

NEW DISTRIBUTIONAL DATA ON BRYOPHYTES  
OF POLAND AND SLOVAKIA, 10PIOTR GÓRSKI, EWA FUDALI, LUDWIK ŻOŁNIERZ, MICHAŁ SMOCZYK, SYLWIA WIERZCHOLSKA,  
STANISŁAW ROSADZIŃSKI, MARCIN K. DYDERSKI

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ABSTRACT. This work presents a list of localities for the following species: *Anomodon attenuatus*, *A. viticulosus*, *Dicranum viride*, *Gymnomitrium alpinum*, *Hedwigia ciliata*, *Homalia trichomanoides*, *Lophozia longidens*, *Obtusifolium obtusum*, *Odontoschisma elongatum*, *Orthodicranum tauricum*, *Porella platyphylla*, and *Syntrichia papillosa*.

1. *Anomodon attenuatus* (Hedw.) Huebener

Authors: E. FUDALI, L. ŻOŁNIERZ

ATMOS Eb-47: SW Poland, Silesian Lowland (Nizina Śląska), Wrocław valley (Pradolina Wrocławska), Wrocław city, urban forests situated within the administrative borders of the city, western Wrocław, Ratyń, 51.127829°N, 16.843513°E, wet forest near the Bystrzyca River, bark of *Fraxinus excelsior* up to 1.3 m above the ground, leg., det. E. Fudali, L. Żołnierz, 23.10.2015 (KRAM); ATMOS Eb-48: SW Poland, Silesian Lowland, Wrocław valley, Wrocław city, urban forests situated within the administrative borders of the city, northern Wrocław, Las Rędziński, 51.165756°N, 16.951927°E, bark of *Acer campestre* up

to 1.5 m above the ground, leg., det. E. Fudali, L. Żołnierz, 8.10.2015 (KRAM); western Wrocław, Las Pilczycki, 51.153207°N, 16.955346°E, bark of *Acer campestre* at a height 0.8–1.5 m above the ground, leg., det. E. Fudali, L. Żołnierz, 5.10.2015 (KRAM); 51.154493°N, 16.959593°E, bark of *Acer campestre* and *Fraxinus excelsior* at a height 0.8–1.5 m above the ground, leg., det. E. Fudali, L. Żołnierz, 5.10.2015 (KRAM); ATMOS Ec-40: SW Poland, Silesian Lowland, Wrocław valley, Wrocław city, urban forests situated within the administrative borders of the city, eastern Wrocław, Las Wojnów, 51.111655°N, 17.161539°E, wet forest near the river, bark of *Fraxinus excelsior* up to 1.5 m above the ground, leg., det. E. Fudali, L. Żołnierz, 18.06.2015 (KRAM).

In the Silesian Lowland, epiphytic-epilithic moss species *Anomodon attenuatus* seem to occur very rarely, and it has only been observed on deciduous trees in forest nature reserves (BERDOWSKI 1970, WILCZYŃSKA 1974, WILCZYŃSKA & KOŁA 1974–1975a, b). It was recorded in the nineteenth century from the Wrocław environs (MILDE 1869), but the last record of the species from that area is dated in 1955 (Z. and O.M. Bednarczuk, 17.08.1955, herbarium WR). This species was then observed on the bark of *Quercus robur* in a forest situated in eastern Wrocław, near the settlement of Swojec. The stations presented indicate that the species still occurs in scattered populations in forests surrounding Wrocław. This species has not migrated into the city (FUDALI 2012).

## 2. *Anomodon viticulosus* (Hedw.) Hook. & Taylor

Authors: E. Fudali, L. Żoźnierz

ATMOS Eb-48: SW Poland, Silesian Lowland, Wrocław valley, western Wrocław, urban forests situated near the mouth of the Bystrzyca River in the Stabłowice settlement, 51.19121°N, 16.916439°E, base and stem of *Populus nigra* up to 1.2 m above the ground, *leg.*, *det.* E. Fudali, L. Żoźnierz, 23.10.2015 (KRAM).

