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Dedicated to Professor Alina Skirgiełło on the occasion of her ninety-fifth birthday

Note on the distribution of some lichenized and lichenicolous fungi of the Tatra National Park

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New data about the occurrence of 25 species of rare lichens and 3 lichenicolous fungi in the Tatra National Park (Western Carpathians) are provided. Of these species, *Fellhaneropsis vezdae* is recorded for the first time from the whole Tatra Mts. and *Vezdaea stipitata* is new to the Polish Tatra Mts. The distribution of the species in the Tatra National Park is indicated.

Key words: lichens, lichenicolous fungi, biogeography, Tatra Mts., Carpathians, Poland

INTRODUCTION

The Tatra Mts. are the greatest natural peculiarity of the West Carpathians. These mountains are one of centre of biodiversity and occurrence of rare arctic-alpine species in Europe. At present, 1250 species of lichens and 87 species of allied fungi (lichenicolous fungi and saprotrophs) are known from the Tatra Mts. (Western Carpathians) (Lisická 2005). However, the knowledge of the lichen biota of the once is still not complete and require more accurate research. Especially, distribution of majority of species is in bad need of future attention.

The present paper reports new information on the occurrence of 25 species of rare lichens and 3 lichenicolous fungi in the Tatra National Park. The currently known sites of the species in the area of the Tatra National Park are indicated in the maps (see Figs 1–9). Of presented species, *Fellhaneropsis vezdae* is recorded for the first time from the whole Tatra Mts. and *Vezdaea stipitata* is new to the Polish Tatra Mts..

The results are based on material collected during research of the lichen biota in the Tatra National Park in the period of 2002–2005. Herbarium specimens of the KRAM-L collection (Kraków) were also taken into consideration. The specimens are deposited in the lichen herbarium of the W. Szafer Institute of Botany, Polish Academy of Sciences (KRAM-L) in Kraków. The lichenicolous fungi are marked with an asterisk „*”.

LIST OF SPECIES

Acrocordia gemmata (Ach.) A. Massal.

In the Polish Tatra Mts. the species has been recorded from Dolina Białego valley, alt. 970 m, on bark of *Acer pseudoplatanus* by Tobolewski (1957) and alt. 960 m, on bark of *Fagus sylvatica*, alt. 980 m, on bark of *Acer pseudoplatanus* and alt. 1000 m, on bark of old *Picea abies* by Bielczyk (1999). The location of currently known sites of the species is indicated on the map (Fig. 1).

Specimen examined. West Tatra Mts.: Polana Stare Kościeliska glade in lower part of Dolina Kościeliska valley, 49°15'03" N, 19°54'08" E, alt. 960 m, on bark of older *Tilia* sp., 11 July 2004, *leg. A. Flakus 2269*.

Ainoa mooreana (Carroll) Lumbsch et J. Schmitt

In the Polish Tatra Mts. the species has been recorded from Mt. Suche Czuby, alt. 1850 m, on N-facing granite wall near the ground, Czerwone Stawki lakes, alt. 1840 m, on granite near the ground, Mt. Skrajna Turnia, alt. 1960 m, on N-facing moist granite by Alstrup and Olech (1990) and on the trail between Morskie Oko lake and Czarny Staw pod Rysami lake, on granite rock by Bielczyk (1997). The location of currently known sites of the species is indicated on the map (Fig. 1).

Specimen examined. High Tatra Mts.: Wolarnia nad Kępą, NW slope of Mt. Opalone, by the trail from Morskie Oko lake to Dolina Pięciu Stawów Polskich valley, 49°12'58" N, 20°03'55" E, alt. 1695 m, NW aspect, slope 80°, on granite rock in moist place, 18 August 2004, *leg. A. Flakus 3219*.

Caloplaca herbidella (Hue) H. Magn.

In the Polish Tatra Mts. the species has been recorded from lower part of Dolina Białego valley, alt. 950 m, on bark of *Picea abies*, alt. 980 m, on bark of *Acer pseudoplatanus* by Tobolewski (1960); Dolina Kościeliska valley by Kościeliski Potok stream near Brama Kantaka gate, on bark of *Picea abies* by Czarnota (2002) and

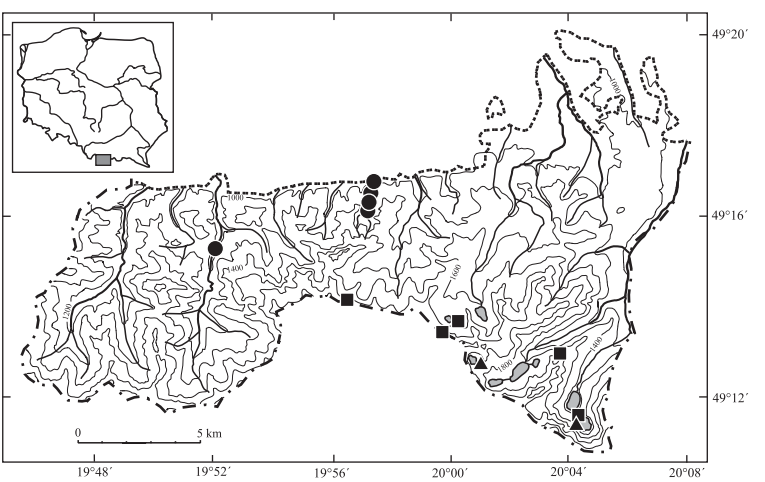

Fig. 1. Distribution of ● – *Acrocordia gemmata* (Ach.) A. Massal., ■ – *Ainoa mooreana* (Carroll) Lumbsch et J. Schmitt and ▲ – *Pseudosagedia guentheri* (Flot.) Hafellner et Kalb in the Tatra National Park.

