

# ENVIRONMENTAL CHANGES IN POLAND DURING THE LAST 12 000 YEARS RECORDED IN LAKE AND MIRE SEDIMENTS

by

Magdalena RALSKA-JASIEWICZOWA

The subject corresponds with the aims of the international IGCP project No 158 B and has been carried out as the Polish contribution to this project. M. Ralska-Jasiewiczowa was the leader of the Polish working group and the secretary of the international coordination committee of IGCP - Project No 158 from 1978-1988.

The reconstructions of environmental changes are based on studies of reference sites representing palaeoecological regions (so called type regions) into which the country has been subdivided. Besides the basic analytic methods, i. e. pollen analysis and radiocarbon dating, other palaeoecological methods such as identification of cladocera, diatoms, molluscs, and insects were used. Chemical, mineralogical, and stable isotope analyses were also performed at many sites in cooperation with competent specialists.

With the aim of acquiring a uniform biostratigraphical base for correlations, numerical methods (programs ZONATION and PCA performed by A. Walanus) were applied to zonation of palaeoecological (mainly palynological) data sequences.

M. Ralska-Jasiewiczowa investigated the individual reference sites for four type regions: the Bieszczady Mts, the Olsztyn Lake District, the Masurian Great Lakes District, and the Baltic Coast. She was also the editor of the three *Acta Palaeobotanica* volumes (1) presenting Polish contributions to IGCP- Project 158 B.

Recently, she prepared, in cooperation with M. Latałowa, the synthesis of IGCP-158 palaeoecological studies for Poland, based on data from 38 reference sites, including also many other complementary sites. The histories of vegetation and climate, and of lakes and mires, in connection with the hydrological and pedological changes, and also of anthropogenic changes of natural environment, have been reconstructed. The results are correlated within the so called synthesis regions, grouping the type regions of those main landscape zones, where a sufficient amount of information has been obtained. The mountains, the uplands, the eastern mid-Polish lowlands, the lake districts and the Baltic coastal zone are treated as synthesis regions. The interpretations consider the geographic-climatic gradients, the situation of the area towards the limit of the last ice-sheet, the directions and rates of migration of individual plant taxa, the topographic and soil conditions etc.

## References

1. Ralska-Jasiewiczowa, M. (ed.) Environmental changes recorded in lakes and mires of Poland during the last 13 000 years.  
*Acta Palaeobot.* 1982. 22(1).  
*Acta Palaeobot.* 1987. 27(1).  
*Acta Palaeobot.* 1989. 29(1).

2. Ralska-Jasiewiczowa, M. (ed.) 1986. Palaeohydrological changes in the temperate zone in the last 15 000 years, subproject B, lake and mire environments. Project catalogue for Europe. pp. 161, Lund Univ. Reports, LUNDBDS.

3. Berglund, B. E. (ed.), Ralska-Jasiewiczowa, M. (asst ed.) Handbook of Holocene palaeoecology and palaeohydrology. pp. 869, Wiley and Sons. Ltd. Chichester - New York.

## SEDIMENTS

by

Magdalena RALSKA-JASIEWICZOWA  
Magdalena RALSKA-JASIEWICZOWA

Lake growth patterns in central Europe reveal evidence of rapid climatic changes in the last 15 000 years.

The rapid correlation with the aim of the international IGC project No 128 B and has been carried out as the Polish contribution to the project. M. Ralska-Jasiewiczowa was the leader of the Polish working group and the secretary of the international coordination committee of IGC - Project No 128 B from 1978-1982.

The reconstruction of environmental changes and land-use patterns related to palaeohydrological regimes (so-called paleolimnology) into which the country has been subdivided. The paleolimnology is a Polish method of pollen analysis and palaeoecological methods such as identification of diatoms, diatoms, molluscs and insects were used. Geomorphological, stratigraphical and pollen analysis were also performed in cooperation with competent specialists.

With the aim of acquiring a uniform stratigraphical base for correlation, numerical methods (GRAZ, XONATION and PCA performed by A. Walanus) were applied to pollen and palaeoecological (mainly palynological) data sequences.

M. Ralska-Jasiewiczowa investigated the individual pollen diagrams for lake regions in the Mazowiecki District, the Mazowiecki District and the Baltic Coast. She was also the editor of the three Acta Palaeobotanica volumes (1) presenting Polish contributions to IGC-Project 128 B.

Recently she prepared in cooperation with M. Lajtha, the synthesis of IGC-128 palaeoecological studies for Poland, based on data from 25 pollen sites. In doing so many other complementary sites. The history of vegetation and climate, and of lake and mire, in connection with the biological and pedological changes, and also of anthropogenic changes of natural environment, have been reconstructed. The results are correlated within the so-called synchro zones, grouping the type regions of those main landscape zones, where a sufficient amount of information has been obtained. The mountain, the uplands, the eastern mid-Poland towards the lake districts and the Baltic coastal zone are treated as synchro regions. The interpretations consider the geographic-climatic gradient, the situation of the area towards the limit of the last ice-sheet, the direction and rates of migration of individual plant taxa, the topographic and soil conditions etc.

### References

J. Ralska-Jasiewiczowa, M. (ed.) Environmental changes recorded in lakes and mires of Poland during the last 15 000 years.  
Acta Palaeobot. 1982. 23(1).  
Acta Palaeobot. 1987. 27(1).  
Acta Palaeobot. 1988. 29(1).