The epiphytic-epilithic moss species *Anomodon viticulosus* occurs in the entire area of Poland, with the exception of Kraków-Częstochowa Upland (Wyżyna Krakowsko-Częstochowska) (FOJCIK 2011), where it is classified as very rare (WILCZYŃSKA 1974, RUSIŃSKA 1981, STEBEL 2006, WILHELM et al. 2015, ZUBEL et al. 2015). Also, in the Silesian Lowland, this species seems to occur sporadically or is very rare, and this species has been observed only on deciduous trees in forest nature reserves (WILCZYŃSKA & KOŁA 1974–1975a). Thus far, this species has not been reported from Wrocław or from the city environs (MILDE 1869, FUDALI 2012).

## 3. *Dicranum viride* (Sull. & Lesq.) Lindb.

Author: S. ROSADZIŃSKI

ATMOS Da-07: W Poland, Lubuskie Lakeland (Pojezierze Lubuskie), Łagowskie Lakeland (Pojezierze Łagowskie), 3.6 km north-east of the village of Łagówek, forest section 17f of the Świebodzin Forest Inspectorate, 52.381°N, 15.323°E, trunk of *Fagus sylvatica*, *Deschampsia flexuosae-Fagetum*, *det.* S. Rosadziński, 16.04.2017.

*Dicranum viride*, a threatened European moss species, is known from scattered stations in Poland and has the largest number of localities in the southern part of the country (Stebel et al. 2015, Vončina 2016). This species was observed in beech forests near Łagów during the first half of the twentieth century by Reimers (1933). This author described three localities of this species in the former forest sections

14, 23, and 41. A contemporary station of *D. viride* was observed in the outdated forest section 14. This described locality of *D. viride* is currently the only known one in Lubuskie voivodeship.

## 4. *Gymnomitrium alpinum* (Gottsche ex Husn.)

Schiffn. [= *Marsupella alpina* (Gottsche ex Husn.) Bernet]

Author: P. GÓRSKI

SLOVAKIA: MGRS 34UDV3448, High Tatra Mts, Spádová dolinka valley, 49.18647°N, 20.09437°E, alt. 1955 m above sea level (a.s.l.), rocky walls dripping with water, *leg.*, *det.* P. Górski, 25.08.2009 (KRAM, POZNB 354).

*Gymnomitrium alpinum* is a relatively rare species that occurs exclusively in the High Tatra Mountains. This new locality was observed in the Slovakian part of the massif, where 25 localities have been recorded (GÓRSKI & VÁŇA 2014). In Slovakia, *G. alpinum* is red listed as category EN (KUBINSKÁ et al. 2001). In the entire area of the Tatra Mts, 36 localities of *G. alpinum* have been recorded within an altitude range of 1600–2060 m a.s.l. (GÓRSKI & VÁŇA 2014).

## 5. *Hedwigia ciliata* (Hedw.) P. Beauv.

Authors: S. WIERZCHOLSKA, M. SMOCZYK

ATMOS Cg-56: NE Poland, Podlasie Lowland (Nizina Podlaska), Bielska Plain (Równina Bielska), Białowieża, Białowieża National Park, forest compartment No. 403A, Dziedzinka, 52.7225°N, 23.9088°E, alt. 168 m a.s.l., patch of 50 cm<sup>2</sup> on an erratic granite boulder. Accompanying species included *Schistidium apocarpum*, *Hypnum cupressiforme*, *Leskeella nervosa*, and *Plagiomnium* spp., *leg.*, *det.* S. Wierzcholska, 4.05.2016 (KRAM, POZG); ATMOS Cg-55: NE Poland, Podlasie Lowland, Bielska Plain, Białowieża Forestry, forest compartment No. 367Cc, 52.72608°N, 23.78364°E, alt. 163 m a.s.l., patch of 35 cm<sup>2</sup> on erratic boulders in a *Tilio-Carpinetum* community. Accompanying species included *Isothecium alopecuroides*, *Hypnum cupressiforme*, and *Orthodicranum montanum*, *leg.*, *det.* S. Wierzcholska, 2.05.2016 (BSG, POZG); ATMOS Cg-65: NE Poland, Podlasie Lowland, Bielska Plain, Białowieża National Park, Białowieża Palace Park, 52.70635°N, 23.8493°E, alt. 165 m a.s.l., patch of 8 cm<sup>2</sup> on erratic boulders protected by law (monument of inanimate nature). Accompanying species included *Schistidium apocarpum*, *Hypnum cupressiforme*, and *Radula complanata*, *leg.*, *det.* S. Wierzcholska, 6.05.2016; ATMOS Cg-65: NE Poland, Podlasie Lowland, Bielska Plain, Białowieża National Park, Białowieża Palace Park, 52.70375°N, 23.84179°E, alt. 160 m a.s.l., patch of 15 cm<sup>2</sup> on erratic boulders used as construction material for parking surface. Accompanying species included *Schistidium apocarpum* and *Hypnum cupressiforme*, *leg.*,

