

John Stephenson, C.I.E., F.R.S.

JOHN STEPHENSON was born at Padiham, near Burnley, Lancashire, in 1871 and was educated at the Burnley Grammar School and the Owens College, Manchester, which he entered as a student of science in 1887. In 1890 he passed the examinations for the degree of B.Sc., London, with second-class honours in Zoology. In the same year he was awarded the English Essay Prize in the Owens College for an essay on the poetry of Wordsworth; he had throughout his life a strong interest in English literature.

Stephenson then entered the Medical School of the Owens College, in which he had a distinguished career; a fellow-student states that he was easily the best man of his year. In 1891 he passed the London Intermediate M.B. in the first class with Exhibition and Medal in Anatomy and Medal in Physiology; in 1893 he graduated M.B., Victoria University, and in 1894 M.B., London, both with first-class honours. During his last year he held appointments as house physician for six months, first in the Royal Infirmary, Manchester, and later in the Royal Hospital for Diseases of the Chest, London.

In 1895 Stephenson entered the Indian Medical Service, being first of his batch. In the same year he married Gertrude, elder daughter of Mr Thomas Bayne, of Burnley. For the next five years he was on military duty with the 22nd Punjab Cavalry, including service in the North-West Frontier Expedition of 1897. During the following years he was on plague duty, and held appointments as Civil Surgeon at four stations in the Punjab. His spare time during these years was devoted to the study of Persian, and while Civil Surgeon of Murree in 1901 he passed the High Proficiency Persian examination. In 1905 he was home on leave and passed the examinations for the Fellowship of the College of Surgeons of England.

In October of the following year Captain Stephenson, then Civil Surgeon of Ambala, was "appointed temporarily" at about a week's notice to the newly created Chair of Biology in Government College,* Lahore, an appointment which was to fill his life for thirteen years.

* The teaching of biology was instituted in the College in 1902, when an Assistant Professor was appointed; he was transferred to the Agricultural College, Poona, in the vacation of 1906.

Stephenson had studied zoology in the Owens College under the stimulating influence of Professor Milnes Marshall, and building on this foundation his instruction in the subject soon reached a high standard, and within a few years resulted in a productive school of zoology. The expansion of the work in biology rendered necessary new laboratories, which Stephenson planned with regard to the special conditions of climate, and they were ready for occupation in 1914. That his presentation of the subject was successful in appealing to his students is shown by the fact that several of them became inspired with his ideals of critical work, and responded to his suggestions for the investigation of the fauna of their country. They are now holding influential zoological posts in India and have published important papers on their researches. Stephenson thus made an important contribution to the development of zoological teaching and research in India.

For his own investigations Stephenson chose the anatomy and biology of the freshwater oligochætes occurring near Lahore, and began work on them soon after his appointment to the Chair. His first paper, on an oligochæte allied to *Chaetogaster* which he had found in February 1907, was published in August of that year, and was quickly followed by another paper on two freshwater oligochætes—an *Æolosoma* and a new species of *Chaetogaster*. In 1909 he submitted to the University of London a thesis, which was approved for the degree of Doctor of Science, on the aquatic Oligochæta of the Punjab, the most interesting part of which is an account of the phenomena of antiperistalsis and ascending ciliary action in the intestine of these worms, with some general considerations arising therefrom. Stephenson showed that the inhalent function of the intestine is common in these worms, and suggested that it is possibly the primitive function—the intake of oxygen in solution—and he added some critical considerations on the evolution of the vascular system in oligochætes. In 1909 when on leave he spent some time at the Marine Biological Station, Millport, working on the littoral Oligochæta of the Clyde, on which he contributed a paper to the Society's *Transactions* in 1911. On his next leave he worked for a month in the summer of 1912 at the Marine Laboratory, Plymouth, chiefly on intestinal respiration in Polychæta, and he then expanded his thesis of 1909 so that it constituted a study of intestinal respiration in annelids, with considerations on the origin and evolution of the vascular system in this group. This paper was communicated to the Society and published in 1913.

About this time Stephenson received a collection of earthworms, made, during the Abor Expedition, in Assam and the Abor country—

the first of the many collections from the Oriental Region which came into his hands—and his interests henceforth widened to the oligochætes in general. Throughout his period in Lahore he maintained a steady output of published work on collections of these worms from India, Japan, and China, and on structural details, *e.g.* the cells of the pharyngeal glands and septal glands, the prostate glands (with Haru Ram) and the calciferous glands (with B. Prashad).

In 1912 Stephenson was appointed Principal and in 1918 Vice-Chancellor of Government College. The strain of his duties during the war years—an anxious period for those in charge of youth in India—began to tell upon his health, and in the spring of 1919 he decided to resign his appointments in Lahore, which he vacated in September of that year to the great regret of staff and students. He was a highly successful Professor and Principal, kind, firm, and understanding. His dealings with the students were characterised by unflinching courtesy and by scrupulous fairness, which gained their admiration and respect, and his quiet effective personality left a deep impression upon them.

