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Polyblastia gelatinosa and *P. agraria* — new species to lichen flora of Poland

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The occurrence of *Polyblastia gelatinosa* (Ach.) Th. Fr. and *P. agraria* Th. Fr. along the lower and middle course of the Vistula River is presented.

Key words: *Lichenes, Verrucariaceae, Polyblastia.*

INTRODUCTION

Polyblastia gelatinosa and *P. agraria* are among the few terricolous species of the predominantly saxicolous genus *Polyblastia*. The lack of previous reports on the occurrence of those species in Poland is associated with the fact, that their thalli are very small and therefore can be easily left unnoticed. Moreover their localities are scarce and generally limited to very small surfaces of dying moss tufts and other plant remains. The absence of species in question from our previous lists may be due to the difficulty in identifying those poorly known and rarely found taxa. That is why I hope that the present paper will encourage researchers to conduct wider studies leading to the detection of more localities of the above species in Poland.

MATERIAL AND METHODS

The present paper is solely based on studies carried out in Kujawy and adjacent areas adjoining the Vistula valley. The material studied was collected in 1994–1997 and deposited in the Herbarium of the Department of Plant

Taxonomy and Geography of Nicolas Copernicus University in Toruń (TRN). The recorded localities were presented on distribution maps with grids of 10×10 km squares (ATPOL, see also A. Zając 1978).

DESCRIPTION

The genus *Polyblastia* Massal. differs from the other genera of the family *Verrucariaceae* in having muriform or submuriform ascospores. In both species they are ellipsoid or elongate-ellipsoid, usually with more than ten transverse and several (up to 5) longitudinal septa (Fig. 1). After maturation, the ascospore cells germinate separately, sometimes while still inside the perithecium. There are clear differences in the number of spores in the asci. *Polyblastia agraria* has two spores per ascus, while *P. gelatinosa* has more than two (Tab. 1).

Table 1

Some morphological features of *Polyblastia gelatinosa* and *P. agraria* (after Purvis et al. 1994)

	P. gelatinosa	*P. agraria*
Thallus		
nature	± gelatinous when wet granular or ± smooth, effuse	film – like, often inconspi-cuous, intermixed with minute granules, ± scurfy, forming small patches, or ± granular and well delimited or effuse
colour	ash grey, dark green- black, or black-brown	green-grey, tinged brown at exposed sites
Perithecium		
diameter (mm)	0.2–0.4	0.1–0.2
Pigment in exciple	blackish, sometimes pale brownish inside	black, slightly brownish below
Ascospores		
colour	remaining colourless, rarely pale yellow-brown with age	colourless, becoming pale yellow-brown when old
length × width (μm)	30–60 (–75) × 15–25 (30)	40–70 × 18–25
Spore number per ascus	more than 2 (normally 8)	2

The species of *Polyblastia gelatinosa* described from the British Isles (Swinscow 1971; Purvis et al. 1994), usually had 8 spores per ascus, but in the material collected from Poland the number of spores per ascus was often 4. Eight spores per ascus were rarely observed, which raises doubts as to whether we have to do with the same taxon as that in Britain.

In studied specimens of *Polyblastia gelatinosa*, perithecia were quarter to half immersed; ostioles protruding; periphyses abundant; involucrellum absent (Fig. 2 and 3). In the specimens of *Polyblastia agraria*, perithecia were similar (Fig. 4) to those in *P. gelatinosa*, half immersed, but on average smaller (Tab. 1); involucrellum was also absent.

The two species can be found in similar habitats, sometimes in close vicinity to each other. They are found most commonly on dead moss, rarely on bare calcareous soil. They grow among initial communities, in places exposed to sunlight, on river valley sides and abandoned excavations. The number of localities of *Polyblastia agraria* is much higher than that of *P. gelatinosa* (Fig. 5) found in Poland.

