Acta Palaeobot. 37(1): 51–54, 1997

TRAPA PRAEHUNGARICA, A NEW FOSSIL SPECIES FROM THE UPPER PANNONIAN OF HUNGARY

JAN J. WÓJCICKI[1] and JUDIT BAJZÁTH[2]

[1] W. Szafer Institute of Botany, Polish Academy of Sciences, Department of Vascular Plant Systematics, Lubicz 46, 31–512 Kraków, Poland
[2] Hungarian Natural History Museum, Department of Education, Pf. 222, H-1476 Budapest, Hungary

ABSTRACT. *Trapa praehungarica* Wójcicki & Bajzáth, a fossil species new to science is described from the known upper Pannonian of Bükkábrány (Bükk Mts. Piedmont Region, Hungary). The suggested similarity of *T. praehungarica* and *T. heerii* Fritsch known from Plio-/Pleistocene is excluded. Presently it should be rather seen as a Hungarian late Pannonian endemic species related to the neglected species *T. bosniaca* Pantić & Janković, *T. tuzlensis* Pantić & Janković and *T. pontica* Pantić & Janković described from the upper Pontian sediments of NE Bosnia. *T. praehungarica* seems not to be related to fossil and/or recent taxa known from the Far East.

KEY WORDS: *Trapa*, fossil fruits, late Neogene, taxonomy, Europe, Hungary

INTRODUCTION

Fossils of *Trapa* have been found in the sediment of the upper Pannonian (probably of Dacian/Romanian age) of the Bükkábrány brown coal mine (Bükk Mts Piedmont Region, Hungary). The character of sediment with *Trapa* and distribution of other fossils suggests that it represents an area closed to the Pannonian lake shore, localized in piedmont region of the Bükk Mts (László 1989a, b). A precise age of the sediment is rather difficult to establish as generally there is not agreement concerning stratigraphic division of the late Neogene in Hungary (Magyar & Hably 1994). The *Trapa* nuts are scattered in sediment composed of clay and sand (bentonite) deposited directly on the uppermost layer of the lignite. The profile is given in the paper by László (1989b).

DESCRIPTION

Trapa praehungarica Wójcicki & Bajzáth **sp. nov.**

Holotype. Botanical Department, Hungarian Natural History Museum (BP). leg. L. Hably, B. Erdei. Coll. No. 95. 407. 15 (Fig. 1).

Isotypes. Botanical Department, Hungarian Natural History Museum (BP). leg. L. Hably, B. Erdei. Coll. No. 95. 542. 30 and 95. 543. 20 (BP) (Fig. 1); KRAM-P No. 224 (Fig 1).

Paratypes. Geological Museum of Hungary, Hungarian Geological Institute, Budapest. leg. J. László, No. BK 7461, 7465, 7466, 7473, 7606, 7608, 7609.

Locality. Hungary, Bükkábrány, Bükk Mts

Type horizon. Upper Pannonian

Fruits relatively small, always with four horns located on two surfaces; length of fruit 11–19 mm (including neck, if present), width of fruit at the most lateral surface of upper horns 10–17 mm, length/width of fruit (0.8) 1.0–1.3; upper surface of nut ± conical truncated, usually with well defined neck, sometimes the neck lacking or the neck attenuates gradually into upper surface and it is difficult to estimate its length; neck and/or upper surface usually protrude from the upper horns; upper surface visibly slightly ribbed; height of the neck 0–2 mm; on the top of neck a ring of upwarded hairs closing apical aperture usually visible; apical aperture up to (3)4 mm in diameter; corona lacking; upper horns upward, sometime slightly incurved, inclination of upper horns 10°–30°(50°), broadly triangle in outline, without transversal callosity, with a

