

40 years of the Institute of Paleobiology of the Polish Academy of Sciences

The Institute (at that time Zakład Paleozoologii PAN) was formally created in 1952 as a branch of the newly organized Polish Academy of Sciences, which arose due to fusion of formerly independent scientific societies and foundations. However, it was only after Roman Kozłowski, then the professor of paleontology of Warsaw University, accepted in 1954 the Institute's directorship, that the Institute emerged from the University's chair of paleontology. Since the very inception of the Institute the research here has had strong a biological tendency. The professional perfection and intellectual openness of Kozłowski were of crucial importance in developing the basic features of the Warsaw school of paleontology during the first few years of the Institute. Scientific activities at the paleontological institutions of the University and the Academy were completely unified at that time and, except for different sources of research funding for particular students, there actually was a single school of paleontology in Warsaw, the one led by Kozłowski. The Institute's affiliation to the Academy allowed for assembling a team of paleontologists which was much larger than if university teaching were their main duty.

It is noteworthy that, despite a strong political pressure, Polish paleontology was never involved in 'lysenkoism' and not a single paleontological article condemning the alleged 'idealism' of Western genetics or evolutionary theory has been published, partly due to Kozłowski's scientific and moral stature. When political conditions improved after 1956, this fact facilitated re-establishing ties with scientific institutions abroad.

Roman Kozłowski developed a ground of paleontological studies in Poland, which was aimed at description, according to the highest standards of paleontological taxonomy, of the main fossil groups found in Poland. This project has resulted in publication of several large monographs and many papers of internationally acknowledged value. Beginning with 1963, several expeditions to Mongolia were organized by Kozłowski's successor as Director of the Institute since 1960, Zofia Kielan-Jaworowska. These expeditions opened a new perspective for the Institute. Eight expeditions to the Gobi Desert have resulted in a large collection of Late Cretaceous mammals, reptiles, amphibians, birds, and other fossils. During the last twenty years, the works on these materials conducted by the



Fig. 1. Professor Roman Kozłowski with his pupils, Zofia Kielan-Jaworowska and Adam Urbanek.

Roman Kozłowski (1889-1977). Graduated 1910 from Sorbonne where, after a few years of teaching geology in Oruro, Bolivia, defended in 1921 his Ph.D. based on Bolivian fossils. In 1923 he went back to Poland and received in 1927 a professorship at Warsaw University. Renown for his monographs on Paleozoic fossils and interpretation of graptolites as extinct relatives of Recent Pterobranchia (Hemichordata), a discovery based on extensive studies on Ordovician graptolites extracted chemically from flints and

Institute's employees as well as by colleagues from other paleontological centers in Poland and abroad, led to the publication of several large volumes and numerous descriptive papers; a permanent cooperation with vertebrate paleontologists all over the world has also been established. Of special importance are the results of osteological studies on primitive mammals as well as dinosaurs.

Since some employees of the Institute were more and more deeply involved in research in Spitsbergen and Antarctica, a formal polar research project has been established. Paleontological expeditions were undertaken to the Hornsund region of Spitsbergen in 1974, 1975, 1976, and 1979 as well as to the South Shetland Islands area in 1978, 1980, 1985, 1987, 1990, and 1991. In both cases, the permanent stations held there by the Polish Academy of Sciences were used.

Although the initial age structure of the Institute's staff was rather uniform, owing to instant employment of a large group of scientists, it is presently reasonably balanced. The number of researchers has increased steadily (Fig. 1) until the last couple of year when several people resigned or retired and nobody has been hired in replacement. The most recent decrease in size of the Institute is a result of general economical difficulties in transforming Polish state but also, to some degree, an expression of changes in the organization of science in our country.

Most of the members received their doctoral degrees while working at the Institute. They usually graduated from Warsaw University. The Scientific Council of the Institute is entitled since 1977 to grant Ph. D. degree (doctor of natural sciences) and since 1991 also habilitations in paleontology. There are 25 scientists at the Institute and 23 people of technical and administrative staff. There is a complete freedom in choice of research topics in the Institute; opinions are sometimes expressed that this freedom goes a bit too far. With the increasing role of government research grants, distributed by the newly established Committee of Scientific Research (KBN), in financing of Polish science, this will definitely change in nearest future.