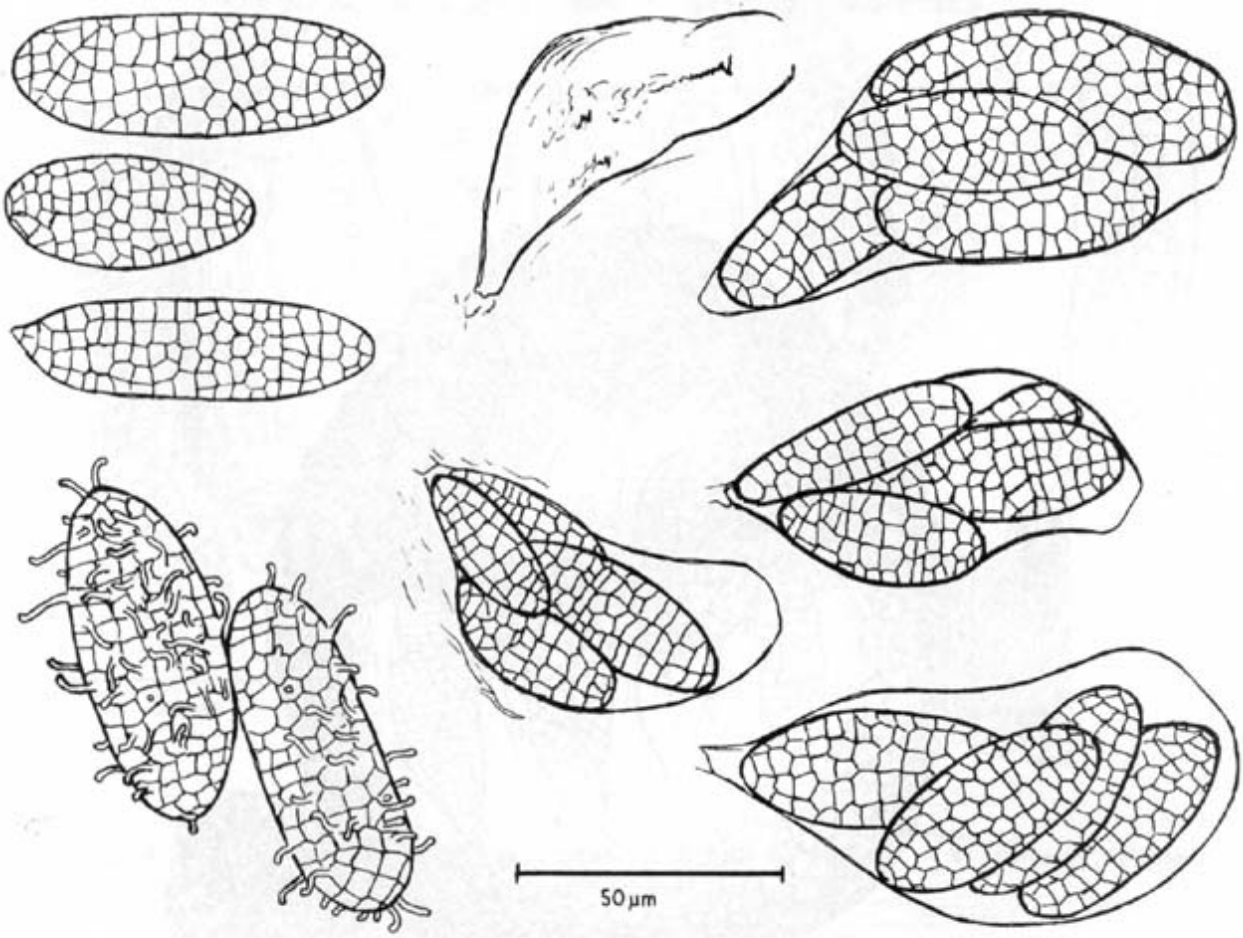


Fig. 1. Asci and ascospores of *Polyblastia gelatinosa* (original; locality: Rzadka Wola)