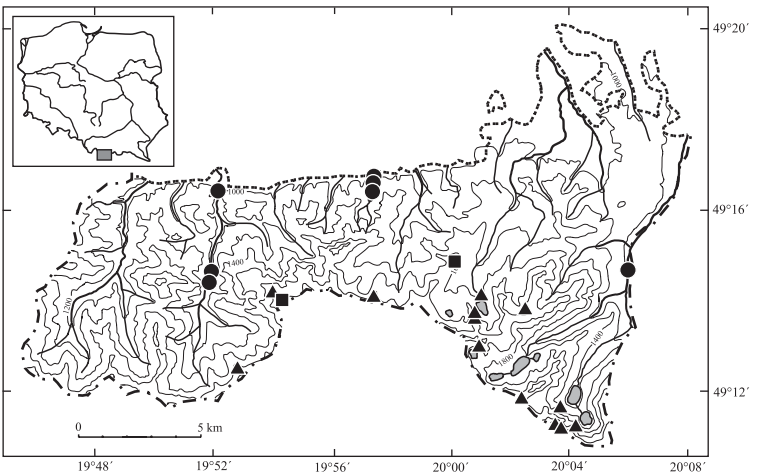

Fig. 2. Distribution of ● – *Caloplaca herbidella* (Hue) H. Magn., ■ – *Toninia athallina* (Hepp) Timdal and ▲ – *Catolechia wahlenbergii* (Ach.) Körb. in the Tatra National Park.

Dolina Białki valley, alt. 1005 m, on bark of dead *Alnus incana* by Flakus (2004). The location of currently known sites of the species is indicated on the map (Fig. 2).

Specimens examined. West Tatra Mts.: Dolina Białego valley, alt. 940 m, on bark of *Acer pseudoplatanus*, 30 September 2004, *leg. A. Flakus 3572*; Dolina Kościeliska valley near the trail to Wąwóz Kraków gully, alt. 1090 m, on bark of *Picea abies*, 22 July 2005, *leg. A. Flakus 5004*, alt. 1100 m, on bark of *Picea abies*, 22 July 2005, *leg. A. Flakus 4999*; Dolina Kościeliska valley, Stare Kościeliska glade, 49°15'31" N, 19°52'08" E, alt. 965 m, on bark of *Fraxinus excelsior*, 7 July 2004, *leg. L. Śliwa 2651*.

Catolechia wahlenbergii (Ach.) Körb.

Distribution of the species in the Polish Tatra Mts. has been characterized by Flakus (2004). The location of currently known sites of the species is indicated on the map (Fig. 2).

Specimen examined. West Tatra Mts.: Mt. Smreczyński Wierch, 49°12'21" N, 19°52'53" E, alt. 1950 m, N slope, on humus in siliceous rock crack, 28 July 2005, *leg. A. Flakus 5044*.

Cladonia trassii Ahti

Distribution in the Polish Tatra Mts. has been characterized by Flakus (2004). The location of currently known sites of the species is indicated on the map (Fig. 3).

Specimen examined. High Tatra Mts.: Dolina Białki valley, alt. 1000 m, on sandy alluvial soil by stream, 16 August 2002, *leg. A. Flakus 60*.

Clauzadea monticola (Schaer.) Hafellner et Bellem.

The species is known from the Polish Tatra Mts. (Alstrup, Olech 1992b), but the authors do not cite collecting sites (specimens not seen). The location of currently known sites of the species is indicated on the map (Fig. 3).

Specimens examined. West Tatra Mts.: Dolina Mułowa valley, lower part of Mt. Krzesanica, alt. 1900 m, on limestone rock, 9 July 2004, *leg. A. Flakus 2237*; Dolina Chochołowska valley between Polana Huciska glade and Polana Jamy glade,

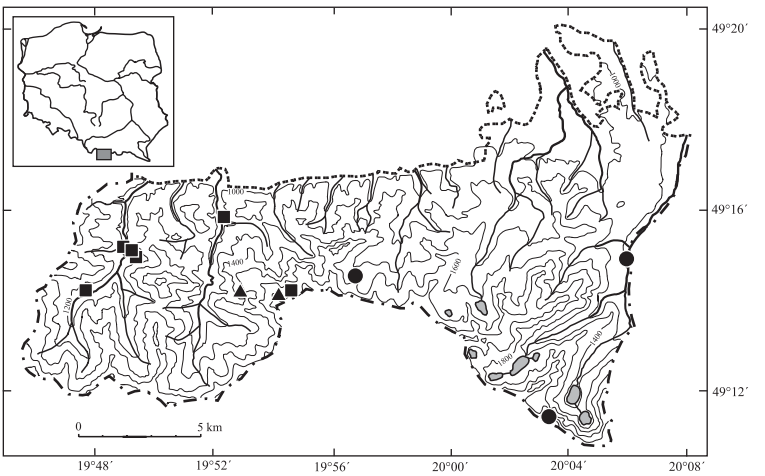

Fig. 3. Distribution of ● – *Cladonia trassii* Ahti, ■ – *Clauzadea monticola* (Schaer.) Hafellner et Bellem. and ▲ – *Dactylospora saxatilis* (Schaer.) Hafellner in the Tatra National Park.

49°15'24" N, 19°49'20" E, alt. 1060 m, on calcareous rock, 18 July 2004, *leg. L. Śliwa 2453*; Dolina Chochołowska valley, Polana Huciska glade, 49°15'32" N, 19°49'07" E, alt. 1000 m, on calcareous rock, 19 July 2004, *leg. L. Śliwa 2567*; Dolina Chochołowska valley, Polana Chochołowska glade, 49°14'16" N, 19°47'47" E, alt. 1105 m, on calcareous rock, 16 July 2004, *leg. L. Śliwa 3116*; Dolina Kościeliska valley, Wyżnia Miętusia Polana glade, 49°15'09" N, 19°53'44" E, alt. 1160 m, on calcareous rock, 10 June 2004, *leg. L. Śliwa 2414*.

