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In Memoriam Dr. Béla Párducz (1911—1964)

By Z. Kaszab, Budapest

Dr. Béla Párducz, the noted Protistologist, sub-director of the Zoological Department of the Hungarian Natural History Museum, died with tragic abruptness in his 53rd year of age, on 19 February, 1964. His passing away is a great loss of Hungarian zoology; the Zoological Department lost one of its outstanding leaders.

B. Párducz was born in Fehértemplom, Comitat Temes, on 3 April, 1911. He took his degree in the University of Szeged, in 1932. In the same Institution, he was first an unpaid assistant from 1932, then a salaried research assistant, demonstrator,

and later assistant lecturer. He was the student of Professor GELEI, and followed him also to the University of Kolozsvár when this latter was appointed to professorship. He took his doctor's degree summa cum laude in 1937, and qualified as docent in the theme "Morphology and Biology of Protozoa" in 1944.

Starting from the realization that, with respect to Protozoa, a diligent and thorough collecting of data, thus the acquiring of fundamental informations on their organization and life, is the most urgent and indispensable task, he was working, in the initial period (1932—1944) of investigations, besides faunistic and ecologic studies, on the problems of the finer structure, and the adaptation to environment, of the protozoa, their phylogenetical relationships, further on questions concerning the physiology of their movements, feeding, and responses to diverse stimuli (cf. Literature, Nos. 1—12). Already in these papers, he endeavours to infer comprehensive generalizations. In his researches, he always attempted to shed some light on the basic problems of the phylogeny of the Ciliata, and gave an entirely new interpretation of the origin fo primarily the Holotricha.

After World War II, he accepted the invitation of the Chief Director of the Hungarian Natural History Museum, to work in the recently established Biological Laboratory. It was here that he wrote the majority of his papers of worldwide excellence (cf. Literature Nos. 13—). His assignment called for biological research work on Protozoa. He was fully aware that to create really new in this field will turn on his ability to radically improve microtechnique. As a result of persistent experimentation, he published in 1952 his new quick-staining and fixing process in a paper (Nr. 13). This method made it possible for him to enter also hitherto unattainable fields of protistology, and to break out of the closed circle of the silver-method, the teachings of the GELEI school, and all earlier informations concerning the nerve-functions of the Protozoa.

By the application of the new research technique, his interest turned primarily toward the study and clarification of the kinetic and physiological mechanisms of ciliary motion. This problem for more than a hundred years in the forefront of researches, but, due to methodical difficulties, extremely hard to approach. In the course of his investigations, he showed that the metachronically functioning cilia, as extremely sensitive biological indicators, truly reflect stimulatory processes propagating within the cell. This recognition allowed the launching of a theme, promising entirely new perspectives, namely the study on Protozoa of the oldest forms of the conduction of stimuli. He investigated the mode of function of single as well as series of cilia moving in unison, the physiological mechanism of the main stimulated movements; he revised JENINNG'S "method of trial and error" and KÜHN'S theory of the "taxis-sema", so that, after the evaluation and collation of researches conducted parallel—and by means of diverse techniques—with each other, there evolved a wholly new picture of the physiological mechanism of orientation within the stimulus-field.

With the help of new series of experiments, he achieved, first of all, the thorough cytological exposition of those class of fibers which have in some form been brought into relation with the conduction of stimuli. Studying the effect-mechanism of temperature, the more important mono- and bivalent kations, the galvanic current, and some narcotics, he established, in the possession of exact morphological and topographical data, that the generally accepted conception on the so-called "nervous system" of the monocellular animals is untenable. The coordinative impulses, regulating normal locomotion and the ciliary function of the stimulated movements, do not spread on preformed paths within the fibril-system, but in wide waves embracing the entire cellular body, in the outernmost marginal layer of the cellular plasm itself.

His assumption, namely that the rise and conduction of stimuli in monocellular animals as well as in the gangliated cells of higher organisms are enacted according to identical basic principles, was completely corroborated and justified by his experiments.

His work drew ever increasing attention, and he was just about to summarize the results of 30 years of research, in a monography on the stimulus processes and reactions of the Protozoa, when he was unexpectedly and tragically called away.

Despite his unfinished life's work, its importance and significance elevate him to the ranks of the greatest Hungarian protistologists. This is clearly mirrored also by the obituary notices appearing on Dr. B. Párducz's work in foreign periodicals. An increasing number of specialists in the field adopt his technique and methods, although it is also beyond doubt that the major part of his publications, written in German or Hungarian, had not reached the hands of a number of specialists. It is a permanent loss of science that he was unable to compose the synthesis of his investigations; even so, his unfinished works contain such a wealth of new findings that they merit a collected publication in English. Let us hope that they will soon appear.

In Dr. Béla Párducz we mourn not only an exceptional scientist, but also a colleague and friend of the highest character, one of the leading personalities of the Zoological Department of the Hungarian Natural History Museum. We shall treasure his memory for ever.

Scientific publications of Dr. B. Párducz

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