

Trachycystis Szaferi a New Species of Moss from the Miocene of Poland

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The stream Potok Cichy flowing from the south-east round the mountain Domański Wierch uncovered a layer of loams in the vicinity of the village Miętustwo near Czarny Dunajec in the district of Nowy Targ. On the basis of the flowering plants which have been found in them, Professor S z a f e r reckons the loams among those of the Miocene. In these loams one fragment of a moss stem has been found among other remains of plants; Professor S z a f e r gave it to me for investigation.

The washed-out specimen represents a 4,5 mm long fragment of a red-brown stem. It is 0,3 mm broad; there are 9 leaves on it, more or less damaged; of the majority only their bases have been left. There is only one leaf which has been preserved in its entirety, though even this is slightly damaged, its apex being split and bent. This leaf, ovate-lanceolate in shape, rounded at the apex and

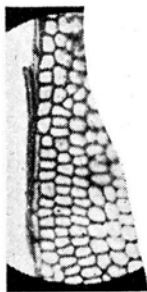


Fig. 1. Edge of the lower part of the leaf; the narrow margin is well visible. Enlarged 100 times.

provided with an acute point, is ± 2 mm long; the base is 0,8 mm broad but had to be measured on another leaf, as in the one described above this proved impossible because the base was folded. The margin of the lower and the middle part of the leaf is clear and composed of 2—3 rows of elongate, prosenchymatous, thick-walled cells arranged in one layer (Fig. 1). The margin disappears in the upper part of the leaf and its edge is built of more or less rectangular cells (Fig. 2). The teeth on the leaf-edge are arranged in one row, sharpened at the apex of the blade, blunt and far apart in the lower section; they disappear about the middle of the leaf. The cells of the blade are 18—20 μ in diameter, roundish-hexagonal or more or less rectangular, especially in the upper part, rather vesiculose, with walls slightly colenchymatous. A strong nerve reaches almost up to the apex of the leaf, and is bluntly denticulate at the back.

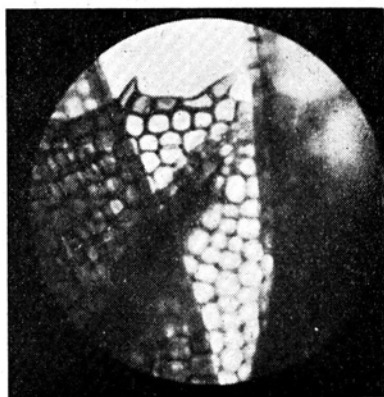


Fig. 2. Apical part of the leaf. Enlarged 150 times.

It was very difficult to establish that the cells of the leaf-blade were vesiculose, since there was only one specimen, and it was impossible to make a transverse cross-section. The vesiculation may be observed under the microscope when the blade lies aslant and the microscrew is adjusted to the upper and the lower surface of cells; the stronger convexity of cell membranes on both sides is then visible.

The leaf of the moss described is similar to the leaves of the genus *Rhizogonium*, in our specimen, however, we do not see the double-sided arrangement of leaves which is met with in this genus; besides, by its appearance the fossil leaf reminds us of the leaves

of *Mnium*, but considering its vesiculose cells it must be reckoned among the genus *Trachycystis* Lindb. 1868. Since it is unknown in the hitherto described species of this genus that the margin should distinctly disappear in the apical part of the blade, I consider this relic of moss to be a new species. Wishing to express my deep gratitude to Professor Szafer I venture as his pupil to give the species the name *Trachycystis Szaferi*.

Trachycystis Szaferi Szafra n. sp. Differt a *Tr. flagellari* Lindb. 1872 foliis simpliciter dentatis, a *Tr. antiquorum* (Card. et Dix.) Kab. limbo minore incrassato (1—3 cellulae) sub apice folii finiente, costa ante apicem abrupta, superne dorso spinulosa.

Of the genus *Trachycystis* Lindb. 1868 (in Brotherus this is a section of the genus *Mnium* 1, page 412) we know two species which are living now, namely *Tr. microphylla* Lindb. 1868 growing in China and in Korea, and *Tr. flagellaris* Lindb. 1872 having the following range: Alaska, Japan, Kuril Islands, Sakhalin, and the area of Amur. Dixon (3) described also *Tr. antiquorum* (Cardot et Dixon) Kabiersch nov. comb. (2, 1937) from the Pliocene of Reuver, and now a new species is added from the Miocene of Domański Wierch. They may be distinguished in the following way:

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| 1. Leaves without margin | <i>Tr. microphylla</i> Lindb |
| 1+. Leaves with a distinct margin | 2. |
| 2. Teeth of leaf-edge in two rows | <i>Tr. flagellaris</i> Lindb |
| 2+. Teeth of leaf-edge in one row | 3. |
| 3. Wide margin (4—6 rows of cells) reaching up to apex, teeth at apex of leaf blunt, nerve at back smooth... <i>Tr. antiquorum</i> (Card. et Dix.) Kab. | |
| 3+. Narrow margin (1—3 rows of cells) ends without reaching apex; teeth at apex of leaf acute; nerve at back denticulate... <i>Tr. Szaferi</i> Szaf r. | |

The exceedingly small number of living species, as well as the fossil data quoted above make us proclaim the genus *Trachycystis* as a relictive genus which has been hitherto preserved in East Asia. The new fossil species, having developed a margin, represents a sort of intermediate form between the marginless *Tr. microphylla* and *Tr. antiquorum* which possesses a margin. Both the species cited have one row of teeth on the edge of the leaf-blade. Since *Tr. flagellaris* shows two rows of teeth on the edge of the leaf it might be a form more advanced in its development.

(From the Botanical Institute of the Jagiellonian University in Cracow).

LITERATURE CITED.

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2. Dixon H. N. *Musci* in Reid C and Reid E. The pliocene floras of the Dutch-Prussian Border. Hague 1915.
3. Kabiersch W. Studien über die ostasiatischen Arten einiger Laubmoosfamilien (Mniaceae, Bartramiaceae) Dresden 1937, Hedwigia B. 76, pag. 1—94.