det. S. Wierzcholska, 6.05.2016; ATMOS Fb-24: SW Poland, Central Sudetes Mountains (Sudety Środkowe), Góry Orlickie Mountains, slope of Podgórna stream valley south of the city of Duszniki-Zdrój, forest section 120d of the Zdroje Forest Inspectorate, 50.3830°N, 16.3710°E, alt. 650 m a.s.l., gneissic rock outcrop in an acidophilous beech forest from an *Luzulo luzuloidis-Fagetum sylvatici* association, leg., det. M. Smoczyk, 26.07.2012, c. spor. (POZG); ATMOS Fb-25: Central Sudetes Mts, Góry Stołowe Mts, Piekielna Góra Massif near the city of Polanica-Zdrój, rock cliff on southern slope of Mount Garncarz, forest section 452g of the Zdroje Forest Inspectorate, 50.3979°N, 16.4970°E, alt. 425 m a.s.l., on a sandstone boulder in a *Pinus sylvatica*-dominated forest growing alongside the mosses *Hypnum cupressiforme* and *Orthodicranum montanum* in a community dominated by saxicolous lichens, leg., det. M. Smoczyk, 28.05.2016, c. spor. (POZG); ATMOS Fb-25: Central Sudetes Mts, Kłodzko basin (Kotlina Kłodzka), former Protestant cemetery in Siemków near the city of Polanica-Zdrój, 50.4225°N, 16.5178°E, alt. 380 m a.s.l., on a gravestone (sandstone) in a patch of an *Orthotricho anomali-Grimmietum pulvinatae* association, leg., det. M. Smoczyk, 29.05.2016, c. spor. (POZG); ATMOS Fb-25: Central Sudetes Mts, Góry Bystrzyckie Mts, north-eastern slope of Mount Kamienna Góra, forest section 67c of the Bystrzyca Kłodzka Forest Inspectorate, 50.3751°N, 16.5003°E, alt. 680 m a.s.l., on a sandstone boulder in a spruce forest, growing alongside *Hypnum cupressiforme*, *Lophozia ventricosa*, *Orthodicranum montanum*, and *Paraleucobryum longifolium*, leg., det. M. Smoczyk, 27.05.2016, c. spor. (POZG); ATMOS Fb-25: Central Sudetes Mts, Góry Bystrzyckie Mts, Zwierzyniec Forest near the village of Nowa Łomnica, forest section 213c of the Bystrzyca Kłodzka Forest Inspectorate, 50.3636°N, 16.5456°E, alt. 430 m a.s.l., on a sandstone boulder in a mixed forest, growing alongside *Hypnum cupressiforme* and *Orthodicranum montanum*, leg., det. M. Smoczyk, 19.08.2016, c. spor. (POZG); ATMOS Fb-34: Central Sudetes Mts, Góry Orlickie Mts, north-eastern slope of Mount Esplanada near the village of Zieleniec, 50.3387°N, 16.3946°E, alt. 855 m a.s.l., on stacked gneissic rocks, leg., det. M. Smoczyk, 27.07.2015 (POZG); ATMOS Fb-38: SW Poland, Eastern Sudetes Mts, Góry Złote Mts, in the village of Nowy Gieraltów, 50.3036°N, 16.9625°E, alt. 590 m a.s.l., on an exposed gneissic boulder at the edge of a mixed forest, leg., det. M. Smoczyk, 16.06.2017, c. spor. (POZG); ATMOS Fb-48: SW Poland, Eastern Sudetes Mts, Góry Złote Mts, Biała Łądecka River valley south of the village of Bielice, 50.2611°N, 16.9907°E, alt. 750 m a.s.l., on gneiss boulders on the right bank of the Biała Łądecka River, leg., det. M. Smoczyk, 16.06.2017, c. spor. (POZG).

