

Institute, and the Council, after careful consideration of the financial position, most reluctantly decided to abandon completion of the original plan of the Institute, and to leave it an unfinished building. The plans were accordingly modified by the architect, and a portion of the building was proceeded with and completed last year. The Institute took possession of the new building in May of this year, when the fittings of the main laboratories were completed. The fittings of the building, as it at present stands, are now all but completed. A most promising start has been made, and the facilities for investigation and instruction are being widely taken advantage of.

The Jenner Memorial Committee decided last autumn to transfer any funds it might receive to the Institute. The Council, in view of this, decided to alter the title to the Jenner Institute, and in this way to commemorate permanently the memory of Jenner and his work. The necessary legal formalities were completed on the 6th inst., and the Institute from that date continued its work as the Jenner Institute of Preventive Medicine.

Lord Iveagh was a generous contributor to the Jenner Fund. At the same time, the financial outlook was by no means rosy—working expenses had greatly increased at Chelsea; the salaries of the staff were insufficient, and subscriptions were coming in slowly. These facts were causing serious anxiety to those responsible for the management of the Institute. On December 20, Lord Lister was able to communicate to the Council of the Institute Lord Iveagh's munificent offer, along with the conditions attached to it. The public announcement of this noble gift and its cordial acceptance was made by Lord Lister and Sir Henry Roscoe in a letter to the press on the 23rd inst. The letter states that the bequest is given on the condition that in future the control and management of the affairs of the Institute be placed in the hands of a new Board of seven Trustees, three of the seven to be chosen by the Council of the Institute, three by the donor, and one by the Council of the Royal Society.

It is further proposed that the building of the Institute at Chelsea be enlarged, and the original scheme of the same completed; that the sadly inadequate salaries of the director and other members of the staff be increased, and that valuable scholarships and studentships in connection with the Institute be established. There are, of course, many details to be arranged and settled; but it will be seen that the scheme is far-reaching, comprehensive and carefully thought out, whilst the conditions attached are by no means onerous.

The rare modesty of the donor will not, we feel sure, prevent the realisation of the general wish that his name be gratefully and permanently associated with the beneficent work he is about to inaugurate.

Amongst the first results will be, as desired by Lord Iveagh, the completion of the Chelsea building; and the foundations being already laid, this can be proceeded with without delay. The provision to be made for an adequate emolument to the members of the staff, along with the establishment of scholarships and studentships, will furnish an incentive and encouragement hitherto lacking to workers in this field. Many promising researches have of necessity been postponed at the Institute, through the difficulty in finding sufficient assistance to carry them out. Large questions can now be attacked, and the time ungrudgingly given to their elucidation by properly trained experts. A small stream of research work has issued from the Institute; this will be widened and deepened. The students, who have come from all parts of the country and the empire for instruction in bacteriology and preventive medicine, will increase in numbers with the unique facilities that will be placed at their disposal.

The establishment of a British and Imperial Institute

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of Bacteriology is now within a measurable distance of realisation. The present building at Chelsea contains, amongst its main features, the following departments:—

- (1) The bacteriological laboratories, devoted to bacteriological investigation and instruction in connection with medicine, public health, and the pathology of disease.
- (2) The chemical and water laboratories, dealing mainly with water, soil, air, and food, in their hygienic aspects.
- (3) The Hansen laboratory, dealing with the practical applications of bacteriology to agriculture, brewing, dairy and other industries.
- (4) Research rooms for advanced workers, and museum and lecture theatre.
- (5) The requisite facilities for experimental work and investigation in connection with the causation and prevention of disease.

This work will now be placed on a sure and permanent basis, and the Institute will be brought fully abreast with the best foreign laboratories devoted to bacteriology. Through Lord Iveagh's munificence, the objects for which the Institute was established can now be developed on a scale commensurate with their importance.

ALLAN MACFADYEN.