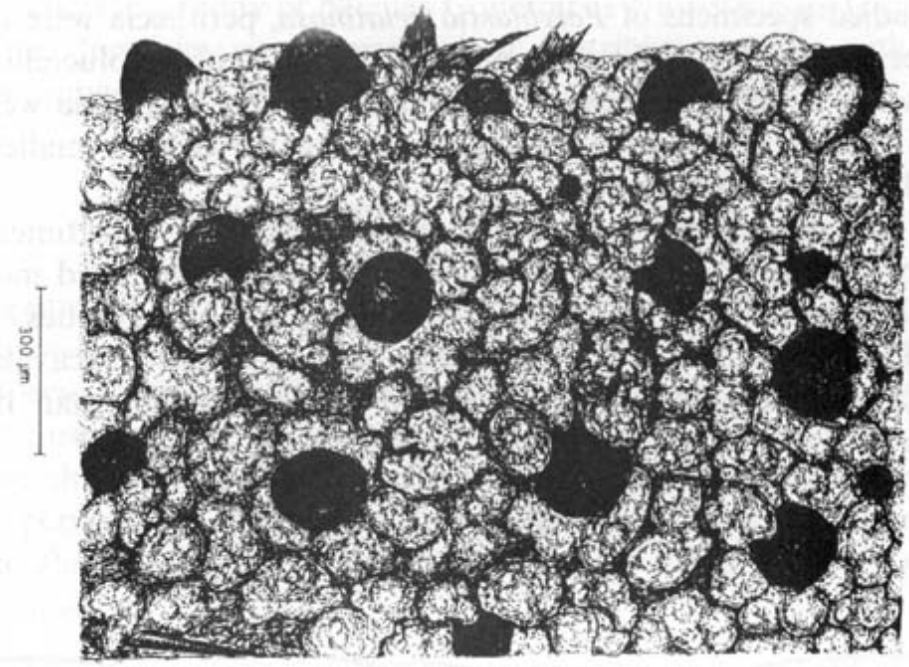


Fig. 2. Thallus of *Polyblastia gelatinosa* (original; locality: Rzadka Wola)

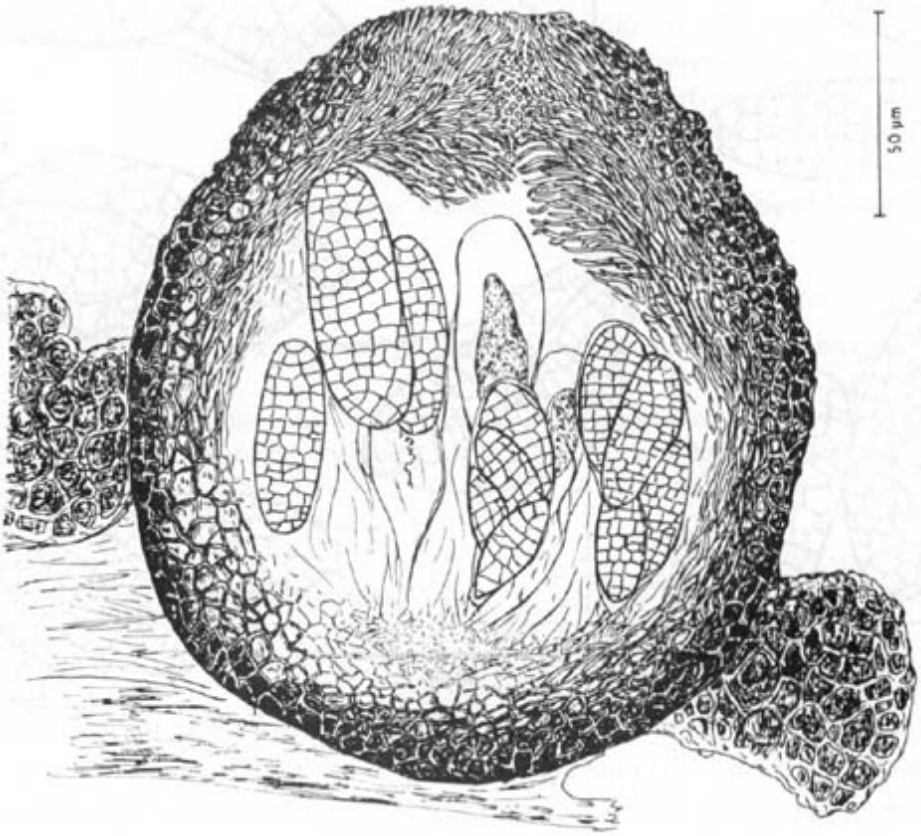


Fig. 3. Vertical section through perithecium of *Polyblastia gelatinosa* (original; locality: Rzadka Wola)

