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**ABOUT THE POSSIBLE PRESENCE OF *BERBERIS KYMEANA* (UNGER)
KVACEK ET ERDEI IN THE EARLY PANNONIAN FLORA FROM
VALEA CRIȘULUI (BIHOR COUNTY - ROMANIA)**

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Abstract: About the Possible Presence of *Berberis kymeana* (Unger) Kvacek et Erdei in the Early Pannonian flora from Valea Crișului (Bihor / Romania). On basis of the material collected and published in 1962 under the name of Proteaceae ?, respectively, *Hakea banksiaeformis*, the author supposes the presence of the *Berberis kymeana* (Unger) Kvacek et Erdei 2001 taxon in the deposit of fossil plants from Valea Crișului (ante Valea Neagră).

The author published in 1962 a study of the rich fossil flora from Valea Neagră (nowadays Valea Crișului), from Bihor county. It is the flora of two fossiliferous points, V.N. I (preserved as impressions), and V.N. II (preserved as compressions), respectively. During the following years the author came back several times to this material: 1968, 1973, 1974, 1975 (cuticular study of compressions from the fossiliferous point V.N. II), 1989, 1998, 1999, with the mention that in 1991 he published a critical revision of the flora from the fossiliferous point V.N.I.

In the paper from 1962, in the chapter "incertae sedis", a leaf fragment, identified as *Hakea banksiaeformis*, figuring on plate 33, fig.185, was cited with a question mark, as belonging to the Proteaceae family. Already at that time the author expressed his doubts that a Proteaceae could be present in a flora of Early Pannonian age. Recently (2001), Kvacek and Erdei discussed these remains of so-called Proteaceae, respectively, genera *Lomatia* and *Grevilea*, described by Saporta, Unger, Ettingshausen and Heer from different floras of the European Tertiary in the XIXth century. The examination of a vast fossil material, compared to a present-day one, led to the conclusion that what was identified at that time as *Hakea*, *Grevilea* or *Lomatia*, are, in fact, remains belonging to *Berberis L.* genus. In this situation they establish a new combination with the material described by Unger (1861 and 1867) from Kummy (Greece) under the name of *Grevilea kymeana*, also including here the material described by Saporta (1862) under the name of *Lomatia aquensis*. As concerns the material from Valea Neagră, figuring under the name of *Hakea banksiaeformis*, we must admit that it is entirely similar to Saporta's material, described as *Lomatia aquensis* or to that of Unger, described as *Grevilea kymeana*, both reconsidered under the name of *Berberis kymeana*. We will give here a short description of our material: a fragment from the terminal part

of a linear-lanceolate leaf (Fig. 1). The fragment has L - 27mm, l - 4mm. The margin has small widely spaced tiny, spiny teeth until 1mm long, with rounded sinuses. The admedially sides are nearly straight, or concave. Midvein present, slightly bent. Secondary veins missing.

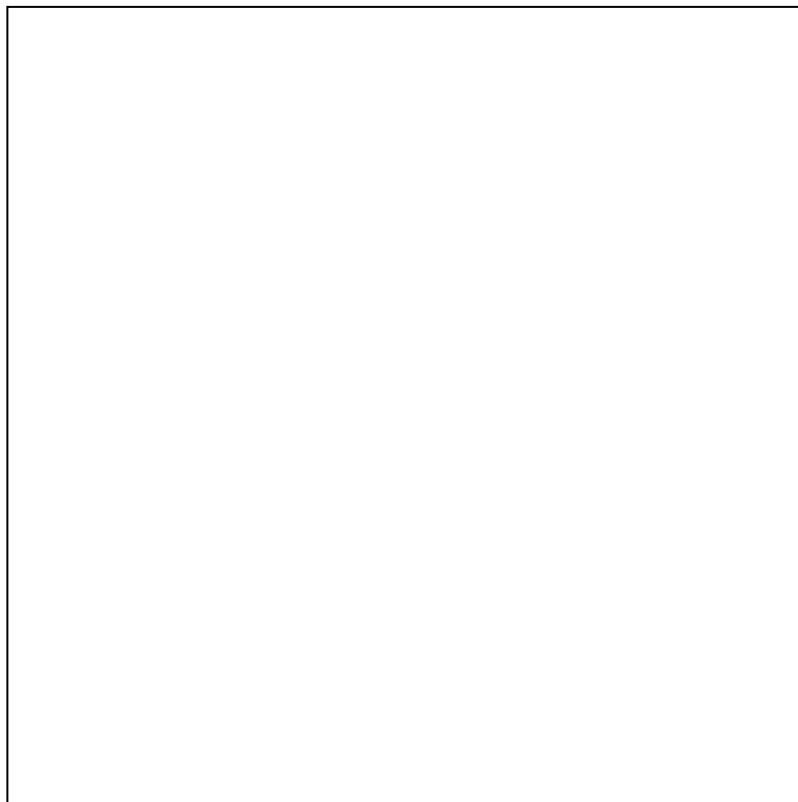


Fig. 1: Fragment from the terminal part of the *Berberis kymeana* leaf. (scale: 2:1)

As concerns the corresponding present-day forms, the authors refer to *Berberis lycioides* Sandf., *B. lepifolia* Ahrendt and others which grow in Himalaya, Yunan and central China. We mention, though, that if from the point of view of nervation the fossil material resembles the present-day one, from the point of view of morphological aspect (width and length) the difference is notable. Yet, in the recent material presented by Kvacek and Erdei, the closest seems to be *B. insolita* Sch. from Yunan (China).

