

***Ptilophyllum maculatum* GIVULESCU 1992**

OR

***Ptilophyllum aninaensis* CZIER 1995 -**

a problem of priority

by

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Zusammenfassung

Der Verfasser behandelt ein Prioritätsproblem und zwar handelt es sich einerseits um *Ptilophyllum maculatum* GIVULESCU 1992, andererseits um *Ptilophyllum aninaensis* CZIER 1995, beide vom selbem Fundort - Anina / ante Steierdorf / -Banat, Rumänien. Anhand eines Vergleichs der beiden Originalbeschreibungen und von Photos demonstriert der Verfasser, daß beide Arten dieselbe kutikulare Struktur besitzen, daß es also zwischen ihnen keinen Unterschied gibt. So ist der gültige Name des betreffenden Fossils *Ptilophyllum maculatum* GIVULESCU 1992.

Abstract

A problem of nomenclature priority between *Ptilophyllum maculatum* GIVULESCU 1992 and *Ptilophyllum aninaensis* CZIER 1995, both from Anina (Romania) is presented. The Autor shows that there are not differences between the named „species“ in the anatomical structure of the two cuticles, so the material shall be called *Ptilophyllum maculatum* GIVULESCU.

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1. Introduction

The study of the Lower Liassic flora in Romania and we mainly refer to the Anina locality, has recently become more active due to the research work of three scientists: R. GIVULESCU, Z. CZIER and M. POPA. All of them dealt with the flora especially because it includes very well preserved cuticles as most of the material is made up of compressions. Over the years, elements of this flora were included in collections. R. GIVULESCU studied the collections of the Cluj-Napoca University, Z. CZIER those of the Hungarian Natural History Museum in Budapest and M. POPA those of Bucharest University.

2. Materials

GIVULESCU studying the material of the Departement of Geology, University of Cluj-Napoca, of the Departement of Botanic and of the private collection belonging to professor C. Moldovan / Baia Mare/, described a new type of *Ptilophyllum* namely *P. maculatum*. Studying the Budapest collection, CZIER described, on the other hand, a new type of *Ptilophyllum* called *P. aninaensis*. In his study, CZIER also referred to *P. maculatum* comparing his material with this one; however, he found differences which we consider insignificant, on the basis of the description itself but also on the basis of comparative photographs of the epiderm itself the two species.

The table shows the two descriptions comparatively:

Ptilophyllum maculatum

Formed of regular parallel rows of round isodiametrical cells, whose walls are more or less cutinised. These cells are star like shape i.e. they exhibit deeply lobate edges. The center is covered by papilla.

Ptilophyllum aninaensis

Upper epiderm

Rows of the epidermal cells parallel to the vein direction. Epidermal cells isodiametrical, squarish or short rectangular. They possess very sinuous walls with folds measuring 5-10 μ (wave length) and 8-10 μ amplitude.

Lower epiderm

Regular parallel rows with and without stomatas. In general the former are narrower. The rows which lack stomatas consist of small, round cells, characterized by strongly cutinised papillae. The rows with stomatas consist of oval or round cells with less folded edges, but they also exhibit the characteristic papilla. The stomatas are placed in 2-3 rows. The stomata in general are directed transversally.

Composed of 160-320 μ wide stomatal bands, alternating with 80-120 μ non stomatal band. Stomatal bands consisting of ordinary epidermal cells (which in this case may also be irregularly shaped) and 2-4 rows of stomatas. Smaller folds and each of them possessing a strongly cutinised papilla with circular base about 15 μ in diameter. The stomata usually transversally orientated.

Stomatal apparatus.

Stomatal apparatus has a rounded seldom square shape. The guard cells have a half-moon shape. The extremities are sharp. On these guard cells are placed two papillae of the subsidiary cells under the form of the two very specific and cutinised oval spots. The subsidiary cells are thin and have a crescent like shape. The pore is long and narrow. It can be totally or partially covered by the above mentioned papillae.

Stomata circular or slightly, oval in shape ... Guard cells with crescent shaped thickenings ending in sharp points. Stomatal pit linear, long. Subsidiary cells rather small 10-30 μ wide, rectangular or slightly rounded in shape, sometimes possessing oval or elongate papillae.