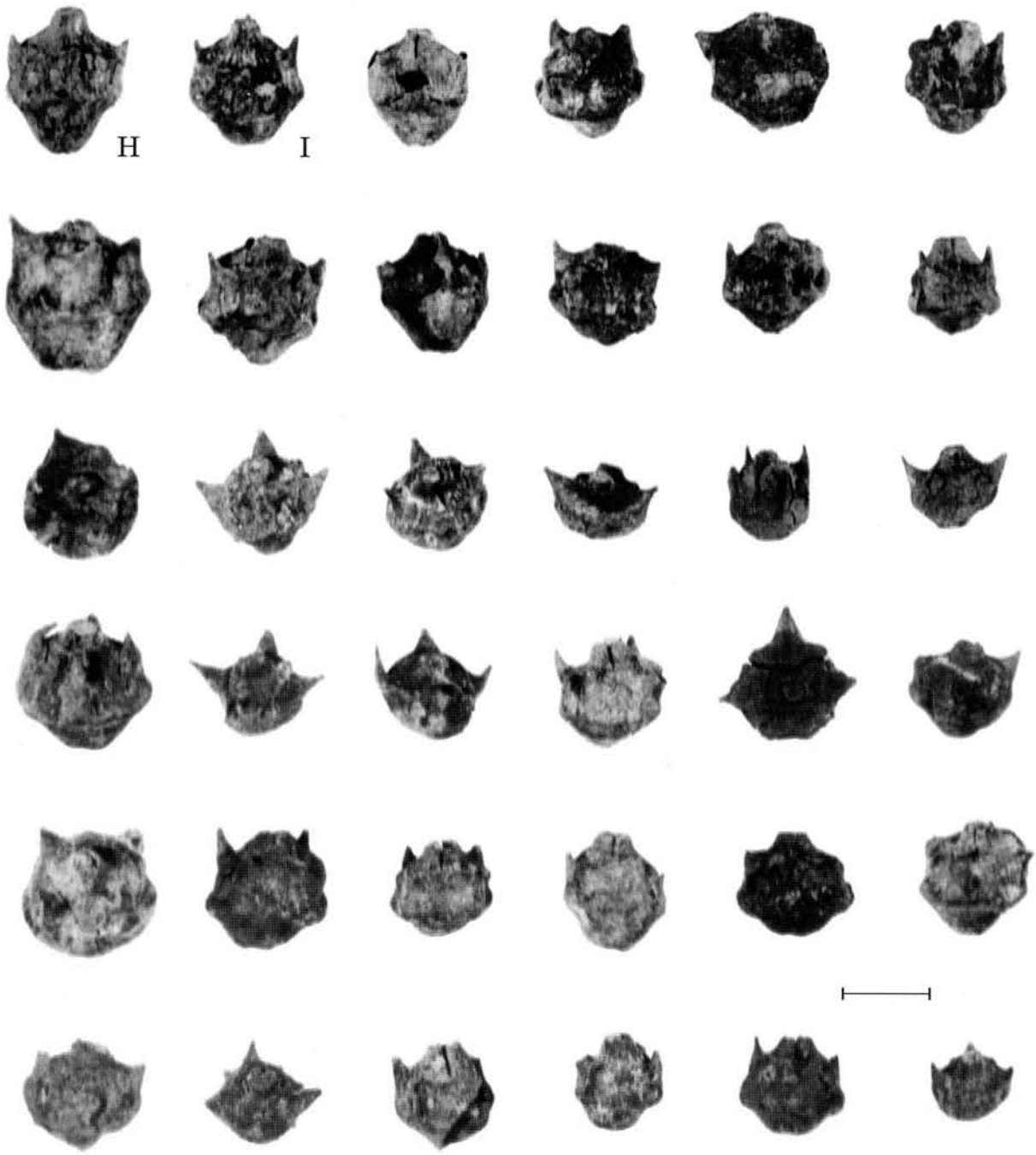

Fig. 1. *T. praehungarica* Wojcicki & Bajzath, sp. nov. H – holotype (BP), I – isotype (KRAM-P), not marked – isotypes (BP). Scale bar – 1 cm

short spine at the edge, bearing sometime a rest of deflected barbs (harpoons); bases of the upper horns visibly auriculate; presence of mat areas rather excluded; lower horns located beneath the level of upper horns usually in the middle or above the centre of the body of nut (0.40–0.67), 3–7 mm long, upwarded, narrowly triangle in outline, at least slightly incurved; between upper and lower horns are present usually well developed tubercles up to 1.2 mm long; lower part of the nut body relatively short, usually reversed conical, surface relatively smooth without visible sculpture (unribbed); base of the nut without well defined basal ring; scar relatively small.

