

# PALYNOLOGIC INVESTIGATIONS ON THE LOWER EOCENE LAYERS IN THE SURROUNDING COUNTRY OF ISZKASZENTGYÖRGY IV.

by

M. KEDVES and L. ENDRÉDI

Botanical Institute of the József Attila University Szeged, Hungary  
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## Introduction

In this work authors performed palynological investigation on two entire profile of the coal measures covering the bauxit layers of Iszkaszentgyörgy.

## Material investigated\*

Designation and petrological description of the samples:

- A) Mine Kincses II., level +75, gangway.
  - K-I-7 — lime-containing marl
  - K-I-6 — clay with Mollusca shells
  - K-I-5 — upper brown coal layer
  - K-I-4 — clay with Mollusca shells
  - K-I-3 — lower brown coal layer
  - K-I-2 — clay with Mollusca shells
  - K-I-1 — grey bauxite
- B) Mine Kincses II., level +50, main deep
  - K-II-7 — lime-containing marl
  - K-II-6 — clay with Mollusca shells
  - K-II-5 — upper brown coal layer
  - K-II-4 — clay with Mollusca shells
  - K-II-3 — lower brown coal layer
  - K-II-2 — clay with Mollusca shells
  - K-II-1 — grey bauxite

## Results

Authors' latest results completing the data published earlier (3, 4) are summarized in the followings:

1. In the qualitative composition of the sporomorphs of the layers it is striking in first line the richness of *Palm* pollens (*Monocolpopollenites tran-*

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*quillus* (R. POT 1934) TH. & PF. 1953 subfsp. *tranquillus*, *M. areolatus* (R. POT. 1934) TH. & PF. 1953 subfsp. *retareolatus* PF. 1953 a, *M. minor* KDS. 1961 a, *M. medius* KDS. 1961 a, *M. magnus* KDS. 1961 a, *M. granulatus* KDS. 1961 a, *M. dorogensis* KDS. 1961 a). These pollens are known above all from the Tertiary layers of the brown coal basin of Dorog. In connection with this the occurrence of spores of „adiennis” type is worthy of mention, especially *Leio-triletes adriennis* (R. POT & GELL. 1933) W. KR. 1959 b subfsp. *pseudomaximus* (TH. & PF. 1953) W. KR. 1959 b, which is also frequent in the spore-complexes of Dorog type. On the other hand, the form-richness of the pollens of *Myricaceae*, *Engelhardtia*, „cingulum” and „liblarensis” types reminds of the sporomorph complex of Dudar. The complex established may be therefore considered qualitative as a transition between the spore-pollen types of Dorog and Dudar respectively, the stratigraphical significance of which is already mentioned in an earlier paper of one of the authors (5).

2. Evaluation of the quantitative data (Fig. 1, Fig. 2) of the layers are summarized as follows: (Note: „Palmae A” shows the quantity of *M. tranquillus*, „Palmae B” that of *M. granulatus* while „Palmae C” the quantity of the other palm-pollens).

The grey bauxite layer of both profile contains sporomorphs only in a minimal quantity. In the *Mollusca*-containing clay below the lower brown coal layer dominate in both profiles the pollens of the „cingulum” type besides a considerable quantity of *Myricaceae*. In the profile K—II the great quantity of the pollens of „liblarensis” type, the residues of *Foraminiferae* with chitinous skeleton and that of the *Scytinascia* (*H. Deák 1*) are worth of mentioning.

It is interesting the palynological composition of the lower brown coal layer. The residues of *Foraminiferae* are lacking in both profiles. The moor producing the brown coal containing layers at the profile K—I might be a shallow, littoral one as shown by the great quantity of *Taxodiaceae-Cupressaceae* which occurs besides the dominante pollens of „cingulum” type. Dominance of the *Myricaceae* pollens at the profile K—II shows a bushy moor as the origin of the layer which might be periodically inundated as follows from the great quantity of pollens of „cingulum” type. Occurrence of pollens of „tranquillus” type in both profiles is remarkable too.

In the *Mollusca* containing clay between the two brown coal layers dominante the pollens of „cingulum” type besides the great quantity of *Myricaceae*. In the profile K—II occur also *Scytinascia* and *Engelhardtia* pollens in large number.

The spore-pollen spectra of the upper brown coal layer are different in the two profiles. This layer is a semiterrestrial formation at the profile K—I with a considerable content of „liblarensis” and *Engelhardtia* pollens and without organisms showing saltwater. At the profile K—II occur in dominante quantity the allochthonous „liblarensis” pollens of trees living outside the moor producing the coal layers. Therefore, this may be considered rather as a formation of a shallow or an open moor. It is interesting the composition of the sporomorphs with a higher percent: Cf. *Coniferae* (*Inaperturopollenites minor* KDS. 1961 a), *Tr. cingulum*, *Myricaceae*, and *Palmae*. The brown coal layer has a fresh-water character in this profile too.