*Hedwigia ciliata* is an epilithic moss species that grows on acidic, siliceous rocks in montane areas

in southern Poland, especially in the Sudetes (BERDOWSKI 1974, WILCZYŃSKA 1974, SZMAJDA 1979) and on erratic stones in the northern part of the country (RUSIŃSKA 1981, OCHYRA et al. 1988, WIERZCHOLSKA et al. 2010). This species is known also from the Lublin Upland (ZUBEL 2014). *Hedwigia ciliata* was recorded from the Podlasie Lowland in the northern part of the Białowieża Forest in 1962 by D. Gocławska (Herb. Geobotanical Station in Białowieża). This species was also later recorded by A.W. Sokołowski in 1971 in the Hajnówka Forest (forest compartment No. 214C), by S. Nikitiuk in 1977 near the village of Skupowo Nowe, by K. Karczmarz in 1978 in Waśki (Krzywiec village), and by K. Karczmarz and A.W. Sokołowski in 1981 in the Puszcza Ładzka forest compartment No. 55B (OCHYRA et al. 1988). This species has never been reported from the permanent plots of the 'Crypto' project established by J.B. Faliński in 1978 in the Białowieża Strictly Protected Area (ŻARNOWIEC 1992). All current records describe small patches of this epilithic and light-demanding moss as a sub-dominant admixture among mats and tufts of other bryophytes overgrowing stones.

In the Central and Eastern Sudetes Mountains, *H. ciliata* is known from numerous localities in the Góry Stołowe Mts range (SZMAJDA 1979) as well as from a few localities in the Czech part of the Góry Orlickie Mts (PLÁŠEK et al. 2012), the Śnieżnik massif (only old literature data; ZMRHALOVÁ 2008), and the Rychlebské Hory Mountains (PLÁŠEK et al. 2004). To date, this species has not been recorded from the Polish parts of the Góry Orlickie Mts (STANIASZEK 2004), from the Góry Bystrzyckie Mts, or from the Góry Złote Mts (BERDOWSKI & PISZCZEK 1991).

## 6. *Homalia trichomanoides* (Hedw.) Schimp.

Authors: E. FUDALI, L. ŻOŁNIERZ

ATMOS Eb-47: SW Poland, Silesian Lowland, Wrocław valley, Wrocław city, urban forests situated within the administrative borders of the city, western Wrocław, Ratyń, 51.127829°N, 16.843513°E, wet forest near the Bystrzyca River, bark of many *Fraxinus excelsior* specimens up to 1.5 m above the ground as well as bark of *Acer campestre* and *Quercus petraea*, leg., det. E. Fudali, L. Żołnierz, 8.10.2015 (KRAM); ATMOS Eb-48: SW Poland, Silesian Lowland, Wrocław valley, Wrocław city, urban forests situated within the administrative borders of the city, northern Wrocław, Las Rędziński, 51.165756°N, 16.951927°E, bark of *Acer campestre* up to 1.5 m above the ground, leg., det. E. Fudali, L. Żołnierz, 16.10.2015 (KRAM); western Wrocław, Las Pilczycki, 51.153207°N, 16.955346°E, bark of *Acer campestre* at a height of 0.8–1.5 m above the ground and bark of *Fraxinus excelsior*, leg., det. E. Fudali, L. Żołnierz, 5.10.2015 (KRAM); 51.154493°N, 16.959593°E, quite prevalent on the bark of *Acer campestre* and *Fraxinus excel-*