#### GEORGE JAMES ALLMAN.

IN George James Allman, who died at his residence, Ardmore, Parkstone, Dorset, on Thursday, November 24, at the advanced age of eighty-six, zoological science has lost a zealous and most accomplished worker, the world a great man. He was born at Cork in 1812, being the eldest son of Mr. James Allman, of Bandon, in that county, and was educated at the Belfast Academical Institution, originally for the Bar. As with so many others born to science, he early drifted into paths most congenial to his nature, and accordingly graduated in Arts and Medicine in the University of Dublin. He became a member of the Royal College of Surgeons, Ireland, in 1842, and a Fellow in 1844, and took his M.D. (University, Dublin) and (University, Oxford) in 1847. He from early days displayed a passionate devotion to the study of organic nature, and so highly was he esteemed that during the year of his graduation he was appointed Regius Professor of Botany in the Dublin University. Here the late Professor of Geology, Beete-Jukes, was one of his most intimate friends. Thus embarked on a career of scientific work and investigation, Allman gave up all thought of the medical profession, and ten years later resigned the Dublin chair for that of Regius Professor of Natural History in the University of Edinburgh, with which was incorporated the Keepership of the Natural History Museum, and these combined offices he held until 1870, when he retired into private life. In Edinburgh he was no less a favourite than in Dublin; and his lifelong friendship with the late Lord Playfair, Lord Shand, and many of his most brilliant contemporaries began in that good old town, where he built himself the house in Manor Place, where his clever and charming wife made so happy a home for himself and his friends. During his period of activity in the two great capitals named, Allman laboured with untiring zeal, ever intent on the progress of science and the best interests of those who came under his charge. On his retirement, first to London and afterwards to Parkstone (Dorset), his energy never flagged, the most conspicuous change in his actions being the substitution of the personal care of a small but very picturesque estate of five or six acres at Parkstone, having great possibilities for a naturalist and lover of outdoor life, for the more fatiguing duties of the reception- and drawing-room, encumbent upon him in his professorial capacity. Not that Allman despised the latter, for, on the contrary, while in Edinburgh especially, his drawing-room was the rendezvous of the cultured, drawn together by



the personal charm and gifted influence of his wife, to whom he owed much of his popularity and success. Playfair and Shand may be named among the more regular attendants at these gatherings; but Allman, a born field-naturalist, full of vigour, yearning for the open, found his greatest contentment in the field, and in dredging expeditions, in which both in Ireland and Scotland he took the most ardent interest.

As a worker Allman was untiring and prolific, and between the years 1835-1873, apart from his monographs, which are alone monumental, he produced considerably over 100 papers, mostly to be found in the publications of the Royal and other learned Societies of London, Dublin and Edinburgh, in the *Annals and Magazine of Natural History*, and elsewhere; and while in later years he became less prolific, we find him working to the last, and as late as 1897 contributing (Phœnix-like to the younger generation of naturalists) a paper (*Jour. Linn. Soc. Zool.*, vol. xxv. p. 517) on the hybernaculum of the common snail, embodying a most interesting observation overlooked, because always present, by the multitude who had yearly dissected the animal. Many of the miscellaneous papers by which he will be best remembered are "Reports," such as those of the "Porcupine"; and by association with Bowerbank, the elder Carpenter, Hancock, Hincks, Gwyn Jeffreys, Wyville Thomson, and others, he will be ranked among the earlier pioneers in the study of the marine zoology of Britain, whom he was almost the last survivor. His work upon the fresh-water forms, especially as involving the Polyzoa, and his long intimacy with his great personal friend Busk, is little less noteworthy and historically important. Contemporary of Owen, friend of Huxley, correspondent of the elder Agassiz, truly does it seem that with his decease a link with the historic past has been lost; but among giants who survive him Hooker remains, as one who, with Alex. Agassiz, McIntosh, and Norman, has been his counsellor and friend.

Allman was as versatile as voluminous and proficient, since his papers deal with well-nigh all the great groups of animals, between and including the Protozoa and Mammalia. Recent and fossil forms had for him a like interest; and to have passed as a solid worker from the study of the arteries of the Armadillos through that of a fossil Seal, an Ophiurid, and the Graptolites, to the Peridiniaceæ, working the meanwhile at all sorts of Invertebrates, at questions physiological, anatomical, developmental, and taxonomic, taking by the way the study of parasitism, fermentation, and even of snow-crystal formation, is to have established a record worthy of the emulation of the serious science student. Allman's first paper was a botanical one, "On the Mathematic Relations of Forms of Cells of Plants," and it is worthy of note that in this he in a sense anticipated one of the most recent among our biological departures. He is to be seen at his best as a casual investigator of his time, in his papers on the development and palæontology of the Crinoids and on the Potamogale, a young specimen of which he described. His greater reputation, however, rests upon his monumental investigations into the classification and morphology of the Cœlenterata and Polyzoa, upon which he has left a mark for all time. His first paper on the Polyzoa appeared in 1843—his great monograph on the fresh-water members of the class in 1856; while his first paper on the Hydrozoa was published in 1844, and his epoch-making "Gymnoblasic or Tubularian Hydroids" was completed in 1872. During the thirteen years thus apparently occupied in the preparation of the first and the twenty-eight in that of the second, he was active in the production of numerous papers dealing with both groups of animals, and on the Cœlenterata alone he published up to the period named close upon fifty papers all told. His original descriptions of *Rhabdopleura*, *Myriothela*, *Limnocoodium*,