Dacampia engeliana (Saut.) A. Massal.

In the Polish Tatra Mts. the species has been recorded from NW slope of Mt. Świstówka, alt. 1800 m, Mt. Kopa Magury, alt. 1675 m and 500 m N of Mt. Kopa Kondracka, alt. 1900 m by Alstrup and Olech (1996). The location of currently known sites of the species is indicated on the map (Fig. 4).

Specimens examined. West Tatra Mts.: Mt. Małołączniak by Kobylarzowy Żleb gully, alt. 1750, on *Solorina saccata* over humus in limestone crack, 10 July 2004, *leg. A. Flakus 2266*; Mt. Kopa Magury above Dolina Jaworzynki valley, alt. 1650 m, on *Solorina saccata* in limestone crack, 25 July 1961, *leg. J. Nowak* (KRAM-L 7371, as *D. hookeri*); between Przełęcz Kondracka pass and Świstówka dale, alt. 1730 m, on *Solorina saccata* on dead mosses in limestone crack, 11 August 1971, *leg. J. Nowak* (KRAM-L 24157, as *D. hookeri*); Wrótka pass above Kalatówki glade, alt. 1500 m, on sterile crustose lichen on mosses and plant debris in limestone crack, 9 July 1959, *leg. J. Nowak*, (KRAM-L 24076, as *D. hookeri*).

Dactylospora saxatilis (Schaer.) Hafellner

In the Polish Tatra Mts. the species has been recorded from Dolina Kościeliska valley, Wąwóz Kraków gully, alt. 1500 m, N aspect, on vertical limestone rock, 10 June 1963, *leg. J. Nowak* (KRAM-L 21403) by Bielczyk (2003). The location of currently known sites of the species is indicated on the map (Fig. 3).

Specimen examined. West Tatra Mts.: Twardy Upłaz, N slope of Mt. Ciemniak near Dolina Mułowa valley, 49°14'14" N, 19°54'13" E, alt. 1900 m, on thallus of

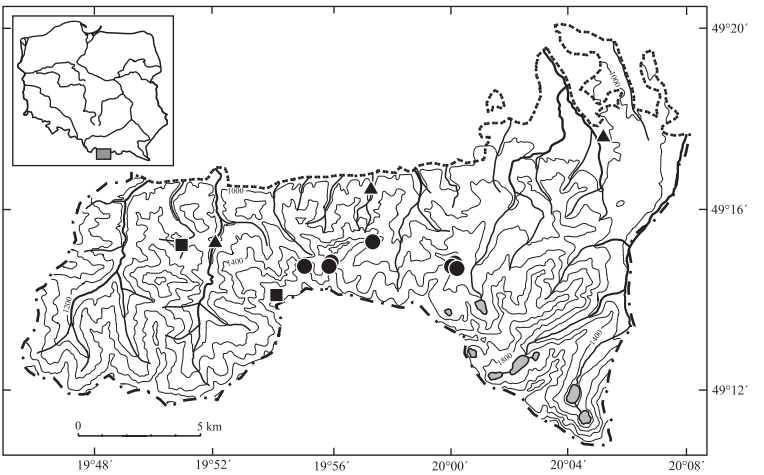

Fig. 4. Distribution of ● – *Dacampia engeliana* (Saut.) A. Massal., ■ – *Eiglera flavida* (Hepp) Hafellner and ▲ – *Lecanora rugosella* Zahlbr. in the Tatra National Park.

Pertusaria flavicans over siliceous schist contains calcium, 30 July 2005, *leg. A. Flakus 5123/1*.

Eiglera flavida (Hepp) Hafellner

From the Polish Tatra Mts. the species was reported by Nowak and Tobolewski (1975) as well as by Alstrup and Olech (1992b). In both publications no particular collecting sites were cited (specimens not seen). The location of currently known sites of the species is indicated on the map (Fig. 4).

Specimens examined. West Tatra Mts.: Twardy Upłaz, N slope of Mt. Ciemniak near Dolina Mułowa valley, 49°14'14" N, 19°54'13" E, alt. 1900 m, on siliceous schist containing calcium, 30 July 2005, *leg. A. Flakus 5119*; Dolina Lejowa valley, Niżnia Polana Kominiarska glade, 49°15'11" N, 19°50'53" E, alt. 1140 m, on limestone rock, 15 June 2004, *leg. L. Śliwa 2183*.

Fellhanera subtilis (Vězda) Diederich et Sérus.

In the Polish Tatra Mts. the species has been recorded from Dolina Suchej Wody valley, on the trail from Brzeziny village to Psia Trawka glade, alt. 1100 m, on twigs of *Vaccinium myrtillus*, Psia Trawka glade, alt. 1200 m, on twigs of *Vaccinium myrtillus*, Dolina Suchej Wody valley between Psia Trawka glade and Hala Gąsienicowa glade, alt. 1350 m, on twigs of *Vaccinium myrtillus* by Bielczyk (1999). The location of currently known sites of the species is indicated on the map (Fig. 5).

Specimens examined. High Tatra Mts.: Dolina Rybiego Potoku valley, on the trail from Morskie Oko lake to Polana Szałasiska glade, 49°12'37" N, 20°04'30" E, alt. 1360 m, on twigs of *Vaccinium myrtillus*, 23 July 2004, *leg. A. Flakus 2846*; Dwoisty Żleb gully above Morskie Oko lake, 49°12'03" N, 20°04'32" E, alt. 1440 m, on twigs of *Vaccinium myrtillus*, 6 August 2004, *leg. A. Flakus 3008*; Dolina Rybiego Potoku valley, near Polana Włosienica glade, 49°13'20" N, 20°03'01" E, alt. 1300 m, on twigs of *Vaccinium myrtillus*, 23 August 2004, *leg. A. Flakus 3311/1*; Sub-Tatra Trough: Wawrzeczkowa Cyrhla glade near Małe Ciche village, 49°17'13" N, 20°03'32" E, alt. 950, on twigs of *Vaccinium myrtillus*, 16 June 2004, *leg. L. Śliwa 2282*; Pańszczykowa

Polana glade near Małe Ciche village, 49°17'30" N, 20°03'35" E, alt. 925 m, on twigs of *Vaccinium myrtillus*, 16 June 2004, *leg. L. Śliwa 2284*.