sior at a height of 0.8–1.5 m above the ground, *leg.*, *det.* E. Fudali, L. Żołnierz, 5.10.2015 (KRAM); western Wrocław, mouth of the Bystrzyca River in the Stabłowice settlement, 51.191210°N, 16.916439°E, bark of *Fraxinus excelsior* at a height of 0.8 m above the ground in a young wet forest, *leg.*, *det.* E. Fudali, L. Żołnierz, 23.10.2015 (KRAM); ATMOS Ec-40: SW Poland, Silesian Lowland, Wrocław valley, Wrocław city, urban forests situated within the administrative borders of the city, eastern Wrocław, Las Wojnów, 51.111655°N, 17.161539°E, wet forest near the river, bark of *Fraxinus excelsior* up to 1.5 m above the ground, *leg.*, *det.* E. Fudali, L. Żołnierz, 18.06.2015 (KRAM).

*Homalia trichomanoides* is an epiphytic-epilithic moss species that occurs in the Silesian Lowland only on deciduous trees. In the second half of the twentieth century, this species was reported from the Silesian Lowland only from forest nature reserves (BERDOWSKI 1966, 1970, BERDOWSKI & KOŁA 1971, WILCZYŃSKA 1974, WILCZYŃSKA & KOŁA 1974–1975a, b). Until 2012, the species was protected by law (ROZPORZĄDZENIE... 2004). This species was reported from the Wrocław environs in the nineteenth century (MILDE 1869), but its last record from there is dated 1955 (*leg.*, *det.* Z. and O.M. Bednarczyk, 23.03.1955, herbarium WR). The species was then found on deciduous trees in forests situated in eastern Wrocław, near the settlement of Swojec and the Odra River. The stations presented show that the species still occurs in quite abundant populations in forests surrounding Wrocław. This species has not migrated to the city (FUDALI 2012).

7. *Lophozia longidens* (Lindb.) Konst. et Vilnet  
[= *Lophozia longidens* (Lindb.) Macoun]

Author: M. SMOCZYK

ATMOS Fb-25: SW Poland, Central Sudetes Mts, Góry Bystrzyckie Mts, north-eastern slope of Mt Kamienna Góra, forest section 66s of the Bystrzyca Kłodzka Forest Inspectorate, 50.3769°N, 16.5009°E, alt. 620 m a.s.l., on a sandstone boulder in a spruce forest growing in a *Hypnum cupressiforme* mat, with small admixture of *Orthodicranum montanum* and *Paraleucobryum longifolium*, *leg.*, *det.* M. Smoczyk, 27.05.2016, *conf.* P. Górski (POZG).

*Lophozia longidens* is a rare mountain liverwort in Poland (SZWEJKOWSKI 2006). This species was recently recorded in the Tatra Mts (GÓRSKI & VÁŇA 2014) and Babia Góra massif (KLAMA 2013). There are some historical records from the Central and Eastern Sudetes Mts (SZWEJKOWSKI 1953, 1969). However, there are no new data from the Polish part of the Sudetes Mts, and this species has not been recorded in the Góry Bystrzyckie Mts thus far (KOŁA 1967).

8. *Obtusifolium obtusum* (Lindb.) S.W. Arnell [= *Lophozia obtusa* (Lindb.) A. Evans]

Author: P. GÓRSKI

SLOVAKIA: BELIANSKIE TATRA MOUNTAINS, 34UDV3856, Západné Belianske Tatry, Medzistenná dolina valley, 49.25942°N, 20.15993°E, near unmarked path, on decaying log, *leg.*, *det.* P. Górski, 5.11.2015 (POZNB 1991); HIGH TATRA MOUNTAINS, MGRS 34UDV3753, Skupina Širokej, lower part of the Svišťovská dolina valley, 49.22831°N, 20.13996°E, alt. 1345 m a.s.l., calcareous rocks, on humus, *leg.*, *det.* P. Górski, 6.11.2015 (POZNB 2061); WESTERN TATRA MOUNTAINS, MGRS 34UDV0757, Skupina Osobitej-Bobrovca, Suchá dolina valley, upper part of Široký žľab gully, 49.26485°N, 19.72519°E, alt. 1385 a.s.l., wet tall-herb communities, *leg.*, *det.* P. Górski, 24.09.2015 (POZNB 2060).