In the evolution of research at the Institute over the last twenty years, a trend appears to replace broad taxonomic studies on particular fossil groups by either even broader generalizations concerning the patterns and constraints in the evolution of life, or by histological studies on chosen fossil objects, or by precisely set microevolutionary analytic works. This is an expression of general trends worldwide as well as interests of particular members of the Institute. Gradually, topics related more to sedimentology and geochemistry than to organismal biology begin to play a major role. The major topics are as follows:

(1) The most general geochemical aspects and possible patterns in the evolution of biosphere are studied by Józef Kaźmierczak, Antoni Hoffman, and other colleagues. The group has close ties with geochemists at the Universities of Hamburg, Tübingen, and Lublin.

(2) Evolution of the astogeny in clonal organisms is the subject of studies by Adam Urbanek and coworkers.

(3) Functional analysis and cladistics of fossil reptiles based on Mongolian materials are continued by Halszka Osmólska with her team.

(4) Micro- and ultrastructural studies on fossil materials, in particular conodonts (Hubert Szaniawski) and ammonites (Cyprian Kulicki), are conducted since the early 1970's.

(5) Taxonomic, biostratigraphic, and evolutionary aspects of micropaleontology are studied by several workers at the Institute.

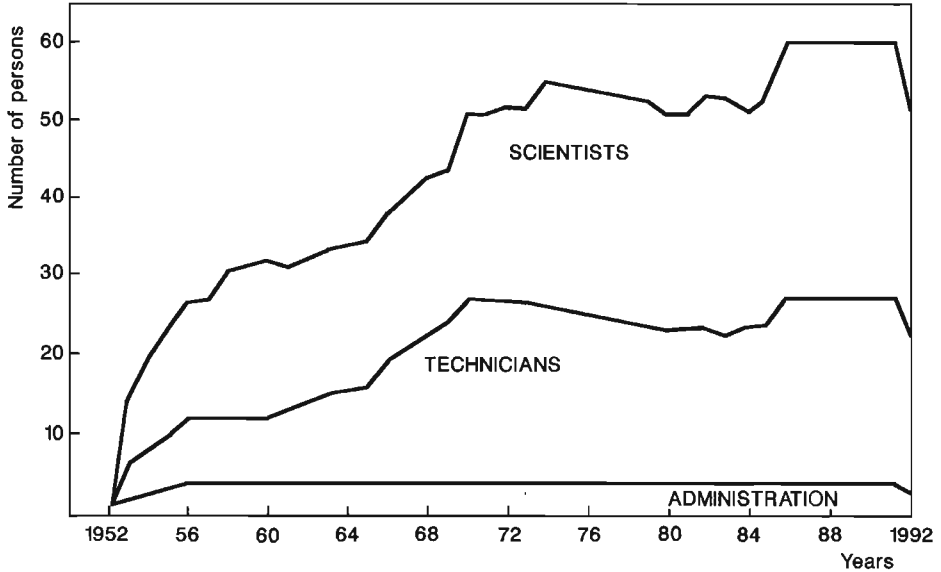


Fig. 2. Changes in number of academic and supporting staff.

Scientific staff of the Institute of Paleobiology and topics of their scientific interest

Director

Hubert Szaniawski, Professor (comparative anatomy; scolecodonts and conodonts).

Vice-Director

Halszka Osmólska, Professor (cladistics; trilobites and dinosaurs).
Director 1983-1989.

Chairman of Scientific Council

Jerzy Fedorowski (Professor and Rector of the University of Poznań).

Department of Biogeology

Józef Kaźmierczak, Professor (biosedimentology and biomineralization; microbialites, algae, sclerosponges), Chairman of the Department.

Antoni Hoffman, Associate Professor (evolutionary paleontology, evolutionary theory, paleoecology).

Dr. **Michał Gruszczyński** (paleoecology, carbonate petrology).

Dr. **Krzysztof Małkowski** (paleoecology).

Dr. **Andrzej Pisera** (sedimentology and paleoecology of reefs; Mesozoic crinoids, sponges).

Marcin Machalski, M. Sc. (paleoecology; oysters, shell beds).

Department of Morphology

Gertruda Biernat, Professor (taxonomy; Paleozoic brachiopods), Chairman of the Department.

Magdalena Borsuk-Białynicka, Associate Professor (cladistics; Cretaceous lizards, dinosaurs).

