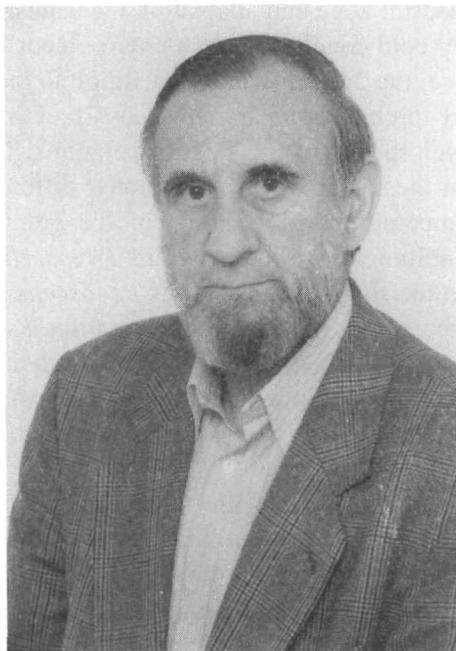


***IN MEMORIAM*****ANDRZEJ MYRCHA**

(1939–1997)

Scientific career of Professor Andrzej Myrcha has developed at impressive rate. After having finished his biological studies at the Warsaw University in 1962, he was investigating ecological physiology and bioenergetics of small mammals and invertebrates, mainly insects and spiders. This subject was a leading one in his doctoral (1966) and post-doctoral (1975) theses, presented at the Faculty of Biology of the Warsaw University. In 1978 he was nominated a deputy head of the Department of Polar Research, Institute of Ecology of the Polish Academy of Sciences. Professor Stanisław Rakusa-Suszczewski, the main coordinator of the Antarctic research, asked him to organize a group of scientists, dealing with terrestrial ecology in the Antarctic. As a dynamic biologist with rich experience, gained in the country (Mammal Research Institute and Institute

of Ecology of the Polish Academy of Sciences) and abroad (Institute of Vertebrate Zoology "SAV" in Brno, Institute of Physiology in Novosibirsk, and Smithsonian Tropical Research Institute in Panama), he was an excellent candidate to undertake this task.

Professor Andrzej Myrcha sacrificed the following twenty years of his professional work and his life in the same time, to research and organization of research in polar areas. His personal interest focused on activity of antarctic terrestrial ecosystem, coastal zone and adaptation mechanism of warm-blooded animals in an extremely cold conditions of an environment.

During reconnaissance, the 2nd Antarctic Expedition to the *Arctowski* Station in 1977–78, he carried through comparative analysis of indices of breathing function of blood at seven species of full-fledged penguins. The most interesting conclusion drawn from these studies were the noted differences in adaptation mechanism to low temperatures at penguins of the genus *Pygoscelis*. Best adapted to extreme conditions were the penguins *Pygoscelis adeliae* which occupy the area further to the south. The penguins *Pygoscelis papua* indicate less effective transport of oxygen in blood and the penguins *Pygoscelis antarctica* are at intermediate position. Studies of distribution and dynamics of number of seals in the Admiralty Bay were also initiated by Professor A. Myrcha, and since that time continuous monitoring of web-footed mammals near the *Arctowski* Station has been started.

He organized and then headed the 4th Antarctic Expedition of the Polish Academy of Sciences to the *Arctowski* Station during the austral summer 1979/80. A team of seven scientists, under his direct leadership, studied ecological physiology of birds and processes of organic matter (mainly guano) decomposition in terrestrial conditions. Bioenergetic studies of penguins and other polar (later also Arctic) birds during their nest development phase and influence of environmental conditions on choice of nesting sites by these birds resulted in four Ph.D. theses in 1983–1996: by Eugeniusz Moczydłowski, Jan Taylor, Marek Konarzewski and Andrzej Gębczyński. Common studies with Stanisław Pietr and Andrzej Tatur focused on time, rate and trends of decomposition of huge amount of organic matter, deposited by nesting penguins as terrestrial guano. Microbiological, enzymatic, hydrochemical, pedological, geochemical and mineralogical analyses enabled to estimate the role of bacteria in decomposition of each fraction of original material and during soil transformations of carbon, nitrogen and phosphorus compounds. Differences between Antarctic continent and maritime Antarctic were noted for the first time in soil-forming processes that led to ornithogenic soil formation. Milder climate of maritime Antarctic favours presence of water which transports chemically-reacting (acid or basic in turn) guano leachates into weathering waste, resulting in its phosphatization (being the main soil-forming process). Results of these studies enabled presentation of a descriptive model of ornithogenic phosphorus cycle on the land-sea

boundary at the 4th Symposium of Antarctic Biology in Cape Town, South Africa in 1983, and met with great interest.