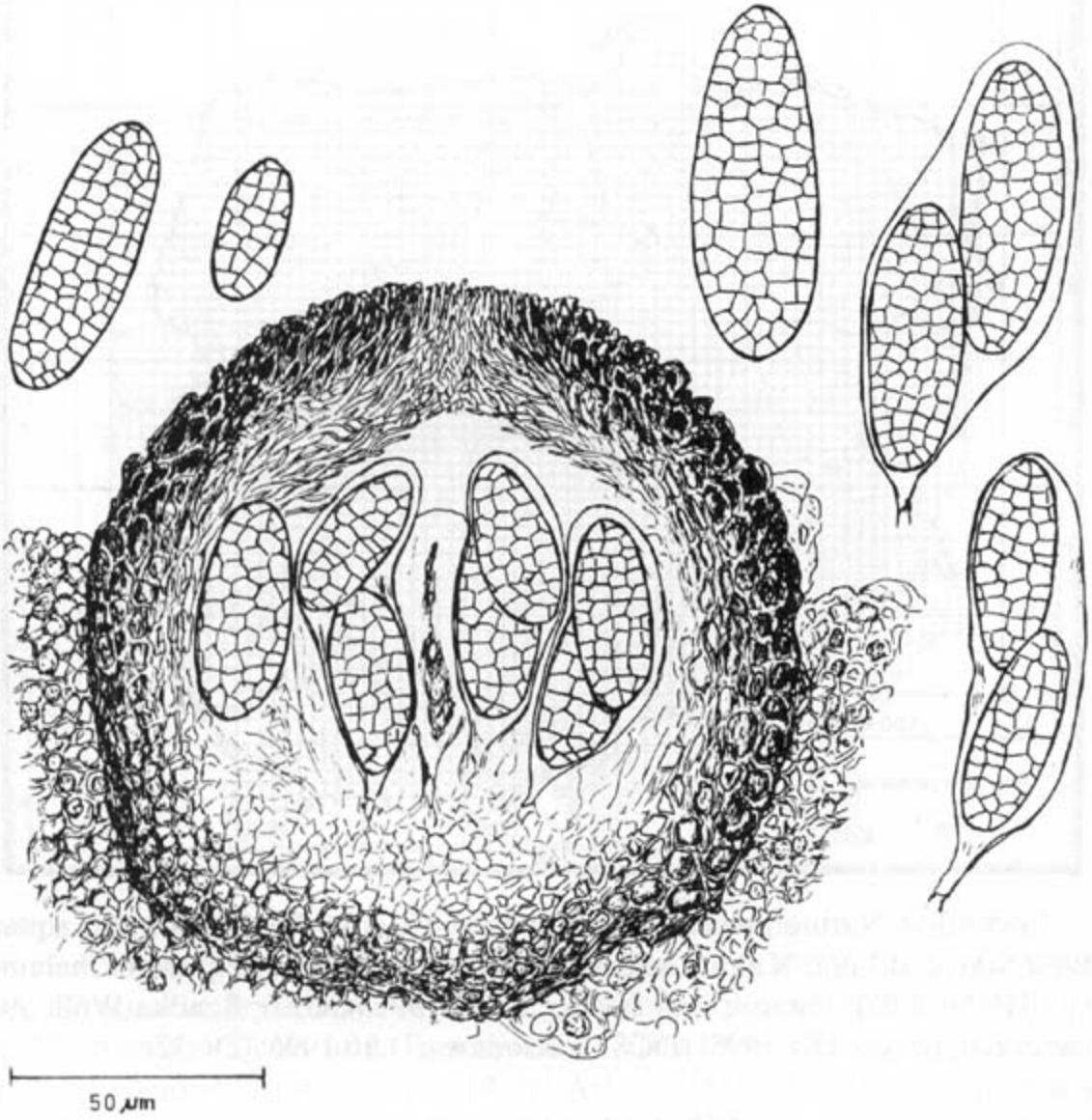