Dr. **Andrzej Baliński** (taxonomy and biostratigraphy; Devonian brachiopods, conodonts), Manager of the Publishing Department.

Dr. **Cyprian Kulicki** (ontogeny, ultrastructure; ammonites).

Dr. **Aleksander Nowiński** (taxonomy; tabulates).

Dr. **Ryszard Wrona** (taxonomy; chitinozoans, phosphatic microfossils).

Karol Sabath, M. Sc. (functional analysis; dinosaur eggs, theropods).

Department of Evolutionary Paleontology

Adam Urbanek, Professor and Member of the Polish Academy of Sciences (theory of evolution; graptolites), Chairman of the Department and Editor of *Palaeontologia Polonica*, Director 1989-1991.

Ewa Roniewicz, Professor (taxonomy; scleractinians).

Lech Teller, Professor (biostratigraphy; graptolites).

Jerzy Dzik, Associate Professor (evolutionary paleontology, conodonts, cephalopods, and other invertebrates), Editor of *Acta Palaeontologica Polonica*.

Andrzej Gaździcki, Associate Professor (biostratigraphy; Triassic foraminifers), Editor of *Polish Polar Research*.

Janina Szczechura, Associate Professor (taxonomy, biostratigraphy, paleoecology, foraminifers, ostracods).

Dr. **Ewa Olempska** (taxonomy and biostratigraphy; Paleozoic ostracods and foraminifers).

Dr. **Danuta Peryt** (biostratigraphy; foraminifers, coccolites).

Anna Kozłowska-Dawidziuk, M. Sc. (taxonomy; graptolites-retiolites).

Jarosław Stolarski, M. Sc. (taxonomy; scleractinians, operculate corals).

The Institute of Paleobiology is rated among the leading scientific institutes in Poland. This is a result of relatively high quality and numerous publications by the members of the Institute. According to data provided by ISI (thus restricted to just a few leading paleontological journals), in the last five years 490 citations were counted in the journals covered by Science Citation Index.

Library

During World War II the collections of paleontological literature at Warsaw University and in the Geological Survey were destroyed. A collection of the basic publications had therefore to be assembled from scratch. Initially, it was the private library of Roman Kozłowski that served as the major source of scientific literature for paleontologists in Warsaw. He subsequently transferred his books and journals to the Institute, and the core of the Library was established in this way. The book collection grew steadily, owing mainly to gifts from our colleagues from abroad, but after the political tensions relaxed in the mid-1950's and international contacts have been

rebuilt, a new policy could be implemented. An exchange programme of publications was established in 1962, and the Institute receives consequently paleontological serials and periodicals. Concerning books and journals which can not be obtained on exchange basis, we have to rely on the limited financial possibilities of the Academy. We owe much to the generosity of our friends from Western scientific institutions.

The library of the Institute houses currently the largest collection of paleontological books and periodicals in Poland. When the stock was taken last time in 1986, the library held 10 854 volumes of books and separate reprints and 27 006 volumes of periodicals. Among the periodicals received, we subscribe to 18 foreign titles and receive by exchange 220 titles from 50 countries.

Publications

The Institute publishes two journals addressed to international readership. The *Acta Palaeontologica Polonica* accepts papers of reasonable length concerning all problems related to paleontology; the *Palaeontologia Polonica* is designed for publication of descriptive monographs.

The first attempt to establish a paleontological serial devoted to 'paleontology' of Polish fossils dates back to 1845 when Ludwik Zejszner, (spelled Zeuschner in his papers published in German journals), known mostly for his descriptions of ammonites and other fossils from the type Tithonian in the Polish Carpathian, started to publish the *Paleontologia Polska* with lithographic plates. The condition of science in the part of Poland ruled at that time by Russia was deteriorating, however, and he was not able to continue publication, which stopped after three issues. The next attempt was made in 1913 by Jan Lewiński whose greatest achievement in paleontology was a monograph (published in France) of fossils coeval to the Tithonian but from central Poland. His *Paleontologia Ziemi Polskich* did not survive World War I and only two volumes were published. The *Palaeontologia Polonica*, established by Roman Kozłowski in 1929 is, in a sense, continuation of the latter serial. Owing to Kozłowski's reputation for professional excellency, concerning also editing and illustrating paleontological articles (his Bolivian monograph in *Annales de Paléontologie* was remarkable in this respect), he was able to found a serial publication competitive to the leading German and Anglo-Saxon periodicals. Fortunately, Kozłowski unlike many other Polish academics survived World War II and has been able to continue his work. 51 Volumes have been published till 1992, among them Kozłowski's classic monographs of the Early Devonian brachiopods from Podolia and the Tremadocian graptolites extracted from chalcedonites by means of hydrofluoric acid and also Henryk Makowski's monographic presentation of the problem of sexual dimorphism in ammonites.