sufficient in themselves to have made him famous, stand conspicuous in contemporary scientific literature, and in his reports upon the Hydroids of the *Challenger* expedition and on the Hydroids obtained during the exploration of the Gulf Stream under the direction of the United States Government, his work will remain memorable in the later progress of marine zoology. Of his *magnum opus* the "Gymnoblasic or Tubularian Hydroids," it may be said that its appearance marked an epoch in the history of the scientific investigation of the Cœlenterata. This glorious work, pre-eminent among the magnificent monographs of the Ray Society, came as a revelation to the zoologists of the time. Its classical companions, the "British Naked-eyed Medusæ" of Forbes and the "Oceanic Hydrozoa" of Huxley, had paved the way for its appearance, by extending our knowledge and simplifying our conceptions of the complex structure of the Colonial Hydrozoa. Johnston's "British Zoophytes" was still a leading work of reference on the group, and Reay Greene's "Manual of the Cœlenterata" had enticed to the study of the class many a student who might have strayed into other paths. Allman's monograph, with its 400 pages of text, clear, comprehensive, and logical, with its twenty-three exquisite coloured plates (faithful copies of their author's original drawings, which even in those days had to be engraved in Germany), came as the fulfilment of a great promise. Its first part, dealing in general terms with the morphology, physiology, and chorology of the Hydrozoa, with its masterly "Glossology," ranks among the most perfect and philosophic of all modern zoological treatises. The exquisite beauty of its illustrations, in respect to which it vies with other scientific works of its time, is no less remarkable than the consummate pains bestowed upon its pages. It is a perfectly ideal treatise, finished and artistically complete in all its parts, and it is not too much to say that it revolutionised and placed upon a solid foundation for all time our knowledge of one of the most perplexing of nature's handiworks. Its influence on contemporary investigation in zoology has been far reaching, and had its author achieved nothing beyond it he would have left an ineffaceable mark upon time. Much of the work which constitutes its foundation was done in Irish waters, which thereby became classical ground in the investigation of the British Cœlenterates, so successfully continued at present for the Actinozoa by Haddon and his pupils and associates, and for the Hydrozoa by Brown and the Misses Delap.

Beyond his professorial and research work, Allman was active in the popularisation of zoology. He was among the earlier supporters of the British Association, his first papers having been read before it. He in 1873 presided over its Biological Section, and was in 1879 President of its Sheffield meeting. He was in 1855 appointed one of the Commissioners of Scottish Fisheries, which post he held until the abolition of the Board in 1881, and in 1876 was one of those selected to inquire into the working of the Queen's Colleges in Ireland. During the years 1874-1881 he was President of the Linnean Society, succeeding Bentham. In this capacity he was not altogether a success as a chairman; but by his solicitations on behalf of the Society—and his presidential addresses—he did much to further its welfare. Those on the Protozoa, delivered consecutively during his first two years of office, which, together with his remarkable monograph on the fresh-water Medusa (*Limnocoodium Sowerbyi*), which also appeared in the Society's Journal, admirably illustrated by woodcuts from the facile hand of Ferrier, amply testify to his desire to be of use to the Fellows of his Society, so adequately expressed in the peroration to his 1877 address.

Allman served on the Councils of the Royal Societies



of London and Edinburgh, and of the Royal Irish Academy, and he officiated as examiner in natural history for the Queen's University of Ireland, the University of London, the army and navy and Indian Medical Service, and for the Indian Civil Service. He was in 1854 elected a Fellow of the Royal Society, and in 1873 received the Society's Royal Medal. He was in 1877 awarded the Brisbane Gold Medal of the Royal Society of Edinburgh, and in 1878 the Cunningham Gold Medal of the Royal Irish Academy, while in 1896 he received the Gold Medal of the Linnean Society he had served so well. In 1879 there was conferred upon him the Hon. LL.D. of the University of Edinburgh.