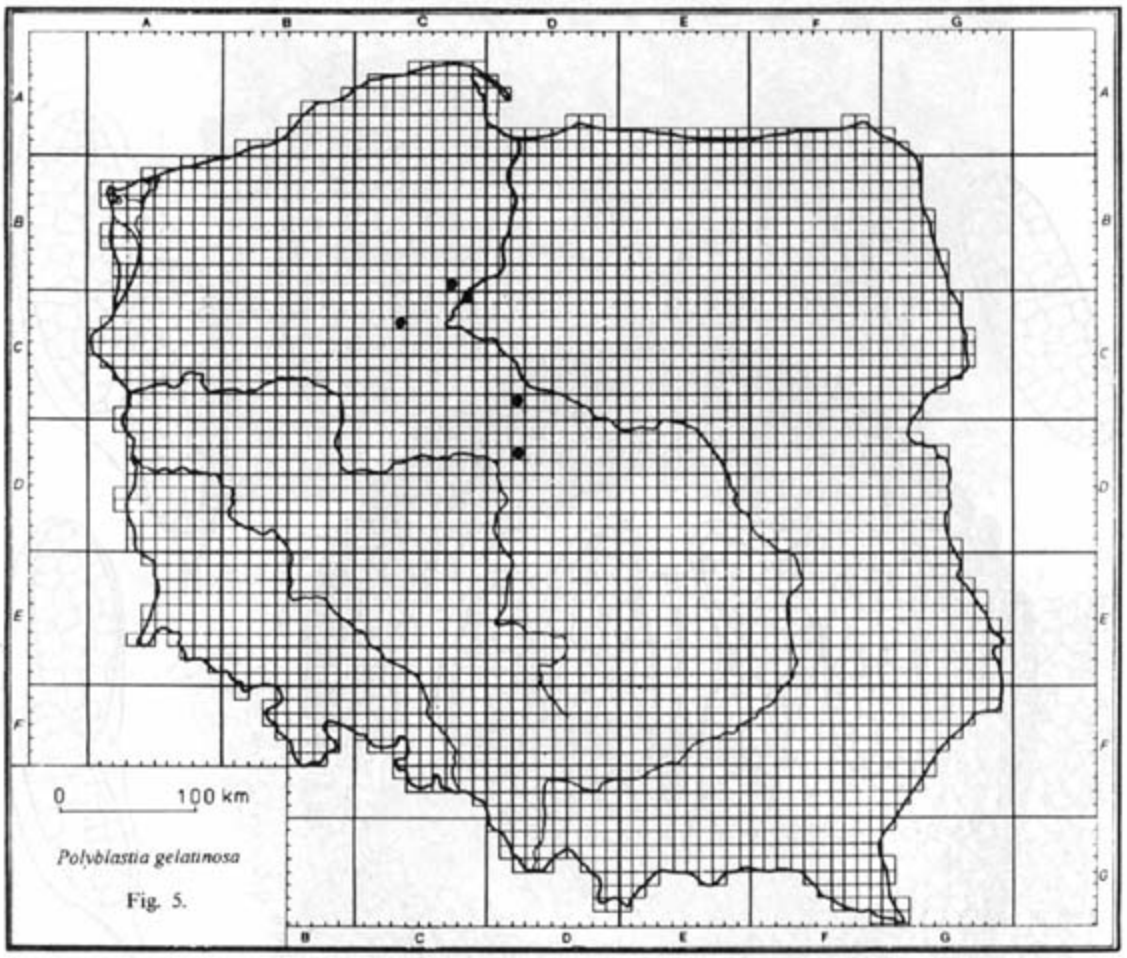