DISCUSSION

The fossil nuts of *Trapa praehungarica* from Bükkábrány indicate not very great variability and their morphotype is rather well stabilized

(Fig. 1). Such a phenomenon of stabilization of the morphotype of *Trapa* nuts within one water reservoir is also characteristic of many recent *Trapa* localities (Staszkiewicz & Wójcicki 1979, 1981, Kadono 1987). The variability observed is restricted mainly to quantitative characters and from among qualitative characters only to the inclination of upper horns, formation of the upper surface of the nut and presence of well defined neck. At the same time, it should not be forgotten that the degree of variability observed in the fossil nuts is artificially enlarged by their fossilization and different mode of compression.

Some of the reference material housed in the Geological Museum of Hungary, Hungarian Geological Institute, Budapest, is determined by László as *T. heerii* Fritsch (see also László 1989a), the species described from the Pliocene of Thüringen, Germany. *T. heerii* figured by Fritsch (1885) is very variable and needs more precise lectotypification as it is based on rather heterogenic material. But in any case, it seems not to be related to our *T. praehungarica*.

The nuts of *T. praehungarica* are also different from the *Trapa* nuts known from the upper Miocene localities of the Central Europe, e.g. *T. moravica* Opravil & Knobloch from the Czech Republic (Opravil & Knobloch 1967, Knobloch 1969) and Romania (Givulescu & Ţicleanu 1986); the very variable series of *T. urceolata* Givulescu & Ţicleanu and *T. expectata* Givulescu & Ţicleanu (Givulescu & Ţicleanu 1986, Ţicleanu 1995); the nuts from Austria determined by Kovar (1979) as *T. heerii* Fritsch, which also seem to differ from what was figured by Fritsch (1885); as well as the nuts from the Central Poland determined as *T. silesiaca* Goeppert (Stuchlik et al. 1990), which are reexamined by the first author and the result will be published separately.

The present fossil species indicate some similarities to the three neglected fossil species, *T. bosniaca*, *T. tuzlensis* and *T. pontica*, described by Janković and Pantić (1953) from the upper Pontian sediments (stratigraphic position after Stevanović 1951) of the north-east Bosnia. Apart from obvious differences, as e.g. bigger size and other characteristics of the upper surface of the nut, the general shape of the nuts from Hungary and Bosnia is rather similar. Also, upward upper horns, present not too often in the fossil *Trapa* nuts, suggests their rather close relation. It is not excluded then that all the taxa under discussion belong to the same evolutionary path.

Comparing *T. praehungarica* nuts with the available fossil and recent material, it should be concluded that the species represents very unique morphotype which is not observed in either historic or contemporary taxa of the genus. Presently it should be rather treated as a Hungarian late Pannonian endemic species. Similarly, it is interesting that *T. praehungarica* seems not to be related to fossil and/or recent taxa known from the Far East (cf. Nakano 1914, Flerov 1926, Miki 1952).

ACKNOWLEDGEMENTS

The authors thank Prof. Lilla Hably (Budapest) and Ing. György Szokolai (Bükkábrány) for their helpful comments on stratigraphic position of the sediment, Prof. László Kordos (Budapest) and József László, M. Sc. (Budapest) for allowing them to make use of the reference collection at the Geological Museum of Hungary, Budapest, Boglárka Erdei, M. Sc. (Budapest) for technical assistance, and Dr. Robert W. Pemberton (USA) for checking their English.

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