On his retirement into private life Allman settled in Dorsetshire, on the genial slope of the ridge overlooking Poole Harbour, there to devote himself to his outdoor pursuits and to horticulture, which was with him a passion; and it is not a little remarkable that he, who in earlier years had committed himself to the views concerning man's place in nature expressed in a short paper he in 1889 read before the Royal Society of Edinburgh, should have had for friend and neighbour in the closing years of his life Alfred Russel Wallace, whose views on Darwinism applied to man were so akin to his own. But it is not in this interesting association of these two great men that the Dorsetshire village will alone be hallowed ground to the zoologist of the future, for it also bears testimony to Allman's loving devotion to his wife, in a manner which associates her directly with his triumphs and pursuits. For her use he therein had built, midst his beautiful garden, a substantial brick house, with a tiled terrace so arranged that she might sit and read and talk to him while occupied with his favourite pursuits. The garden itself is a perfect picture of undulating beauty, covering an area of some five or six acres, its owner having been particularly careful to avoid all suggestion of suburbanism in its design. Bamboos, a Grumera, rhododendrons of great rarity and value, carefully hedged around for protection against cold and wind, rivulets whose banks are flanked by many a botanical treasure, a stream here, the occasional pollution of which filled him with agony expressed in strongest remonstrance—a pond there, the inhabitants of which were individually the care of its owner—the whole a little paradise—one pictures the grand old man, resolute to the last, seated on his favourite tree stump or rustic seat, as for hours he used to watch the unfolding of the tender bud or the ripple of the innocent streamlet. Every plant was known to him, every label bore his handwriting, and all around was the special object of his tender care.

Great as was Allman's love of nature and freedom, the distinguishing features of his character were his manliness and gentlemanly consideration for others, and in combination with an artistic temperament amounting to the poetic, these gave to his individuality a rare charm. In testimony to the former combination, there stands in his drawing-room, foremost among the treasures he prized most highly, a clock, presented to him on the occasion of his retirement from the Edinburgh chair, which bears the following inscription:

To George J. Allman, Esq., M.D.  
Professor of Natural History  
In the University of Edinburgh,  
This Timepiece is respectfully presented  
By a few students  
Now and formerly attending his lectures,  
As a small mark of their sincere regard for him  
AS A GENTLEMAN,  
And their admiration of his talents  
And ability as a naturalist.  
29 July, 1870.

His poetic fancy had led him in his later years to commit his thoughts to verse, which it was one of the concluding ambitions of his life to see in print. But in

vain—since the small volume of his poems, which he had printed for private circulation, only reached the house on the day of his decease. As to the literary merits of his opinions might differ, but his verses soar above the peevish Heineésques of Albrecht and the laboured mnemonics of Anderson, two among modern zoologists who have been constrained to write poetry, and they have a special value in that they are the expression of the poetic effusions of his mind prompted by actual work in the field and on the water which made him famous, and of which they are largely descriptive. None other than Johannes Müller, the father of comparative anatomy, has remarked: "Die Phantase is ein unentbehrliches Gut"; and the thought arises that the discipline of biological science soars above that of the more rigid and strictly mathematical in the extent to which it stimulates the imagination, one of the highest of the intellectual faculties.

Allman endeavoured to work to the last, and to the end his brain power remained perfect and his sight and hearing good. It is extraordinary how his eyesight remained practically unimpaired by his constant microscopic work extending over some seventy years. Though latterly weakened by asthma, he would day by day sit at his favourite table and write, and he leaves unfinished a book apparently intended for publication in one of the scientific series. His wife predeceased him in 1890, and he had no family; but he was especially fortunate in the loving care of nieces and others who had learned to take an interest in his life-work, and who afterwards made his home bright and happy. He had this autumn planned some considerable additions to the garden of which he was so fond, dedicating a portion of it to a favourite grand-niece, "Erica," and there can be little doubt that he never imagined himself failing. But a few hours after what proved to be a farewell visit to his dearly beloved plants, he died quietly in his arm-chair. A steady loss of muscular power throughout his whole system during the past few months apparently extended somewhat suddenly to the heart, and took from the world of science an earnest worker, a man in whom the artistic and philosophic temperament were exceptionally combined, and whose name and influence for good will endure. G. B. H.

#### DR. H. W. VOGEL.

EVERY one interested in photography—and in these days who is not?—must deeply regret that so eminent a worker as Dr. Vogel has passed away. He was one of the pioneers in the band of investigators in what may, perhaps, be called the second period of the development of photography, dating from the time of the daguerreotype to the introduction of gelatine dry plates. When Fox Talbot and Daguerre made known their wonderful methods of making nature draw her own pictures, he was a lad of six or seven years of age, and it was thirty-four years after this that Dr. Vogel announced his discovery that, by the use of certain colouring matters, it was possible to make a photographic plate sensitive to other colours than those to which it had previously been considered as sensitive. This discovery was of so radical a nature that a considerable number of eminent experimentalists were quoted as having failed to corroborate the observation, and the general idea at the time seemed to be that Vogel's announcement was due to an error in his work. At the present day there is no need to enlarge upon the importance of colour sensitizers, for, practically speaking, the whole art of the correct monochromatic rendering of colours by photography, and of the various indirect methods of producing pictures in natural colours by photographic means, are founded upon their use. The fact that it is rather an increase of sensitiveness than the actual conferment of sensitiveness that is effected, and that Dr. Vogel's theory of the action has not commended