3. Discussion

We should note the fact that, in spite of inherent differences on description and expression, both forms have upper cuticles made up of star like cells, even if in CZIER's description they only have very sinuous walls. This assumption is contradicted by the photograph. In the stomatal rows they have cells with strongly cutinised papillae, stomata with a rounded-oval, seldom squarish shape and the guard cells are half-moon shaped with sharp extremities, sharp points and long and narrow, linear pores.

Therefore, it is quite obvious that the differences are due more to the manner of description, than to the nature of the material itself, the elements of which are practically identical. It is also worth mentioning that in order to compare and to find evidence supporting the independence of the new

species, GIVULESCU studied 14 species of *Ptilophyllum* of the paleobotanical literature. CZIER only studied three, to which he added *P. maculatum*. The difference as compared to the latter should consist, in his opinion, in the upper cuticle which is formed by star like papillate cells, the lower one having the stomatal bands narrower than *P. aninaensis*, the stomata are slightly different in shape and posses two papillae of subsidiary cells in form of very cutinised spots. All these so called differences are insignificant because the description are practically identical and because the pictures shown by CZIER do not support his description being obviously similar to *P. maculatum*. Moreover we had had the opportunity to study the material of *P. aninaensis* and we founded in it the very specific cutinised spots which characterise the „*maculatum*“ species.

4. Conclusion

We conclude that *Ptilophyllum aninaensis* CZIER 1995 should be considered a species synonymous to the *P. maculatum* one GIVULESCU 1992, due to the fact there are, in fact, no differences between them that might justify the creation of a new species and owing to the fact that they both com from the same fossiliferous point.

5. References

- GIVULESCU, R., 1992. *Ptilophyllum maculatum* n. sp. a new *Ptilophyllum* from the Early Lias of Anina/Romania. Cour. Forsch. Inst. Senckenberg; **147**, 241-245, Frankfurt am Main.
- GIVULESCU, R., 1992. A new contribution to the knowledge of the fossil flora from Anina. Studia Bot. Hung., **23**, 9-15, Budapest.
- CZIER, Z., 1995. Two new fossil plants species from the lower Liassic of Anina, Romania: *Ptilophyllum aninaensis* n. sp. and *Williamsonia aninaensis* n.sp., N. Jb. Geol. Paleont., Ma. **12**, 747-755, Stuttgart.

6. Explanation of plates

Plate 1.

