication help in forming a true estimate of the character of their writer; but, in our opinion, some of those to artists and taxidermists referring to minute details in their works might advantageously have been omitted. One of the most interesting portions of the volume is the concluding chapter, which is made up by extracts from Lord Lilford's notes on his own collection of living birds and other animals. And the interest of this is much enhanced by the beautiful sketches of birds in the collection from the talented pencil of Mr. Thorburn, one of which we are enabled to reproduce. One of the objects dear to Lord Lilford's heart was to obtain portraits of birds in their natural and characteristic attitudes, and thus to improve the system of mounting specimens in museums, where it was formerly the exception to find a species in anything approaching a natural pose.

Apart from the noble example of his life to mankind in general, the loss to natural history of a man like Lord Lilford is one that will not easily be replaced, as, unfortunately, but few of those endowed with wealth and leisure display any inclination to follow in his footsteps.

R. L.

PROF. J. G. AGARDH.

JACOB GEORG AGARDH, the great Swedish phycologist, was born at Lund on December 13, 1813. His father was the celebrated Dr. Carl Adolf Agardh, professor at Lund University, and afterwards bishop in the diocese of Karlstad. The elder Agardh was the author of the "Synopsis Algarum Scandinaviæ," the "Systema Algarum" and the "Species Algarum," which laid the foundation for the brilliant work accomplished by his son.

Jacob Agardh entered as a student in the University of Lund in the year 1826, became doctor of philosophy in 1832, docent in 1834 and demonstrator of botany in 1836. In 1847 he became extraordinary professor, and in 1854 he was made ordinary professor, which post he held till 1879, when he retired.

His first paper, on Pilularia, was published in 1833 and was followed by several others on botanical subjects, mainly systematic. In 1836 appeared his first paper on algæ, and from that time till shortly before his death he continued with unfailing activity to publish papers and books on marine botany. The greatest work of his life was the "Species, Genera et Ordines Algarum," in which he laid down for the first time the lines of a natural system of classification in algæ. The English phycologists, Greville and Harvey, had helped to pave the way for this monumental work, and the elder Agardh had prepared some of the ground in his "Species Algarum" already mentioned. Dr. Kützing in Germany had already begun, in 1845, his "Tabulæ Phycologicæ, but it remained for Jacob Agardh to bring into order the many genera of marine algæ which had been left untouched, and to divide up the whole group into series, orders and genera. It is difficult for a worker in these days to realise the chaos in which the whole subject of algæ was involved when Prof. Agardh began his great work. Records were scattered throughout botanical literature, and it is no marvel that a species was described more than once through ignorance of an already existing diagnosis. The "Species, Genera et Ordines" brought together all the hitherto described species and added many new ones. These were arranged according to a natural system, and their synonymy, literature and geographical distribution were appended. From that time all work on algæ was straightforward, and although in time this book of Prof. Agardh may be superseded, it will long remain the ground plan of systematic phycology. The first volume dealt only with Phæophyceæ, and was published in 1848. Four volumes on Florideæ followed, of which the last is a revision and enlargement of the first part. The Corallineæ were worked out by Prof. Areschoug and included in the third volume of the work. In the introduction to the last volume, published in 1876, the author states that he has treated of "the disposition and description of forms" rather than "of the organs which have been considered of the greatest importance"—the trichogyne and antheridia, and the functions of these organs. This statement is specially interesting in regard to the classification of Prof. Schmitz, which is now so largely followed. There the differences which form the groundwork of the classification consist in the various forms of development in the carpogonium after fertilisation has taken place, thus forming a system which, however correct scientifically, is wholly unpractical for systematic workers. (It is, however, only fair to add that in this respect the system was perhaps only left incomplete through the premature death of its author.) In Prof. Agardh's system the algæ are classified according to their mature form, and indeed, as is only natural, the whole of his earlier work makes more of macroscopic, or at least of the less minute characters, than is usual in these days. In some cases this led him into error, but, on the whole, it is interesting to see how much his work is confirmed in the main points by the investigations of later botanists working on different lines.

In 1872 there appeared the first part of "Till Algernes Systematik," which was published at intervals till 1890, and dealt at length with genera in all groups of algæ. The treatment of the genus Caulerpa has been alluded to by Mdme. Weber van Bosse in the dedication of her monograph of this genus, in which she declares Prof. Agardh to be the first to give a natural system to Caulerpa and to open the road for a special study of these algæ. These words apply to many another genus as well. In 1879 an important work, "Florideernes Morphologi," appeared, followed by "Species Sargassorum Australiæ" in 1889; and in 1892, when in his eightieth year, a new work was undertaken entitled "Analecta Algologica." Parts were issued at intervals, and, although it was supposed a few years ago that the aged botanist had finished his work, and that the "Analecta" had come to an end, he still continued writing, and even published a part so late as last year. The work of these years cannot be ranked so highly as that of his middle life; but nothing can ever detract from the brilliancy and lasting worth of his work in earlier years.

Prof. Agardh was referee to Kew for algæ, and many specimens in that herbarium bear their names in his handwriting. In later life he received much material