



Changes of paleogeographical conditions during the last interglacial-glacial cycle deduced from pollen succession in two loess sequences in SE Poland

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Loess and intraloess paleosols are very difficult objects to investigate by means of pollen analysis. However, the results are very promising because complete profiles can give us a continuous record of interglacial floras' succession, and also of nature and transformations of plant cover in glacial periods, then the environmental conditions of loess deposition.

We report the results of pollen analysis of paleosol-loess/interglacial-glacial complex in two profiles: Tarnawce and Polanów Dolny. The former is located in the San River valley (the marginal, eastern part of the Polish Western Carpathians), and the latter – in the middle Vistula River valley (the marginal, southern part of the Kielce-Sandomierz Upland). The distance between these sites is about 120 km along the SE-NW line.

Pollen analysis was made for 39 samples from the Tarnawce profile and 41 samples from the Polanów Dolny profile.

Bottom parts of pollen diagrams obtained for both profiles correspond to generally accepted scheme of vegetation development during the Eemian interglacial. Floral changes recorded in pollen spectra resemble the Eemian pollen succession found in fossil lacustrine deposits in Poland.

The pollen diagrams from Tarnawce and Polanów Dolny have several common features and also individual ones.

There are following common features:

- lower boundary of the Eemian interglacial is marked in both profiles by the presence of subarctic (?) flora,
- in these parts of the diagrams, which correspond to the Eemian interglacial, the phase of development of hornbeam forests is absent,
- in both diagrams the whole Vistulian is characterized by the occurrence of pollen of trees and shrubs,
- two interstadials, occurring in direct sequence, are marked in both diagrams.

The differences between the diagrams are the following:

- birch is the main component of forests in Tarnawce, and pine – in Polanów Dolny,
- flora composition is similar in both profiles, but the diversity of shrubs and herbs of open habitats is slightly higher in Polanów Dolny,
- *Larix* and *Populus* are found in Polanów Dolny, and absent in Tarnawce.

The above-mentioned common features resulted from a general tendency of climate and vegetation development during the last interglacial-glacial cycle, whereas the differences were caused by different meso- and micro-paleogeomorphological situation of both sites, and probably also by different slope aspect (northern in Tarnawce, southern in Polanów Dolny).

The proportion of trees and shrubs in forests in interstadial periods was significantly affected by the probable occurrence of their refuge areas in the Carpathians.