Fellhaneropsis vezdae (Coppins et P. James) Sérus. et Coppins

It is new species to the whole Tatra Mts. and it is recorded here for the first time from Polish Carpathians. It has been reported from central and north-eastern Poland (see Fałtynowicz 2003). The location of currently known sites of the species is indicated on the map (Fig. 9).

Specimen examined. High Tatra Mts.: Dolina Rybiego Potoku valley by Morskie Oko lake, alt. 1400 m, the upper montane belt, on bark of *Pinus cembra*, 17 July 2004, *leg. A. Flakus 2617/5*.

Lecanora rugosella Zahlbr.

In the Tatra National Park the species has been recorded from Dolina Kościeliska valley, Stare Kościeliska glade, alt. 965 m, on bark of *Tilia cordata* and Polana Brzanówka glade near Małe Ciche village, alt. 930 m, on bark of *Fraxinus excelsior* by Śliwa (2006). The location of currently known sites of the species is indicated on the map (Fig. 4).

Specimen examined. West Tatra Mts.: Dolina Białego valley, alt. 940 m, the lower montane belt, on bark of *Acer pseudoplatanus* by the stream, 30 September 2004, *leg. A. Flakus 3575*.

Lepraria borealis Lohtander et Tønsberg

In the Polish Tatra Mts. the species has been recorded from Przełęcz Karb pass below Mt. Kościelec, alt. 1852 m, on saxicolous mosses and Żabia Grań ridge, NW slope, alt. ca 1500 m, on granite rock by Kukwa (2004). The location of currently known sites of the species is indicated on the map (Fig. 5).

Specimen examined. High Tatra Mts.: Dwoisty Żleb gully, 49°12'03" N, 20°04'41" E, alt. 1600 m, the subalpine belt, on bryophytes, 6 August 2004, *leg. A. Flakus 2964*.

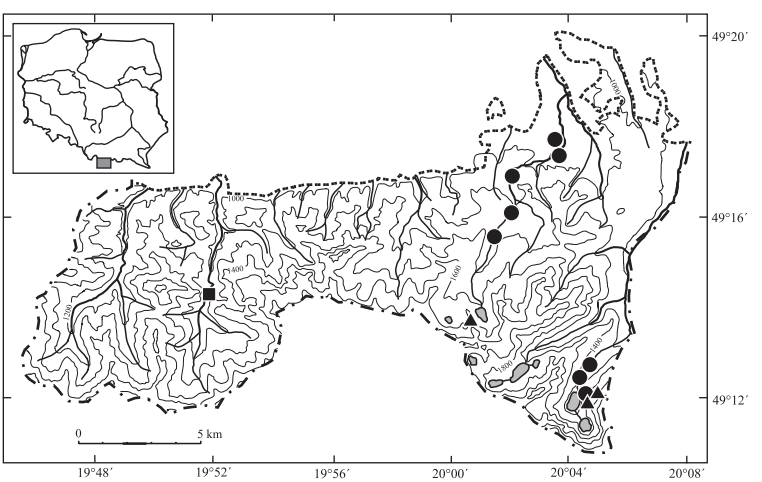

Fig. 5. Distribution of ● – *Fellhanera subtilis* (Vězda) Diederich et Sérus., ■ – *Vezdaea stipitata* Poelt et Döbbeler and ▲ – *Lepraria borealis* Lohtander et Tønsberg in the Tatra National Park.

Lepraria nivalis J. R. Laundon chemotype I

In the Polish Tatra Mts. the species has been recorded from Dolina Kościeliska valley, alt. 950 m, on limestone, alt. 1000 m, on limestone by Czarnota and Kukwa (2004) and Wąwóz Kraków gully, on shaded limestone wall by Kukwa (2004). The location of currently known sites of the species is indicated on the map (Fig. 6).

Specimen examined. West Tatra Mts.: Dolina Kościeliska valley, alt. 1020 m, E slope, on limestone rock, 30 November 2002, *leg. A. Flakus 197*.

Lepraria vouauxii (Hue) R. C. Harris

In the Polish Tatra Mts. the species has been recorded from site between Czerwone Stawki lakes and Kurtkowiec lake, alt. 1425 m, on granite, Dolina Strążyska valley on calcareous soil by Alstrup and Olech (1992a) and Dolina Kościeliska valley, alt. ca 950 m, on limestone rock and S slope of Mt. Wysoki Grzbiet, alt. ca 1570 m, on calcareous soil by Kukwa (2004). The location of currently known sites of the species is indicated on the map (Fig. 6).

Specimens examined. West Tatra Mts.: Szerokie Upłaziańskie, NE slope of Mt. Ciemniak, alt. 1900 m, on plant debris, 9 July 2004, *leg. A. Flakus 2254/1*; Dolina Mułowa valley, lower part of Mt. Krzesanica, alt. 1900 m, on overhanging limestone rock and saxicolous mosses, 9 July, 2004, *leg. A. Flakus 2239*.

