

Paleochemistry and Paleoecology

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Bryozoa, chemofossils, palaeochemistry



Research

Palaeochemistry and Palaeoecology: The principal goal of palaeo(bio)chemical research is the detection and identification of chemofossils ("biological markers") in sediments, fossils and organic minerals. Ideal results may yield data about compounds closely related to the biochemistry of fossil organisms. In addition valuable information can be obtained on diagenetic processes of organic substances in sediments as well as data about different conditions which sediments have suffered like pressure, temperature etc. Our main interests concentrate on the study of terpenes from fossil resins ("ambers") and similar organic minerals. Com-

puter-aided gas liquid chromatography/mass spectrometry is the principal tool used in these studies. In addition to the identification of single species of organic minerals, the determination of resin-producing plants by means of "chemofossils" is our main goal. Such studies can also be useful for the determination of the geographical origin of the amber material used in prehistoric times.

Regarding palaeoecology our department has been engaged since more than twenty years in the study of fossil bryozoan faunas. This group of organisms is of great importance for the reconstruction of ecological data of fossil environments (e.g.: temperature, salinity, water currents, depth). The taxonomic basis required for such studies is rather insufficient in many families, however. Therefore extensive revisions including recent material are necessary. Until now we have mainly studied faunas of the Neogene; in future investigations will be extended to include also the Paleogene and some Mesozoic faunas. In addition to ecological information valuable results can be obtained regarding palaeobiogeographical questions.

Teaching

Basic lectures introducing into palaeozoology, palaeoecology, fossils of the Precambrian and the history of palaeontology are offered at regular intervals. An introduction to organic geochemistry as well as specialized lectures on different topics of palaeochemistry and amber research are scheduled from time to time.

International Cooperations

Muzeum Ziemi (Warszawa, Poland); Department of Mineralogy, Geochemistry and Crystallography - Charles University (Praha, Czech Republic); Mineralogical Society of Russia (St.Petersburg,

Russia) and Geologisch-Paläontologisches Institut und Museum, Universität Hamburg (Germany).

Selected References

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