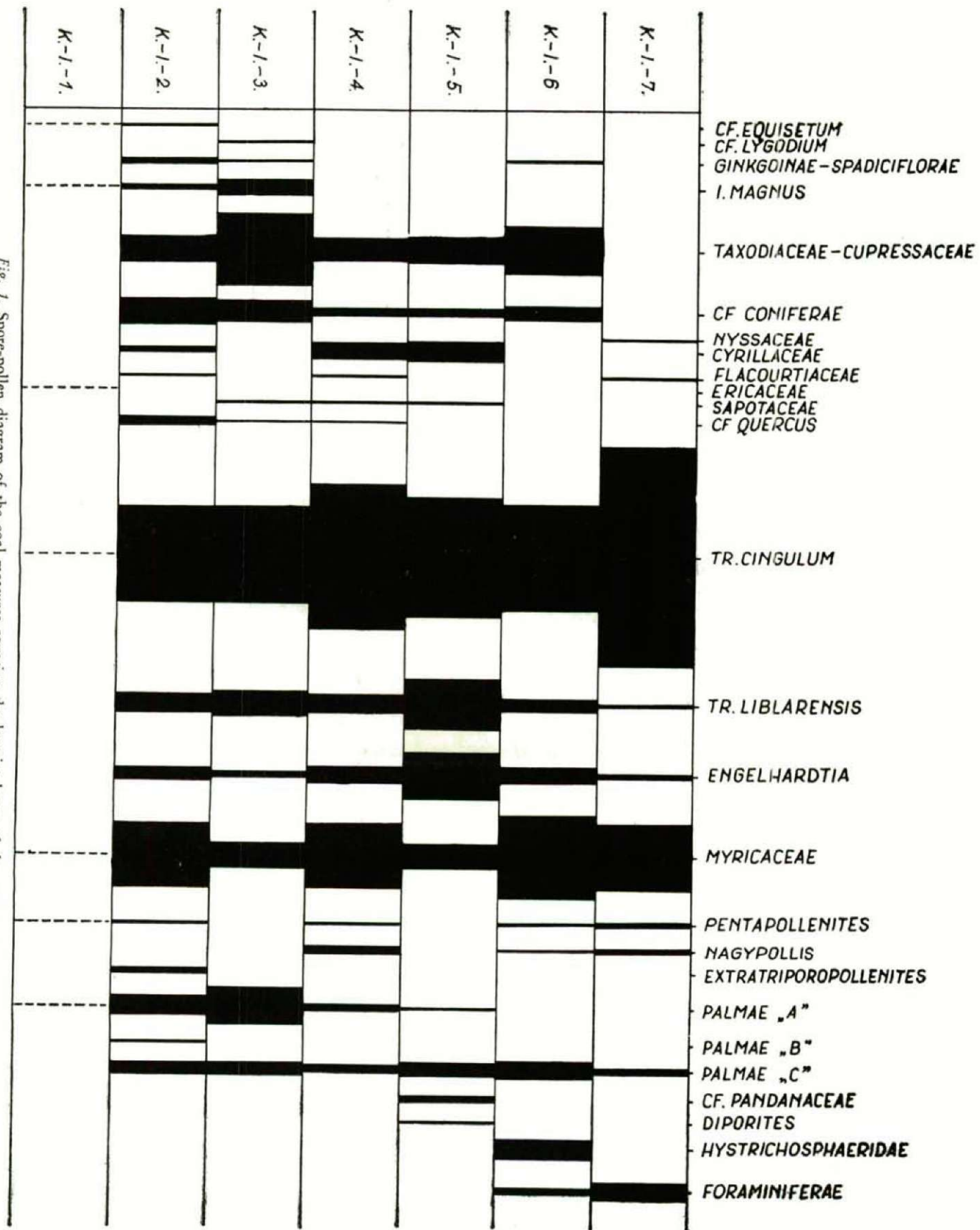


Fig. 1. Spore-pollen diagram of the coal measures covering the bauxite layer of the gangway of level +75 of the mine Kinceses II.