Miriquidica leucophaea (Rabenh.) Hertel et Rambold

In the Polish Tatra Mts. the species has been recorded from Mt. Kobyła above Dolina Suchej Wody valley, alt. 1220 m, on granite boulder and Mt. Cubryna, alt. 2370 m, on granite wall by Flakus (2004) and Mt. Skrajna Turnia (leg. M. R. D. Seaward see Lisická 2005). The location of currently known sites of the species is indicated on the map (Fig. 6).

Specimens examined. West Tatra Mts.: Dolina Chochołowska valley, Polana Chochołowska glade, 49°14'16" N, 19°47'47" E, alt. 1105 m, on stone, 16 July 2004,

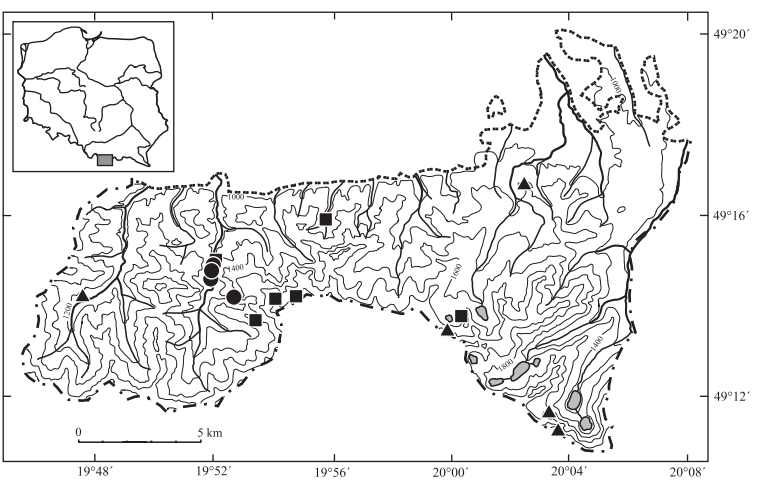

Fig. 6. Distribution of ● – *Lepraria nivalis* J. R. Laundon, ■ – *Lepraria vouauxii* (Hue) R. C. Harris and ▲ – *Miriquidica leucophaea* (Rabenh.) Hertel et Rambold in the Tatra National Park.

leg. L. Śliwa 3075; High Tatra Mts.: Dolina za Mnichem valley, alt. 1950 m, on granite stone, 21 August 2002, *leg. A. Flakus 104*.

Normandina pulchella (Borrer) Nyl.

In the Polish Tatra Mts. the species has been recorded from Dolina Strążyska valley, on bryophytes over bark of *Fagus sylvatica*, alt. ca 950 m by Suza (1928) and Fałtynowicz (1999); Dolina Białego valley, alt. 960 m, on bark of *Acer pseudoplatanus* by Tobolewski (1956, 1957) and Fałtynowicz (1999); Mt. Łysanki, E slope above Dolina Strążyska valley, alt. ca 1050 m, on *Fagus sylvatica* by Tobolewski (1960); Dolina Olczyska valley, alt. 930 m, on *Fagus sylvatica* by Tobolewski (1962) and Dolina za Bramką valley, near mouth of a stream by Fałtynowicz (1999). The location of currently known sites of the species is indicated on the map (Fig. 7).

Specimens examined. West Tatra Mts.: below Mt. Jastrzębia Turnia near Dolina nad Capkami valley, alt. 1060 m, on bark of *Fagus sylvatica* and corticolous mosses, 30 September 2004, *leg. A. Flakus 3545*, on corticolous mosses on bark of *Acer pseudoplatanus*, 30 September 2004, *leg. A. Flakus 3546*.

Parmelina tiliacea (Hoffm.) Hale

From the Polish Tatra Mts. the species was reported by Alstrup and Olech (1992b), but the authors do not cite collecting sites (specimens not seen). The location of currently known sites of the species is indicated on the map (Fig. 7).

Specimen examined. West Tatra Mts.: Dolina Chochołowska valley near Siwa Polana glade, alt. 925 m, on bark of *Acer pseudoplatanus*, 3 May 2004, *leg. A. Flakus 2236*.

Pertusaria flavicans Lamy

In the Polish Tatra Mts. the species has been recorded from Mt. Skrajna Turnia, alt. 1850 m, on vertical granite rock by Alstrup and Olech (1988). The location of currently known sites of the species is indicated on the map (Fig. 7).

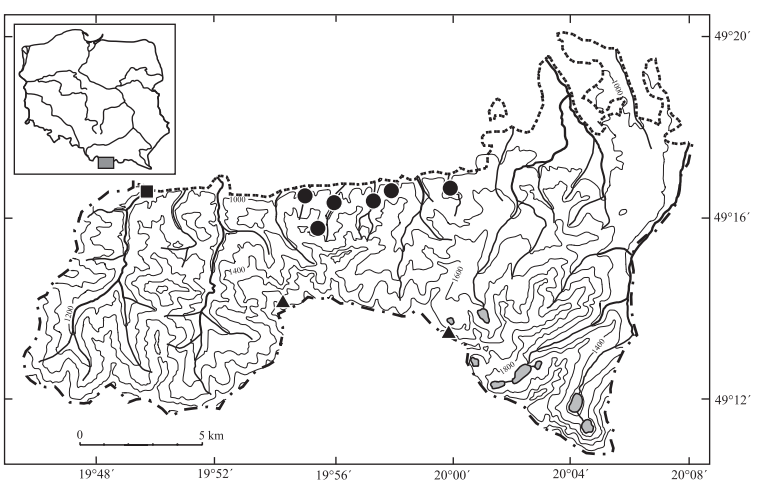

Fig. 7. Distribution of ● – *Normandina pulchella* (Borrer) Nyl., ■ – *Parmelina tiliacea* (Hoffm.) Hale and ▲ – *Pertusaria flavicans* Lamy in the Tatra National Park.

