



K. N. Bahl



KARM NARAYAN BAHL

1891-1954

KARM NARAYAN BAHL was born at Multan, Punjab, on the 14th of February, 1891, and died at Lucknow, at the age of sixty-four, on the 21st of April, 1954.

He graduated from the Government College, Lahore, and obtained the M.Sc. degree from that same institution in the year 1913, getting a First Class. While studying in the M.Sc., he worked as a Demonstrator in Biology; and later on as Assistant Professor of Biology, in the Government College, Lahore, where he served up to 1914. From 1914-16 he worked as Professor of Zoology at the St. John's College, Agra, and from 1916-19 in the same capacity at the Muir Central College, Allahabad. In 1919 he went to the Oxford University, England, for post-graduate studies and was there until 1921, obtaining a D.Phil. for his thesis. Before proceeding to Oxford, he had prepared and submitted a thesis to the Punjab University, Lahore, on the excretory system of the earthworm *Pheretima*, and on the strength of this thesis he was awarded the D.Sc. degree in 1920. On return from Oxford in 1921, he was appointed Reader and Head of the Department of Zoology at the recently established Lucknow University in Lucknow. From 1923-51, for a period of 28 years, he was Professor and Head of the Zoology Department at that University. During this period he was, for nearly 22 years, the Warden of the Meston Hostel (now the Tilak Hostel) of the Lucknow University.

On retirement from the Chair of Zoology at Lucknow, he continued as a Research Professor in the same place. But shortly after, the call of duty made him accept the Vice-Chancellorship of the Patna University, Patna, where he remained for a period of about two years, from 1951-52. Due to ill health he resigned from the Vice-Chancellorship in December 1952.

Professor Bahl's contributions to zoology were such that within a short period of time he raised the Zoology Department of the Lucknow University to a high pitch of efficiency. This earned a tribute from *Nature*, of London, which, while commenting on the death of another distinguished Indian Zoologist, Professor George Mathai, wrote as follows (Vol. 160, July 26, 1947, p. 116):—

“Under Stephenson the Lahore School of Zoology had been raised to a high degree of efficiency and was *facile princeps* among the Indian Schools; Prof. Mathai worked hard to maintain this proud position though of late years Lahore has been challenged and has had to yield pride of place to Lucknow.”



Professor Bahl married twice. From his first wife he had a son and from the second wife two sons and a daughter. His family life was happy and contented. He was very fond of his children to whom he gave the best possible education. Two of them—a son and a daughter—became physicians, and another son became a naval officer. Some years before his retirement, he decided to settle down in Lucknow and bought a house on Fayzabad Road where his family now resides.

Professor Bahl was short of stature, barely five feet five inches in height, but strong in built. He was a man of active habits and often accompanied the students in field trips. His temperament was even and pleasing. In my long association with him I never saw him lose temper except once when one of his M.Sc. students had quarrelled with and slapped a clerk of the Zoology Department. Professor Bahl temporarily expelled the student and fined him, but thereafter forgot about the incident and never referred to it again. Until a couple of years before his death his age rested lightly upon his shoulders, and he was active and agile. But in 1952, when he was working as the Vice-Chancellor of the Patna University, he suffered a nervous breakdown from which he never completely recovered, and finally died in Lucknow in April, 1954, in tragic circumstances.

He was a great admirer of European culture and preferred to live in the western style. He liked to read good English literature and could quote passages from Shakespeare almost at will. But his love for Indian culture was deeper and he was also a scholar of Sanskrit. In his early days in Lucknow he kept a horse and buggy in which he drove in the evenings with his family. Later on he bought a large motor car.

His relations with the students were paternal. He loved them and followed their careers until long after they had left the university. He was always ready to help them in whatever way he could—whether it was the giving of a letter of recommendation for employment, or putting in a word to a friend or even giving a little financial assistance. He always did this spontaneously and without ostentation. At the same time he was a strict disciplinarian, and under his authority his university department of zoology was at the high pitch of efficiency.

Professor Bahl's contributions to science may be divided into three groups. First, we may mention his outstanding researches mainly on the anatomy and physiology of earthworms; secondly, his founding and editing the well-known series of monographs on Indian animals which has contributed so much to the teaching of zoology in India on a sound basis; thirdly, his lectures to the graduate and postgraduate classes of the Lucknow University for a period of nearly thirty years. In each of these fields he has set standards and left a body of work which it is not easy to equal.

During the entire course of his active life he published hardly about 30 papers. This number is not large but the quality of his papers is such that almost every one of them recorded a discovery of importance.