Fig. 4. Vertical section through peritecium: asci and ascospores of *Polyblastia agraria* (original; locality: Barcin)

The distribution range of *Polyblastia gelatinosa* is very wide. It has been found wither to in North America, Sweden, Norway (S a n t e s s o n 1993) and Spitsbergen (N o w a k 1965). *Polyblastia agraria* has been reported from Great Britain and Sweden (P u r v i s et al. 1994).

DISTRIBUTION IN POLAND

Polyblastia gelatinosa (Fig. 5)



Localities: Nature reserve Gruczno near Świecie, 30.09.1997 (grid square CB98) Starogród and Kałdus near Chełmno, 19.07.1976; Kiełp near Chełmno, 10.05.1997 (CC08); Paterek near Nakło, 11.10. 1995 (CC22); Rzadka Wola near Brześć Kujawski, 1.06.1995 (DC82); Kłodawa, 1.10.1996 (DC22).

Polyblastia agraria (Fig. 6)

Localities: Lubiana near Kościerzyna, 25.08.1997 (grid square CB15); Rybaki, SW from Kościerzyna, between lakes Sudomie and Osuszyno, 25.08.1997 (CB16); between Dzierzgoń and Minięta, 23.09.1997; Stare Miasto near Dzierzgoń, 23.09. 1997 (DB35); between Raczek and Kazanice near Lubawa, with *Leptogium byssinum* (Hoffm.) Zwackh ex Nyl., 24.09.1997 (DB77); Sampława in the Sandela valley, with *Verrucaria bryoctona* (Th. Fr.) A. Orange, 24.09.1997 (DB87); between Nawra and Bratian near Nw. Miasto Lubawskie, 24.09.1997 (DB86); Głęboczek near Brodnica in the Drwęca valley,

22. 09. 1997 (DC06); Grupa Górna near Grudziądz, 16.09.1996 (DB80); Świecie – Marianki in the Wda valley, 26.09.1996 (CB99); Topólno and Cieleszyn in the Vistula valley, 26.09.1996; Starogród near Chełmno, with