SPECIMEN EXAMINED. West Tatra Mts.: Twardy Upłaz, N slope of Mt. Ciemniak near Dolina Mułowa valley, 49°14'14" N, 19°54'13" E, alt. 1900 m, on siliceous schist contains calcium, 30 July 2005, *leg. A. Flakus 5123*.

Polysporina lapponica (Schaer.) Degel.

In the Polish Tatra Mts. the species has been recorded from Mt. Pośredni Mięguszowiecki Szczyt, alt. 2392 m, on granite by Flakus (2004). The location of currently known sites of the species is indicated on the map (Fig. 8).

SPECIMEN EXAMINED. High Tatra Mts.: Zadnia Cubryńska Galeria dale by Zadni Mnichowy Stawek lake, 49°11'24" N, 20°03'06" E, alt. 2080 m, W aspect, slope 130°, the alpine belt, on granite boulder, 24 July 2004, *leg. A. Flakus 2850*.

Porina lectissima (Fr.) Zahlbr.

In the Polish Tatra Mts. the species has been recorded from Dolina Strążyska valley, alt. 900 m by Motyka (1926). The location of currently known sites of the species is indicated on the map (Fig. 8).

SPECIMENS EXAMINED. High Tatra Mts.: Dwoisty Żleb gully, 49°12'03" N, 20°04'44" E, alt. 1680 m, on granite rock in shaded place, 6 August 2004, *leg. A. Flakus 3001*; Dolina Pięciu Stawów Polskich valley, by Zadni Staw lake, 49°12'39" N, 20°00'48" E, alt. 1895 m, on granite boulder among scree, in moist and shaded place, 18 August 2004, *leg. A. Flakus 3300/1*.

Protoblastenia siebenhaariana (Körb.) J. Steiner

In the Polish Tatra Mts. the species has been recorded from Szpiglasowa Przełęcz pass, alt. 2107 m, on mylonite wall, Przełączka pod Zadnim Mnichem pass, 2135 m, on mylonite by Flakus (2004) and Dolina Sucha Kasprowa valley, alt. 1650 m, on concrete by Węgrzyn (2006). The location of currently known sites of the species is indicated on the map (Fig. 8).

SPECIMENS EXAMINED. West Tatra Mts.: Twardy Upłaz, N slope of Mt. Ciemniak near Dolina Mułowa valley, 49°14'14" N, 19°54'13" E, alt. 1900 m, on siliceous schist

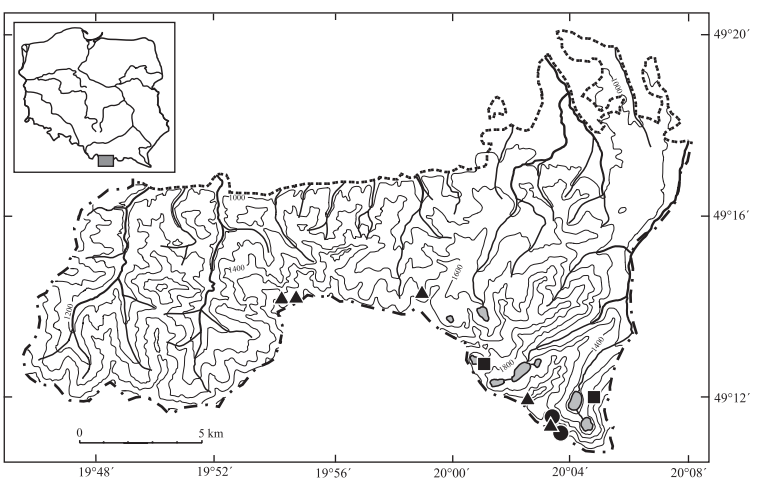

Fig. 8. Distribution of ● – *Polysporina lapponica* (Schaer.) Degel., ■ – *Porina lectissima* (Fr.) Zahlbr. and ▲ – *Protoblastenia siebenhaariana* (Körb.) J. Steiner in the Tatra National Park.

contains calcium, 30 July 2005, *leg. A. Flakus 5125*; Dolina Mułowa valley, lower part of Mt. Krzesanica, alt. 1900 m, on limestone rock, 9 July 2004, *leg. A. Flakus 2242*.

Pseudosagedia guentheri (Flot.) Hafellner et Kalb

In the Tatra National Park the species has been recorded only from Dolina Rybiego Potoku valley, W of Czarny Staw pod Rysami, on overhanging granite, alt. 1610 m by Alstrup and Olech (1988). The location of currently known sites of the species is indicated on the map (Fig. 1).

Specimen examined. High Tatra Mts.: Dolina Pięciu Stawów Polskich valley, by Zadni Staw lake, 49°12'39" N, 20°00'48" E, alt. 1895 m, on granite boulder among scree, in moist and shaded place, 18 August 2004, *leg. A. Flakus 3300*.

Ramalina obtusata (Arnold) Bitter

The species has been recorded from the Polish Tatra Mts. by Motyka (1962), but the author do not mention stations, and by Bielczyk (2003) from Dolina Kościeliska valley, Brama Kantaka gate by Potok Kościeliski stream, on bark of *Picea abies*, 6 July 1955, *leg. J. Nowak* (KRAM-L 8266). The location of currently known sites of the species is indicated on the map (Fig. 9).

Specimens examined. West Tatra Mts.: Dolina Kościeliska valley near the trail to Wąwóz Kraków gully, alt. 1090 m, on bark of *Picea abies*, 22 July 2005, *leg. A. Flakus 5007*, alt. 1100 m, on bark of *Picea abies*, 22 July 2005, *leg. A. Flakus 5001*.