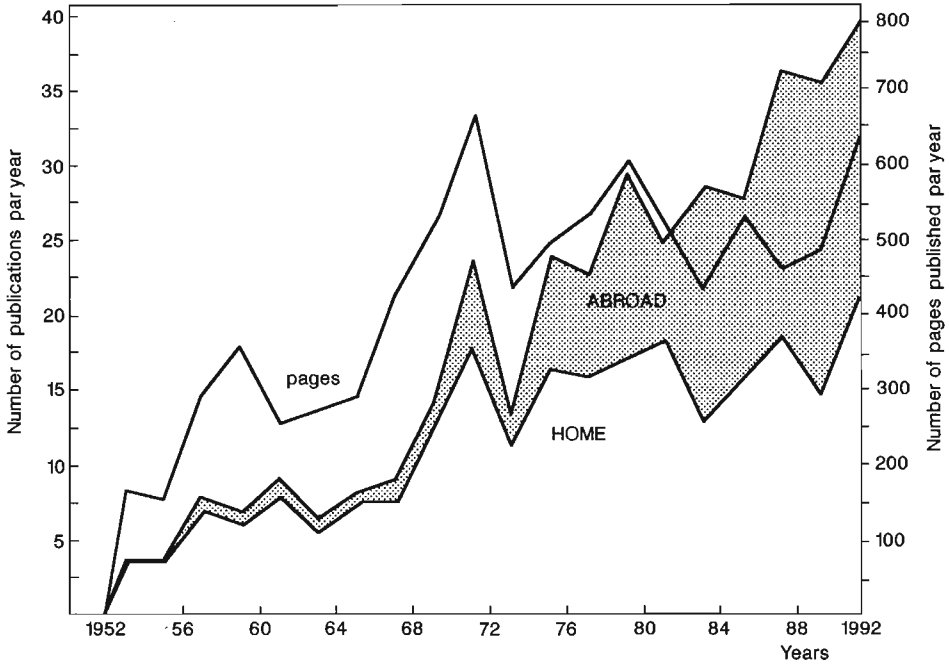


Fig. 3. Publications of the employees of the Institute in number of papers (below) and pages per year. Shaded are publications in Western international journals; the others appeared in Poland, though mainly in English.

Acta Palaeontologica Polonica emerged in 1956 from the *Acta Geologica Polonica*, which first appeared in 1950 and used to contain many papers authored by employees of the Institute. Because the journal was not able to afford the increasing number of paleontological articles, Roman Kozłowski, a member of the Editorial Board of the *Acta Geologica Polonica*, decided to establish a sister journal devoted exclusively to paleontological topics. Initially, papers in Polish, French, and occasionally Russian had been accepted along with those in English, but since more than twenty years English is practically the exclusive language of the *Acta Palaeontologica Polonica*, though brief Polish summaries are added to every paper.

The main scope of the journal is descriptive paleontology, though occasionally papers concerning evolutionary problems are also published. Of special interest is a series of papers on physiological explanations of peculiarities in the evolution of astogeny, which have been published by Adam Urbanek in the 1960's. The results of international symposia on graptolites (1978), corals (1980) and terrestrial ecosystems (1983) held at the Institute did also appear in this journal.

Both the journals are open for authors from outside the Institute (there are no page charges and a reasonable number of free reprints is provided). It is the ambition of the editors to keep international standards in both

merits and editing. In 1991 our own Publishing Department was established which has allowed to introduce also high quality printing techniques. All papers undergo peer review before they are accepted to press.

Museum of Evolution

Since 1985 a paleontological museum is maintained by the Institute in the Palace of Science and Culture in the center of Warsaw. The present exhibition showing the evolution on land was prepared by Zofia Kielan-Jaworowska prior to her departure for the University of Oslo. Mounted skeletons of dinosaurs, found by our expeditions in the Gobi Desert, are the most impressive of the exhibition.

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