We will also specify that the rareness of the material, as well as its precarious state of conservation, allow us to present it as a possible component of the fossil flora from Valea Crişului. Under these conditions it must be considered a Miocene relict from Early Pannonian, since from the geological point of view it is cited only in the European Oligocene and Early Miocene. In fact, the association in which it appears in the above-mentioned flora also shows strong affinities with the Early Sarmatian floras of the basin. Thus, we will mention very many *Pinus*, *Tetraclinis salicornioides*, *Palaeocarya orsbergensis*, very many Lauracee, especially *Daphnogene*, and many leguminous types. There also are many types of *Quercus* with dentate leaves, along with *Castanea kubinyii*, but very rarely *Fagus*,

and Betulaceae, *Sapindus*, *Zizyphus*, *Daphne*, *Diospyros*, and others. The material is inventoried under nr.P-22614 in the collections of the Geological Institute of Bucharest.

REFERENCES

1. Givulescu, R., 1962, Die fossile Flora von Valea Neagră Bez. Crisana, Rumänien, *Palaeontogr. B*, 110, 5-6, p.128-187.
2. Givulescu, R., 1968, Die Gattung Cunninghamia R.Br. im unterem Pannon Rumäniens, *N.Jb.Geol.Paläont. Abh.*, 130, 2, p.129-132.
3. Givulescu, R., 1973, Sur quelques Lauracées du Pliocène de la Roumanie, *Bot. Jb. Syst.*, 93, 1, p.160-164.
4. Givulescu, R., 1974, Periploca cf. graeca în Pannonianul bazinului Borod, *D.S. Inst. Geol.* 60, 3, p.217-219.
5. Givulescu, R., 1975, Fossile Pflanzen aus dem unteren Pannon von Valea de Cris, Kr. Bihor, Rumänien, *Acta palaeobot.*, 16, 1, p.71-82.
6. Givulescu, R., 1982, Eine strukturbietende Ilex-Art aus dem Pannon Rumäniens, *Acta palaeobot.*, 22, 2, p.171-178.
7. Givulescu, R., 1991, Câteva observațiuni cu privire la lucrarea R.Givulescu: "Die fossile Flora von Valea Neagră, Bez. Crisana, Rumänien 1962", *Nymphaeae*, 21, p.69-80.
8. Givulescu, R., 1998, Mahonia sp. (n.sp.?) une nouvelle Mahonia du Pannonien inférieur de Valea Crisului, Bihor, Roumanie, *Studia Univ.Babeș-Bolyai, geol.*, 43, p.3-5.
9. Givulescu, R., 1999, Un nouveau taxon pour la flore pannonienne de Valea Crisului (dept. de Bihor, Roumanie), *Nymphaea*, 27, p.73-75.
10. Kvacek, Z., Erdei, B., 2001, Putative procetaceous elements of the Lomatites - type reinterpreted as Berberis of the European Tertiary, *Plant Syst. Evol.*, 226, p.1-12.
11. Saporta, G., de, 1862, Etudes sur la végétation de Sud-Est de la France à l'époque tertiaire, *Ann. Sci. Nat. Bot. sér.IV*, 17, p.191-311.
12. Unger, Fr., 1862, Wissenschaftliche Ergebnisse einer Reise in Griechenland und in den Ionischen Inseln, W. Braunmüller.
13. Unger, Fr., 1867, Die fossile Flora von Kumi auf der insel Euboea, *Denkschr.k.Akad.Wiss., math.naturw.Cl.27*, p.27-90.

DESPRE PREZENȚA PROBABILĂ A LUI BERBERIS KYMEANA (UNGER) KVACEK ET ERDEI ÎN FLORA PANONIANĂ INFERIOARĂ DIN VALEA CRIȘULUI (JUDEȚUL BIHOR - ROMÂNIA)

(Rezumat)

Pe baza cercetărilor lui Kvacek și Erdei (2001) asupra prezenței proteaceelor de tipul *Lomatia* și *Grevilea* în Terțiarul Europei, autorul revizuieste un material descris în 1962 din zăcămintul de plante fosile de la Valea Neagră (azi Valea Crișului) și determinat la vremea sa sub denumirea de Proteaceae ? - *Hakea banksiaeformis*, ajungând la concluzia că ar putea fi vorba de un *Berberis kymeana* Kvacek et Erdei. Avem de-a face cu un relict miocenic în Pannonianul inferior.