****Thelocarpon epibolum*** Nyl.

In the Tatra National Park the species has been recorded from Dolina Chochołowska Wyżnia valley, alt. ca 1180 m, Mt. Kobyła above Dolina Suchej Wody valley, alt. ca 1180 m, Brzeziny village by Chowańcówka stream, alt. ca 1020 m, on rotten wood of *Picea abies* by Nowak (1974), Mt. Skupniów Upłaz, alt. 1480 m, on *Aneura* sp. on flat ground by Alstrup and Olech (1990) and Siwa Przełęcz pass, alt. 1815 m, on thallus of *Lichenomphalia hudsoniana* by Cykowska and Flakus (2005). The location of currently known sites of the species is indicated on the map (Fig. 9).

Specimen examined. High Tatra Mts.: Dwoisty Żleb gully, 49°12'03" N, 20°04'44" E, alt. 1680 m, on thallus of *Baeomyces rufus*, 6 August 2004, *leg. A. Flakus 2987/2*.

Toninia athallina (Hepp) Timdal

In the Tatra National Park the species has been recorded from N slope of Mt. Gładkie Jaworzyńskie, on limestone by Motyka (1927). The location of currently known sites of the species is indicated on the map (Fig. 2).

Specimen examined. West Tatra Mts.: Dolina Mułowa valley, lower part of Mt. Krzesanica, alt. 1900 m, on limestone rock, 9 July 2004, *leg. A. Flakus 2246*.

Trapelia involuta (Taylor) Hertel

Distribution of the species in the Polish Tatra Mts. has been characterized by Flakus (2004). The location of currently known sites of the species is indicated on the map (Fig. 9).

Specimens examined. High Tatra Mts.: Dolina Pięciu Stawów Polskich valley, by Zadni Staw lake, 49°12'39" N, 20°00'48" E, alt. 1895 m, on small granite stones, 18 August 2004, *leg. B. Cykowska* (KRAM-L 49750); Sub-Tatra Trough: Pańszczykowa Polana glade near Małe Ciche village, 49°17'36" N, 20°03'36" E, alt. 920 m, on stones,

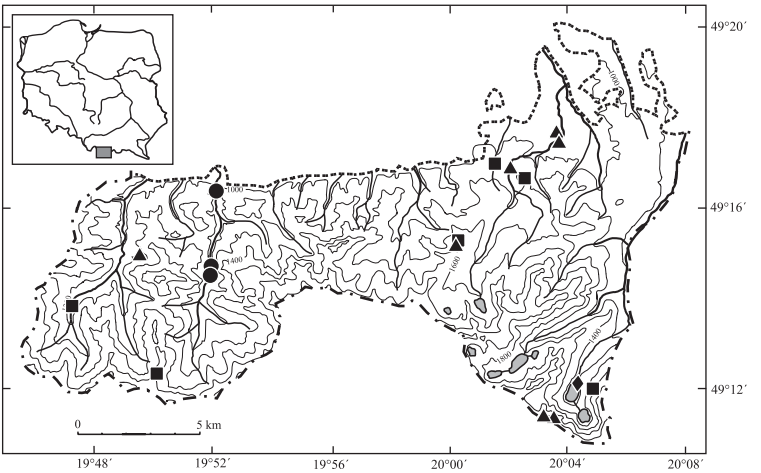

Fig. 9. Distribution of ● – *Ramalina obtusata* (Arnold) Bitter, ■ – *Thelocarpon epibolum* Nyl. and ▲ – *Trapelia involuta* (Taylor) Hertel and ♦ – *Fellhaneropsis vezdae* (Coppins et P. James) Sérus. et Coppins in the Tatra National Park.

13 July 2004, *leg. L. Śliwa 2921*; Wawrzeczkowa Cyrhla glade near Małe Ciche village, 49°17'13" N, 20°03'32" E, alt. 950 m, on stone, 16 July 2004, *leg. L. Śliwa 2275*.

Vezdaea stipitata Poelt et Döbbeler

The species is new to Polish Tatra Mts. It has been reported in Poland from Gorce Mts. by Czarnota (1998) and Pieniny Mts. by Kiszka (2003). In the Tatrta Mts. it is known from single locality in the Belianske Tatry Mts. (see Lisická 2005). The location of currently known site of the species is indicated on the map (Fig. 5).

Specimen examined. West Tatra Mts.: by trail in upper part of Dolina Kościelliska valley, alt. 1100 m, on *Hylocomium splendens* growing in limestone crack, in moist and schaded place, 22 July 2005, *leg. A. Flakus 5016*.

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REFERENCES

Alstrup V., Olech M. 1988. Additions to the lichen flora of the Polish Tatra Mountains. Zesz. Nauk. Uniw. Jagiellon. Prace Bot. 17: 179–183.

Alstrup V., Olech M. 1990. Additions to the lichen flora of the Polish Tatra Mountains. II. Zesz. Nauk. Uniw. Jagiellon. Prace Bot. 21: 211–217.

Alstrup V., Olech M. 1992a. Additions to the lichen flora of the Polish Tatra Mountains. III. Zesz. Nauk. Uniw. Jagiellon. Prace Bot. 24: 179–184.

Alstrup V., Olech M. 1992b. Checklist of the lichens of the Tatra National Park, Poland. Zesz. Nauk. Uniw. Jagiellon. Prace Bot. 24: 185–206.

Alstrup V., Olech M. 1996. Lichenicolous fungi from the Polish Tatra Mountains. Fragm. Flor. Geobot. 41 (2): 747–752.

Bielczyk U. 1997. Materiały do flory porostów Tatr ze zbiorów Muzeum Tatrzańskiego. Fragm. Flor. Geobot. Ser. Polonica 4: 329–343.

Bielczyk U. 1999. Materiały do geograficznego rozmieszczenia porostów (Lichenes) w Polsce. 1. Porosty Tatr. Fragm. Flor. Geobot. Ser. Polonica 6: 245–253.

Bielczyk U. 2003. The lichens and allied fungi of the Polish Western Carpathians. (In:) U. Bielczyk (ed.). The lichens and allied fungi of the Polish Carpathians – an annotated checklist: 23–232.