Further development of these items was possible during the 9th Antarctic Expedition of the Polish Academy of Sciences to the *Arctowski* Station. Ornithogenic soils were described in that time in a considerably wider spectrum *i.e.* climatic (from the Antarctic continent to the King George Island) and geologic (varying bedrock) ones. In the maritime Antarctic, relic ornithogenic soils were found common for the first time in penguin-abandoned areas, mantled with dense carpets of mosses, lichens and grasses. Hundreds and thousands of years, these soils have constituted a source of nutrients for specific ecosystems, luxuriantly developed in these areas. They are a significant element that determines relatively high level of biodiversity in poor tundra of the maritime Antarctic.

During the 9th Expedition, Professor Andrzej Myrcha took part in organization of the *Argentine-Polish Field Party*, a voluntary scientific expedition to the Antarctic Peninsula which started our long-lasting friendly relations with Instituto Antártico Argentino (Buenos Aires). During the first common Argentine-Polish field works, he evaluated for the first time the increasing population of a huge colony of the *P. adeliae* penguins in the Hope Bay and was the first one who roughly estimated a number of penguins at the Seymour (Marambio) Island. Together with me, he started collection of penguin bones of the Eocene La Meseta Formation. These materials, supplemented with specimens from the following expeditions, founded a collection of the oldest penguins – one of the largest in the world. Progressing taxonomic studies were many a time presented at conferences in Szczecin, London, Hobart, Venice and Tucuman. The collection is stored at his home Institute of Biology of the Białystok University.

At the turn of 1988/89 he took part in a sea expedition of the Polish Academy of Sciences and the Marine Fishing Institute towards a drift ice between South Shetland Islands and the South Orkneys. During this travel, he observed a number and diversity of seabird species at sea ice and open sea. These studies terminated participation of the Polish team in the international research program Biological Investigation of Maritime Antarctic Systems and Sources (BIOMASS), coordinated by the Scientific Committee on Antarctic Research (SCAR).

He was a member of the Working Group of Seabird Ecology, acting within the same program BIOMASS in 1983–1990. He has been taking part in works of the international scientific program Biological Investigation of Terrestrial Antarctic System (BIOTAS) since 1989 and was chosen a member of the Working Group of Specialists on Bird Dispersal. He prepared an expertise on the Polish polar terrestrial research in ecology and described natural reserves in the Antarctic SSSI No. 8 – Western Shore of Admiralty Bay, as well as the new SSSI No. 34 – Lions Rump.

He has been deeply involved in teaching at the Białystok University for the last years but still succeeded in the continued polar activity. He was active in

organizing the four scientific expeditions of the Institute of Biology (at that time belonging to a branch of the Warsaw University in Białystok) to the Polish Polar Station at Hornsund on Spitsbergen. Two of his scientific heirs participated in these expeditions, whereas his two young assistants took part in Antarctic expeditions of the Polish Academy of Sciences to the *Arctowski* Station in the same time. Until his last days, he was active in the Committee on Polar Research of the Polish Academy of Sciences, Scientific Board of the Institute of Ecology of the Polish Academy of Sciences and the Scientific Board of the Department of Antarctic Biology of the Polish Academy of Sciences, being also an active member of the Editorial Board of the quarterly *Polish Polar Research*. He has been working hard lately over a large palaeontological monograph which verifies profoundly the present taxonomy of fossil penguins. He succeeded in preparation a principal part of this monograph and the rest is to be done by his friends.

He still took a part in a prestige ceremony, organized in Antwerp, August 1997 and connected with a centenary of participation of the two Polish scientists, Henryk Arctowski and Antoni Bolesław Dobrowolski, in the Antarctic *Belgica* Expedition. Nobody expected that it was the last travel of Andrzej. He left a huge scientific output and many pupils with implanted passion for polar research.

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