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Emery Walker Ph. So.

H. Marshall Ward

HARRY MARSHALL WARD.

(With Portrait.)

ALTHOUGH several notices of his life and appreciations of his work have already appeared, some further account of Ward, in the pages of the *Annals*, if only as a tribute of regard and regret, will not be superfluous, inasmuch as he was closely associated with the inception and conduct of this periodical.

It will not, however, be necessary to dwell here upon the details of his life: it will suffice to mention the main facts. He was born at Hereford in 1854, and his scientific life began about twenty years later, in 1875, when he attended a course of practical instruction in Botany conducted at South Kensington by Sir W. Thiselton-Dyer. So deep was the impression made by his ability and enthusiasm upon his teachers, that they urged him, if possible, to enter upon a botanical career. The financial difficulties having been fortunately overcome, partly by a scholarship at Christ's College, Cambridge, Ward went into residence at the University in October, 1876. As an undergraduate he fully availed himself of the opportunities of study in all branches of Biology, gaining thereby a breadth of knowledge and of outlook that stood him in good stead in his subsequent work, and secured for him a first class in the Natural Science Tripos of 1879.

No sooner had he taken his degree than he threw himself into research with characteristic ardour, his first published papers (see appended list) being dated 1880. At the same time he prosecuted his botanical studies under Professor Sachs at Würzburg and Professor de Bary at Strassburg; and it was doubtless from the latter that he received the impulse which led him to devote himself especially to Mycology. But these studies were cut short by his appointment by the Government of Ceylon as cryptogamic botanist to investigate the Coffee-Leaf Disease that was ravaging that island. He spent two years there, and, though he successfully elucidated the life-history of the Fungus, he was unable to discover any effectual remedy. On his return to England he was elected a Berkeley Fellow at Owens College, Manchester, and became assistant to the late Professor Williamson, F.R.S. In 1883 he was elected a Fellow of Christ's College,

Cambridge, and in 1885 he left Manchester to occupy the Chair of Botany in the Forestry Department of the Royal Indian Engineering College, Cooper's Hill. There he remained for ten years, and though closely occupied with his official duties he found time to carry out several of his most important researches, especially those upon the bacteriology of the Thames. Moreover his routine work led him to enter upon a new line of study, that of timber and trees, of which the outcome is to be found in his books on the Oak, on Timber, on Trees, &c., as well as in the works, such as his paper on *Stereum* and his books on plant-diseases, which include also mycological research. In fact Ward, at this stage, seems to have become profoundly impressed with the desirability of combining as far as possible scientific research with the attainment of practical ends, an attitude that found its fullest expression in his presidential address at Toronto in 1897, which dealt with the economic significance of the Fungi.

In 1895 Ward was called to succeed Professor Babington in the Chair of Botany at Cambridge, and here, perhaps for the first time, he found himself in a wholly congenial atmosphere with full and free scope for all his activities. Under his care the botanical school flourished, and so increased in numbers and importance that the University erected for its accommodation a large and well-equipped institute which, together with other buildings, was opened by His Majesty the King in March, 1904.

It was during this period that he pursued his last and perhaps most important line of research, the investigation of the Rusts that infest the Brome-grasses. He established the existence of physiological races of these fungi, showing that certain species of Brome can only be infected by certain breeds of Rusts; and, from the point of view of his Croonian lecture of 1890, he endeavoured to ascertain the causes of immunity and of infectibility. Without having absolutely solved the problem, he proved that the structure of the host is not the determining factor, and made it probable that this factor is to be sought in the secretion of enzymes or toxins by the would-be parasite on the one hand, and of ant-enzymes and anti-toxins by the host on the other. Incidentally he had occasion to investigate the 'Mycoplasma' theory of Professor Eriksson, and failed to confirm his observations. This led to a spirited discussion of the subject on the occasion of the meeting of the British Association at Cambridge in 1904.

Soon after this it became noticeable that Ward's health was giving way. He continued his professorial work as far as his strength permitted, but his increasing weakness was only too evident. The end came, somewhat unexpectedly, during a stay at Torquay, on Sunday, Aug. 26, 1906; and on Sept. 3 he was laid to rest in the Huntingdon Road Cemetery, Cambridge.

His merits did not pass without recognition during his life. In 1886

he became a Fellow of the Linnean Society of London, and was elected to the Royal Society in 1888, receiving a Royal Medal in 1893; he served on the Council of the Linnean Society 1887-9, and on that of the Royal Society 1895-6. He was elected an Honorary Fellow of Christ's College, Cambridge, in 1897, and received the degree of D.Sc. *honoris causa* from the Victoria University in 1902. He was President of the British Mycological Society 1900-2, and had received the honorary fellowship of various learned societies.

And now that he is gone from us, we, his old friends and colleagues, would honour his memory by expressing, however inadequately, our deep sense of the loss we have sustained. We recall his unswerving loyalty and effective co-operation as a fellow-pioneer in this country of what, a quarter of a century ago, was derisively termed the 'New Botany,' though it was but a renaissance of the botany of Hales, Knight, Robert Brown, and Henfrey: we remember his varied gifts, his geniality, his untiring industry, his never-failing enthusiasm: we recognize what he has achieved for the study of Mycology in Britain, carrying on the work of Berkeley and maintaining his high standard. Above all, we are conscious that the gap left in our ranks can never be filled for us. But we draw comfort from the confidence that the future of the cause for which both he and we have striven is assured: new ranks are forming, recruited largely from among Ward's pupils, ready to take his place, and ours, in the fighting-line. To these Ward's life and work may well serve as an inspiration to enthusiasm and an ideal of devotion.

S. H. V.

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<https://doi.org/10.1093/oxfordjournals.aob.a089151>.

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DOI: <https://doi.org/10.1093/oxfordjournals.aob.a089151>

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