Cykowska B., Flakus A. 2005. *Epigloea medioincrassata* (Epigloeaceae, non-lichenized Ascomycota), a species new to Poland. Polish Bot. J. 50 (2): 233–234.

Czarnota P. 1998. Some interesting lichens from Gorce Mts. (Western Beskidy Mts.) new to Poland. Graphis Scripta 9 (2): 59–61.

Czarnota P. 2002. *Caloplaca herbidella* (Hue) H. Magn. (In:) U. Bielczyk, S. Cieśliński, W. Fałtynowicz (eds). Atlas of the geographical distribution of lichens in Poland. 3. W. Szafer Inst. Bot., Pol. Acad. Sci., Kraków: 25–28.

Czarnota P., Kukwa M. 2004. Some sorediate lichens and lichenicolous fungi new to Poland. Graphis Scripta 15: 24–32.

Fałtynowicz W. 1999. *Normandina pulchella* (Borrer) Nyl. (In:) S. Cieśliński, W. Fałtynowicz (eds). Atlas of the geographical distribution of lichens in Poland. 2. W. Szafer Inst. Bot., Pol. Acad. Sci., Kraków: 39–45.

Fałtynowicz W. 2003. The lichens, lichenicolous and allied fungi of Poland. An annotated checklist. W. Szafer Inst. Bot., Pol. Acad. Sci., Kraków, 435 pp.

Flakus A. 2004. New and rare lichen species of the Polish Tatra Mountains. Polish Bot. J. 49 (1): 79–91.

Kiszka J. 2003. Nowe dla Pienin gatunki porostów. Cz. III. Fragm. Flor. Geobot. Polonica 10: 297–299.

Kukwa M. 2004. Porosty z rodzaju *Lepraria* w Tatrzańskim Parku Narodowym. Parki Nar. Rez. Przyr. 23: 3–12.

Lisická E. 2005. The lichens of the Tatry Mountains. VEDA, Slovak Academy of Sciences, Bratislava, 439 pp.

Motyka J. 1926. Die Pflanzenassoziationen des Tatra–Gebirges. VI Teil: Studien über epilitischen Flechtengesellschaften. Bull. Int. Acad. Polon. Sci., Cl. Sci. Math., Ser. B, Sci. Nat. 3–4: 189–227.

Motyka J. 1927. Materiały do flory porostów Tatr. Część II. Spraw. Komis. Fizyogr. Akad. Umiejętn. 61: 1–16.

Motyka J. 1962. Porosty (Lichenes). 5 (2). (In:) Flora polska. Rośliny Zarodnikowe Polski i Ziem Ościennych. Państwowe Wydawnictwo Naukowe, Warszawa, 355 pp.

Nowak J. 1974. Materiały do flory porostów Tatr polskich. Fragm. Flor. Geobot. 20 (1): 89–102.

Nowak J., Tobolewski Z. 1975. Porosty polskie. Opisy i klucze do oznaczania porostów w Polsce dotychczas stwierdzonych lub prawdopodobnych. Państwowe Wydawnictwo Naukowe, Warszawa-Kraków, 1177 pp.

Suza J. 1928. Przyczynek do znajomości flory porostów Polski. Acta Soc. Bot. Pol. 5 (2): 213–219.

Śliwa L. 2006. Additions to the lichen flora of the Tatra National Park and its surroundings (Polish Carpathians). (In:) A. Lackovičová, A. Guttová, E. Lisická, P. Lizoň (eds). Central European Lichens – diversity and threat. Mycotaxon Ltd, Ithaca: 305–313.

Tobolewski Z. 1956. Lichenotheca Polonica. Fasc. VII. No 126–150. Lichenes Tatrenses. Academia Scientiarum Poloniae, Poznań, 9 pp.

Tobolewski Z. 1957. Materiały do flory porostów Tatr II. Pozn. Tow. Przyj. Nauk, Wydz. Mat.-Przyr. Prace Kom. Biol. 17 (4): 1–22 + phot. 1–2.

Tobolewski Z. 1960. Materiały do flory porostów Tatr IV. Pozn. Tow. Przyj. Nauk, Wydz. Mat.-Przyr. Prace Kom. Biol. 21 (5): 1–31.

Tobolewski Z. 1962. Materiały do flory porostów Tatr V. Pozn. Tow. Przyj. Nauk, Wydz. Mat.-Przyr. Prace Kom. Biol. 24 (2): 21–30.

Węgrzyn M. 2006. Porosty apofityczne (apoporosty) w Dolinie Suchej Kasprowej w Tatrzańskim Parku Narodowym. Parki Nar. Rez. Przyr., 25 (2): 3–10.

Materiały do rozmieszczenia porostów i grzybów naporostowych Tatrzańskiego Parku Narodowego

Streszczenie

Tatry stanową największą osobliwość przyrodniczą Karpat Zachodnich. Są jednym z centrów różnorodności gatunkowej, jak również miejscem występowania rzadkich arktyczno-alpejskich gatunków w Europie. Obecnie znanych jest z tego pasma 1250 gatunków porostów i 87 gatunków związanych z nimi grzybów naporostowych oraz saprobiontów (Lisická 2005). Mimo to, wiedza dotycząca lichenobioty Tatr jest wciąż niekompletna i wymaga dalszych systematycznych badań. W pracy przedstawiono nowe stanowiska 25 rzadkich gatunków porostów i 3 grzybów naporostowych z Tatrzańskiego Parku Narodowego wraz z ich rozmieszczeniem na tym obszarze (Figs 1–9).

Fellhaneropsis vezdae jest gatunkiem nowym dla polskiej części Karpat i jednocześnie dla całego pasma Tatr, a *Vezdaea stipitata* – dla Tatr Polskich.