He began his research career with a short paper on ant-like spiders of the family Attidae published in 1915 under the name KARM NARAYAN—all his subsequent papers were published under his name K. N. BAHL. Soon after this, he started his work on the nephridial system of earthworms and discovered, in the genus *Pheretima*, a new type of septal nephridia which were characterized by the fact that they open into the intestine and not outside the body as nephridia had hitherto been believed to do. In fact, he found in *Pheretima* three distinct kinds of nephridia, namely, septal, pharyngeal and integumentary. The next thirty years of his research career were spent in unravelling the complicated nature, both anatomical and physiological, of the nephridia of earthworms from various parts of the world. To the nephridia which open into the intestine he gave the name entero-nephric, and suggested that they were an adaptation for the conservation of water in arid climates. This suggestion he later on supported strongly by experimental evidence. He summarised his long series of papers in a comprehensive review entitled 'Excretion in the Oligochaeta', published in 1947 in the *Biological Reviews*, Cambridge. His nephridial researches brought him world-wide fame and many honours.

Among the other researches which Professor Bahl carried out may be mentioned his paper on the reproductive processes and development in the apple snail, *Pila globosa*, published in 1928 in the *Memoirs of the Indian Museum*, and another one on the skull of the lizard, *Varanus monitor*, published in 1937.

In the choice of animals for research work, he never went for the rare or the spectacular, but instinctively selected the common ones found in abundance. Thus, for his important work on the nephridia he used the common earthworms of the genera *Pheretima* and *Eutyphaeus* which occur abundantly in Lucknow. Similarly, for his studies on molluscan biology his choice fell on the common apple snail, *Pila globosa*, and for his studies on vertebrate skull he chose the common lizard *Varanus monitor*. These animals are also taught in the class room all over India. His researches were marked by a clear grasp of the problem, patient and long-sustained observations, the development of simple but effective techniques, and finally by the presentation of the results in simple, logical and faultless language. He often wrote his papers several times, each time correcting, abbreviating, simplifying, until he was satisfied that the paper was near perfect. The same care and attention he gave to his editorial work.

In the year 1926 he published a memoir on the earthworm *Pheretima* to initiate a new series called the *Indian Zoological Memoirs on Indian Animal Types*. This series, which he continued to edit almost up to the end of his life, has now become famous and has been taken over for continuance by the Zoological Society of India. In all, he edited eight volumes which were written by various authors and dealt with the Indian



earthworm *Pheretima* (by himself; this ran into four editions), the shark *Scoliodon* (by E. M. Thillayampalam), the oyster *Ostrea* (by P. R. Awati & H. S. Rai), the apple snail *Pila* (by B. Prashad), the monascidian *Herdmania* (by S. M. Das), the Indian river prawn *Palaemon* (by S. S. Patwardhan), the Indian sea-urchin *Salmacis* (by Gopala Aiyar), and the Indian cattle leech *Hirudinaria* (by M. L. Bhatia). Before Professor Bahl had started these memoirs, zoology teaching in India was in considerable difficulties on account of the fact that descriptions of Indian animal types were not available in the literature and much of the teaching in the universities was based on foreign types, mostly European. This naturally led to difficulties when descriptions given to the students in the lecture rooms did not tally with the dissections in the practical classes.

Regarding his teaching, those who were privileged to attend his lectures agree that the lectures were extremely lucid, up-to-date and inspiring. He took great pains to prepare his lecture notes. In fact, a greater part of the summer vacations, which he usually spent in the hills—Mussoorie was his favourite resort—he spent in studying recent zoological literature and in bringing his lecture notes up-to-date.

Professor Bahl was widely honoured. He was the President of the Zoology Section of the Indian Science Congress for the year 1924; the Foundation Fellow and President (1933-35) of the National Academy of Sciences, Allahabad; the Foundation Fellow and Vice-President (1931-33 and 1951-53) of the National Institute of Sciences of India; the President of the Vignyan Parishad, Allahabad (1936-38); the Fellow of the Asiatic Society of Bengal, Calcutta; and the Foundation Fellow, Honorary Fellow (1952), Editor (1948-52), President (1950-52) and Vice-President (1953—until his death) of the Zoological Society of India. In 1942, the Asiatic Society of Bengal honoured him with the award of the Joy Gobind Law Memorial Gold Medal for notable researches in 'Asiatic Zoology'. At the invitation of the Government of India he visited and lectured, in the year 1946, before several universities and research institutions in England and the U.S.A. In 1948 he visited Beirut, Lebanon, as a member of the Indian Delegation to the UNESCO Conference. During the period 1948-49 he served as a member of the University Education Commission of the Government of India.

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- (iii) *Ostrea* (1931).
- (iv) *Pila* (1932).
- (v) *Herdmania* (1936).
- (vi) *Palaemon* (1937; 2nd ed. 1958).
- (vii) *Salmacis* (1938).
- (viii) *Hirudinaria* (1941).