Ptilophyllum aninaensis CZIER

Fig. 1 upper cuticle with strongly folded walls of epidermal cells

Fig. 2 lower cuticle with papillate cells

Fig. 3 lower cuticle with stomata and papillate cells

Fig. 4 stomata and semicrescent thickenings

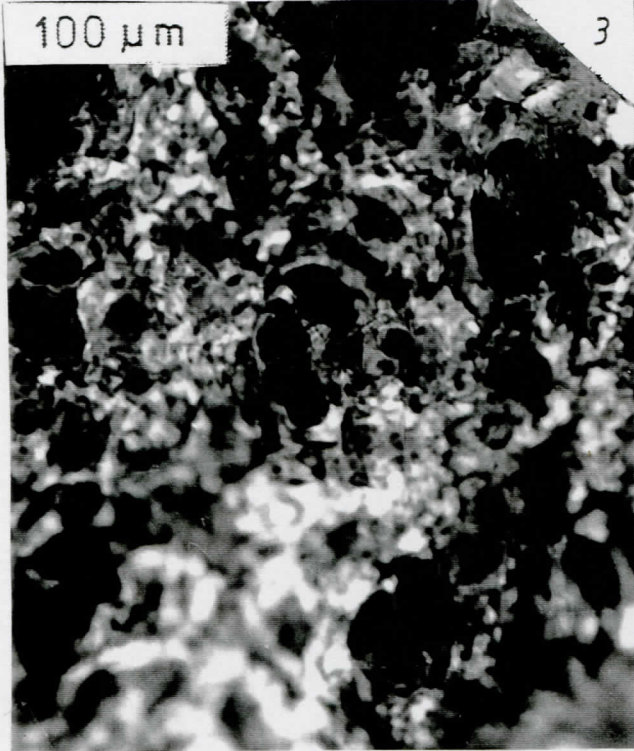


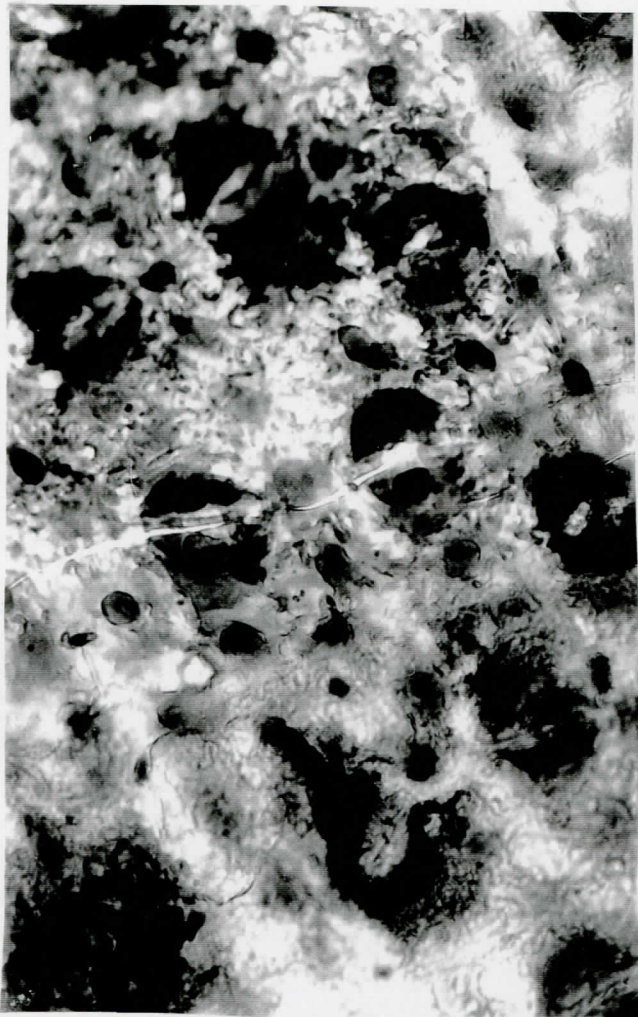
Plate 2.***Ptilophyllum maculatum* GIVULESCU**

Fig. 1. lower cuticle with stomatal bands and papillate cells. 350 x

Fig. 2. the same - general view. 300 x

Fig. 3. upper cuticle with bands of papillate and strongly folded walls of epidermal cells. 350 x

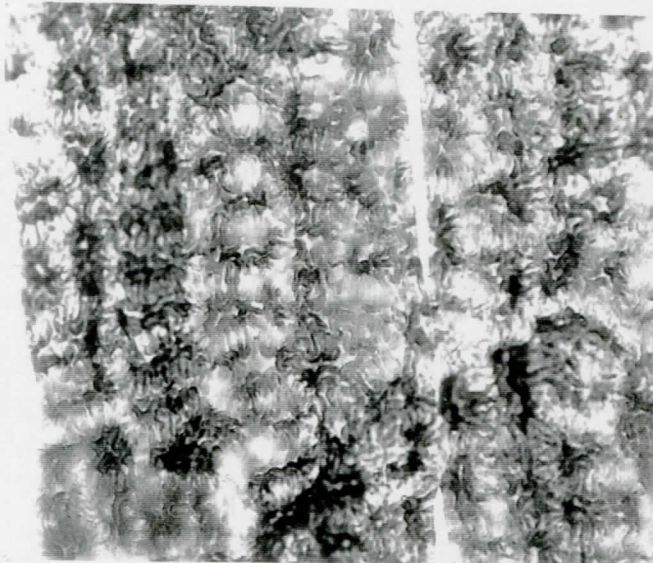
Fig. 4. lower cuticle with stomata and bands of papillate cells. 300 x.



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