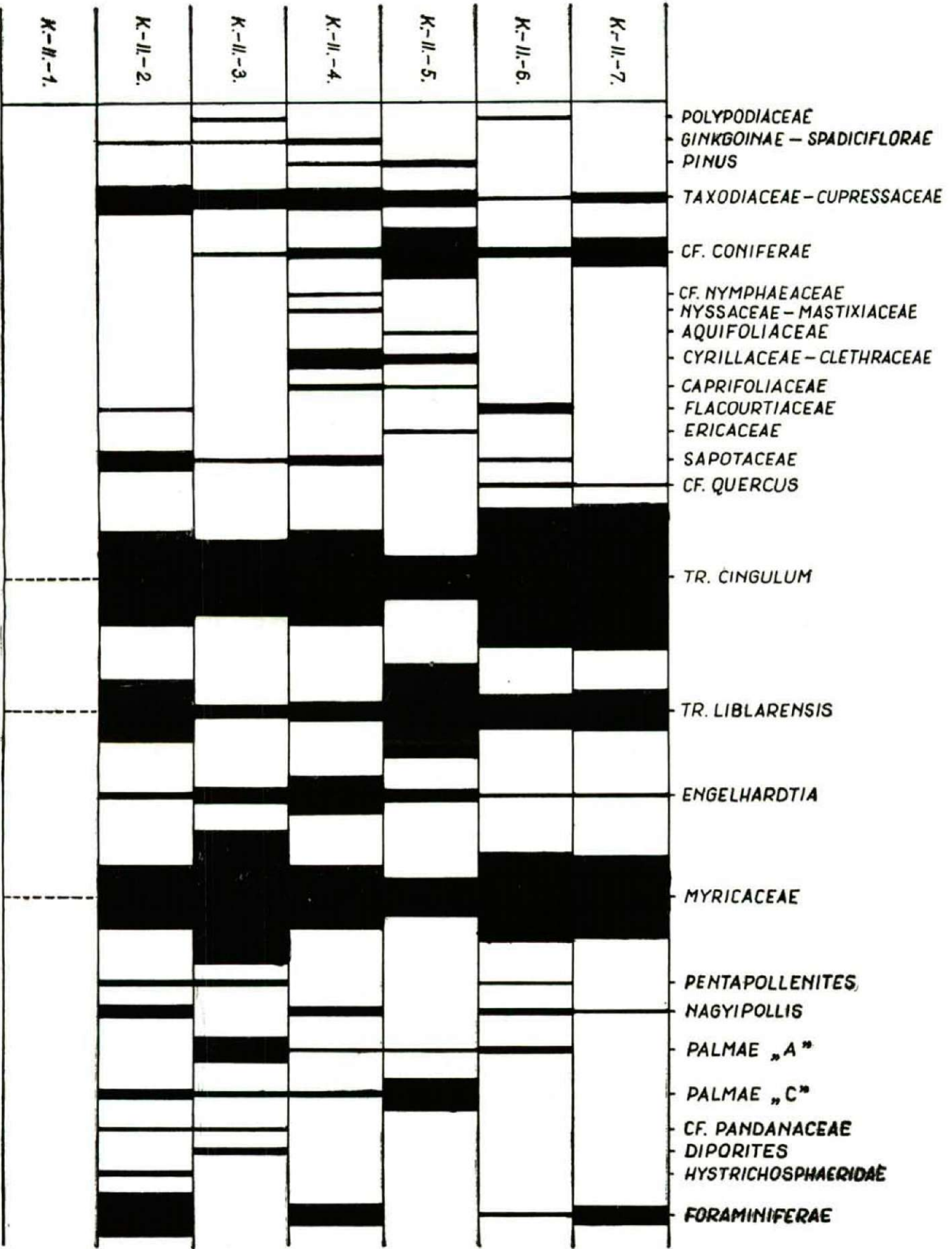


Fig. 2. Spore-pollen diagram of the coal measures covering the main deep of level +50 of the mine Kinceses II.

The cover of the upper brown coal layers are promiscuous or salt-water sediments which is proved by the consistent occurrence of the *Scytinascia* species and the occurrence of *Hystrichosphaeridae* in the sample K—I-6. In both profiles dominante the pollens of „cingulum” type besides a great quantity of the *Myricaceae*. In the profile K—I the quantity of the *Taxodiaceae-Cupressaceae* in the *Mollusca* containing clay is also noteworthy.

### Summary

Summarizing the quantitative data authors emphasize the followings: The brown coal containing layers are of fresh-water origin at both profiles. Salt water indicating organisms together with dirt beads of promiscuous or salt-water origin appear at the profile K—II from the underlaying of the lower brown coal layer while at the profile K—I only in the cover of upper brown coal layer. Consequently profils K—II was situated nearer to the shore of the Eocene sea. The brown coal containing layers are formations of moor-forest or open moor origin.

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