In June 1920 I was able to offer Lieutenant-Colonel Stephenson a Lectureship in Zoology which had been recently established in the University of Edinburgh, the duties of which consisted principally in directing students in their work on invertebrates. This appealed to him as a congenial post, and he commenced duty in October of that year. For nine years he shared with me the lectures on invertebrates and on a number of special subjects given to the advanced students. His teaching was clear and concise, and characterised by a wide scientific outlook; in the laboratory his critical supervision was greatly appreciated, especially by the students reading for honours, to whom he gave unsparingly help and encouragement. I may be permitted to add that he was a most efficient and trusted colleague and a loyal friend.

Stephenson was assiduous and methodical in research. He continued his investigations on earthworms, and published while in Edinburgh a score of papers. The majority of these were on systematics and distribution, others described the septal and pharyngeal glands (a continuation of previous work), blood glands, the diffuse production of sexual cells in a species of *Chatogaster*, and the sexual organs of *Naidium*. In a paper published in 1921 Stephenson discussed evolution in the family Megascolecidae; he showed that, knowing which characters are primary and which secondary, it is possible to work out the sequence of evolution of the principal genera and that a number of the genera have had a multiple origin—that is, are polyphyletic. In the same paper he set forth his views on problems of distribution in the Oligochæta, stating his

objections to several of the land-bridges, *e.g.* the Indo-Australian, which had been postulated in order to explain the present range of distribution of certain genera and offering alternative views. In 1923 he published a volume of 518 pages on the Oligochæta in *The Fauna of British India*. After the list of references to the literature, which formed a complete bibliography for the species found in India, he gave a useful account of the methods of examination of oligochætes, followed by a summary of the geographical distribution of Indian Oligochæta, with remarks on their bionomics, and then passed to the systematic description of the fifty-five genera and three hundred and forty-five species recorded from India. This work is notable for its clarity and method, and for the practical treatment of the subject which was the outcome of the author's intimate knowledge of his material derived from innumerable dissections and other preparations.

His last work in Edinburgh was the preparation of a monograph on the Oligochæta. In 1927 he was appointed a Carnegie Teaching Fellow and relieved of all duties except those in connection with the senior students, and henceforward he devoted the major part of his time to the preparation of the monograph (published by the Clarendon Press in January 1930), which he completed and saw through the press before he left Edinburgh. He brought to the preparation of this volume of almost a thousand pages a thorough mastery of the structure and classification of oligochætes, an extensive knowledge of the literature, and a flair for concise and clear presentation of facts and conclusions. He produced a monograph of exceptional merit which, in addition to the anatomical and systematic descriptions, contains a summary of his conclusions on the evolution of oligochætes, on convergence and polyphyly, and on the bearing of the known facts of geographical distribution of oligochætes on palæogeographical problems such as the former existence of a more extensive antarctic continent and of Indo-Australian and other land-bridges. His nine years in Edinburgh were his most productive period in published work; he became one of the two recognised authorities on the Oligochæta.

In 1928 Stephenson was appointed Editor of *The Fauna of British India* in succession to the late Sir Arthur Shipley, and one of the Editors of *The Annals and Magazine of Natural History*.

On leaving Edinburgh in November 1929 he went to reside in London, and continued until a few weeks before his death his investigations on oligochætes as an unofficial worker in the British Museum (Natural History). These resulted in several systematic papers, including one on a new species of *Nais* living parasitically under the eye and in the

Harderian glands of East African frogs. In 1931 he became Zoological Secretary of the Linnean Society and took an active interest in its affairs, and especially in the publication of the zoological papers.

Stephenson was made, in 1919, a Companion of the Order of the Indian Empire in recognition of his services in Lahore. He was elected a Fellow of the Royal Society of Edinburgh in 1912 and was awarded the Keith Medal in 1920. He was elected a Fellow of the Royal Society of London in 1930.

He regarded as a recreation his studies—which were carried out with his usual thoroughness and care—on Persian and Arabic literature. In 1910 the Asiatic Society of Bengal published his translation of the first book of the *Hadīqatu' l-Haqīqat* (“Enclosed Garden of the Truth”) of Sanā'ī. The original poem, written probably about 1140 A.D., is Sanā'ī's most important work and one of the early Persian text-books of the Sufi philosophy. On finding there was no European edition or translation Stephenson collated half a dozen manuscript and lithographic editions in the preparation of the text and made a translation, appending numerous notes. He also translated the zoological section of the *Nuzhatu-l-Qulūb* (“Heart's Delight”), which was published by the Royal Asiatic Society in 1928. This work, which was compiled by a Persian writer, Hamdullāh Mustaufī of Qazwīn, about 1340, gave a conspectus of zoological knowledge of the time, and “constitutes one of the very few extant zoological treatises of the Islamic East.”

Stephenson was held in high esteem for his attractive personality, his sound judgment, and his readiness to help in matters relating to the advancement of zoology in Britain and in India.

He died in London on the 2nd February 1933.

J. H. A.