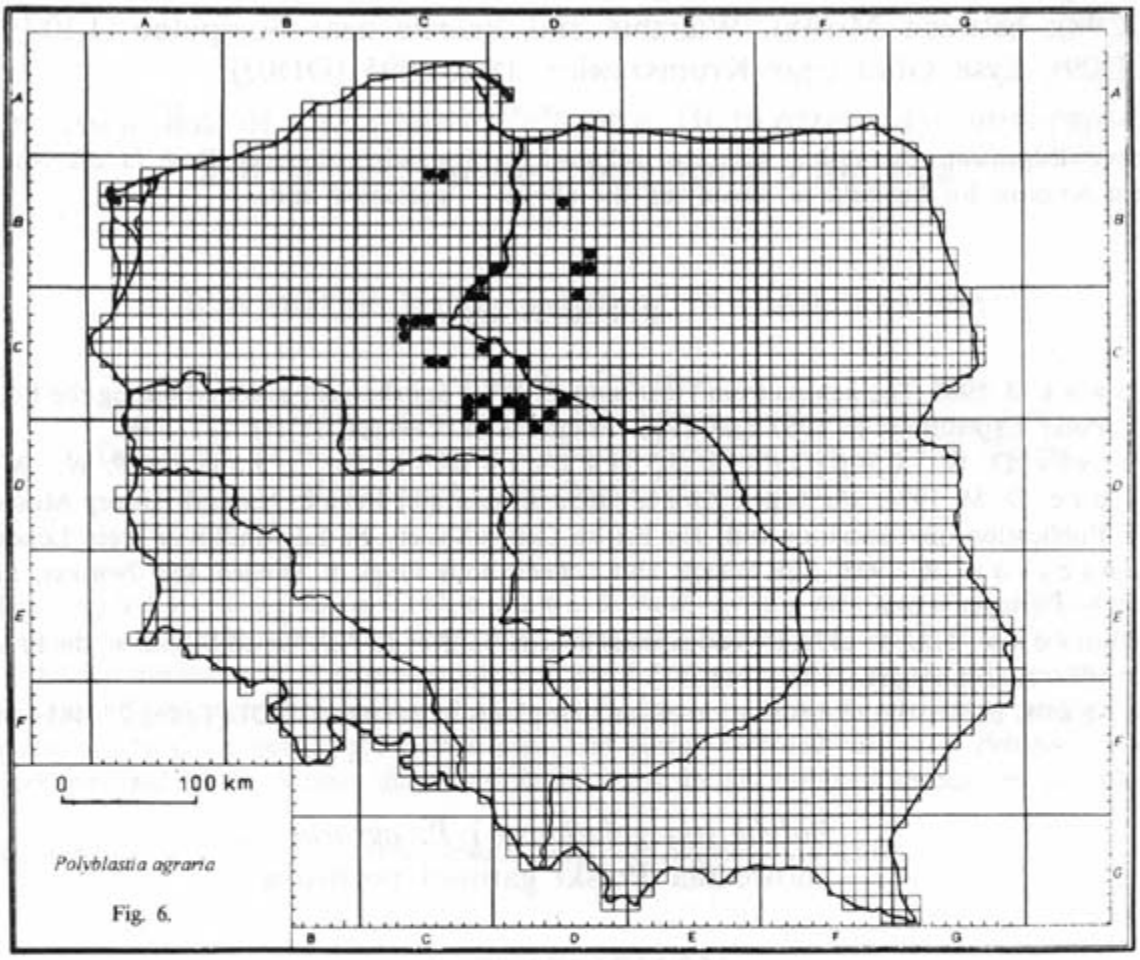


Fig. 6.

Endocarpon pusillum Hedw., 19.07.1996 (CC08); Chełmno, in *Festuco-Koelerietum glaucae*. Ass., with *Collema coccophorum* Tuck., 14.06.1997 (CC09); Nakło, with *Verrucaria bryoctona*, 11.10.1995; Studzienki near Nakło, 11.10.1995 (CC23); between Ślesin and Trzeciewnica, 20.09.1996 (CC24); Kruszyn near Bydgoszcz, with *Collema limosum* (Ach.) Ach., 20.09.1996 (CC25); Zalesie near Kcynia, with *Collema limosum*, 11.10.1995 (CC33); Jarki near Toruń, 16.10.1996 (CC49); Plebonka by Lake Ostrowieckie, 1.10. 1995; Barcin, 2.10.1995 (CC55); between Mielno and Wojdal, with *Leptogium byssinum* and *Verrucaria bryoctona*, 3.18.1995 (CC56); Żyrosławice near Murzynno, with *Endocarpon pusillum* and *Collema tenax* (Swartz) Ach. em Degel., 22.09.1995; between Podgaj and Przybranowo in the Tążyna valley, 18.07.1996 (DC50); Nieszawa, 24.07.1995; Siarzewo near Ciechocinek, 27.07.1995 (DC52); Nature reserve Kulin near Włocławek, 07.1995 (DC73); between Kaspral and Mietlica near Piotrków Kuj., 20.06.1996 (CC88); Świerz near Piotrków Kuj. by Lake Świeskie, 22.11.1995 (CC89); between Sadłużek and Sadłóg, 22.11.1995 (DC81);

Rzadka Wola near Brześć Kuj., 1.06.1995 (DC82); Skoki Duże near Włocławek, 11.11.1995 (DC85); Baruchowo near Kowal, 16.06.1994 (DC94); Niemojewo and Szczytno near Chodecz, 19.06.1996 (DC92); Rybiny Łeśne by Lake Głuszyńskie, 12.09.1996 (DC90); Mielnica Duża near Skulsk, 10.06.1995 (CC98); between Mostki, Wierzbie and Brzezie near Sompolno, 1.10.1996 (CD09); Łysa Góra near Kromszewice, 18.10.1995 (DD03).

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Polyblastia gelatinosa i *P. agraria* – nowe dla Polski gatunki porostów

S t r e s z c z e n i e

Polyblasta gelatinosa (Ach.) Th. Fr. i *P. agraria* Th. Fr. należą do nielicznych gatunków naziemnych rodzaju *Polyblastia*. Porosty te znaleziono podczas badań przeprowadzonych na Kujawach i na terenach sąsiednich. Przypuszczalnie występują one również w wielu innych rejonach kraju, lecz dotychczas były przeoczone. Plechy omawianych gatunków rozwijają się na obumarłych szczątkach roślinnych oraz na nagiej, wapnistej ziemi wewnątrz inicjalnych zbiorowisk kolonizujących skarpy przydrożne, zbocza dolin rzecznych i wyrobiska.

Oba gatunki mają askospory podobne, murkowate, lecz *Polyblastia agraria* ma ich po dwa w workach a *P. gelatinosa* więcej (do 8). Peritecja u obu gatunków są również podobne, często do połowy zagłębione w plesze, u *Polyblastia agraria* są one jednak przeciętnie mniejsze niż u *P. gelatinosa*.

W okresie przeprowadzonych badań stwierdzono znacznie więcej stanowisk *Polyblastia agraria* niż *P. gelatinosa*.