

INTRODUCTION — PROTOZOA IN THE NATURE AND UNDER THE MICROSCOPE

When in the second half of the XVII century Anthony van Leeuwenhoek was first to watch miniature living creatures in a drop of pond water, certainly he did not realize that his observations initiate the up today long history of protozoology, the science concerned about unicellular organisms which were earlier classified among animals, but are now recognized as a separate kingdom Protista.

The multicellular organisms may properly function owing to the efficient cooperation of many organs and systems. In a protist all vital functions must be fulfilled within the limits of one single cell. How the protozoan cell achieves this goal?

It is known that the evolution of Eukaryota started from the unicellular stage, which step-by-step diverged and produced fungi, green plants, and animals including humans. What about the evolution of Protista themselves, those who adapted to various environments without overstepping the single-cell stage?

What a position protists occupy and how important they are in different water habitats? How are they related to other organisms, is it a beneficial or harmful cohabitation?

How their single-cell constitution and way of life affects their mode of reproduction, inhe-

ritance and natural selection? Which intracellular structures guarantee the efficiency of these phenomena?

How are assembled and how work the stable motor systems developed by some protists, and how move those of them who never produced any permanent and steady motor organelles? How do they take food and absorb from the surrounding medium all kind of materials they need?

And finally: is the study of protists still relevant to understanding general problems raised by cell biology, although nowadays the experiments on tissue cells isolated from multicellular organisms became a routine? We believe, it is.

This conviction encouraged us to present to the readers this special issue of KOSMOS concerned about protists. The Authors, representing different Polish universities and research institutes, are personally involved with their teams in the attempt of exploring the questions formulated above. The results of their efforts are known to the international protistological community. We are glad that they found time to share their experience and their ideas with our readers.

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