*Obtusifolium obtusum* is relatively rare in the Tatra Mts. In the Slovakian part of this massif, where the presented data were found, there are 31 localities of this plant (GÓRSKI & VÁŇA 2014). In Slovakia, *O. obtusum* is red listed as category NT (KUBINSKÁ et al. 2001). In the entire area of the Tatra Mts, 48 localities of *O. obtusum* have been recorded within an altitude range of 800–1900 m a.s.l. (GÓRSKI & VÁŇA 2014).

9. *Odontoschisma elongatum* (Lindb.) A. Evans

Author: P. GÓRSKI

ATMOS Ge-50, High Tatra Mountains, 34UDV2753, Graň Orlej Perci, Dolina Gašienicowa valley: near Czerwone Stawki lakes, 49.22743°N, 20.00405°E, *leg.*, *det.* P. Górski, 15.08.2013 (POZNB 2260); near Kurtkowiec lake, alt. 1685 m a.s.l., *leg.*, *det.* P. Górski, 30.06.2010 (KRAM, POZNB 192).

*Odontoschisma elongatum* is rare high-alpine peat-bog species, known from Poland only from eight localities located in the High Tatra Mts (LILIEFELDÓWNA 1914a, b, SZWEJKOWSKI 1960, CHUDZIŃSKA et al. 2001, GÓRSKI & VÁŇA 2014). The presented new localities come from one high-mountain valley and are not far apart. One of them (near the Czerwone Stawki lakes) confirms the presence of this plant in one stand for more than 100 years. *Odontoschisma elongatum* was observed at that location in 1912 by LILIEFELDÓWNA (1914a, b); in the original paper, the data were assigned to *O. denudatum* but undoubtedly refer to *O. elongatum*.

10. *Orthodicranum tauricum* (Sapjegin) Smirnova

Authors: E. FUDALI, L. ŻOŁNIERZ

ATMOS Eb-48: SW Poland, Silesian Lowland, Wrocław valley, Wrocław city, urban forests situated within the administrative borders of the city; western Wrocław, Leśnica, 51.162795°N, 16.8376°E, bark of *Betula pendula* at a height of 1.0–2.5 m, *leg.*, *det.*

E. Fudali, L. Żołnierz, 8.10.2015 (KRAM); northern Wrocław, Las Rzędziński, 51.165756°N, 16.951927°E, bark of *Tilia cordata* at a height 1.4 m above the ground, leg., det. E. Fudali, L. Żołnierz, 8.10.2015 (KRAM); north-western Wrocław, Rędzin, 51.174516°N, 16.938653°E, bark of *Quercus robur* at a height of more than 1.2 m above the ground, leg., det. E. Fudali, L. Żołnierz, 8.10.2015 (KRAM); ATMOS Eb-49: SW Poland, Silesian Lowland, Wrocław valley, Wrocław city, urban forests situated within the administrative borders of the city, north-western Wrocław, Las Mokrzański, 51.15798°N, 16.869286°E, bark of *Betula pendula* at a height 0.8–1.5 m above the ground, leg., det. E. Fudali, L. Żołnierz, 5.10.2015 (KRAM); 51.163959°N, 16.851862°E, bark of *Robinia pseudoacacia* and *Quercus robur* at a height more than 1 m above the ground, leg., det. E. Fudali, L. Żołnierz, 5.10.2015 (KRAM); ATMOS Ec-40: SW Poland, Silesian Lowland, Wrocław valley, Wrocław city, urban forests situated within the administrative borders of the city, eastern Wrocław, Las Strachociński, 51.093392°N, 17.1437°E, bark of *Betula pendula* at a height 0.8–1.5 m above the ground, leg., det. E. Fudali, L. Żołnierz, 24.10.2015 (KRAM).

Although this expansionist species is currently known in Poland from more than 200 localities (STEBEL et al. 2012) situated throughout the country, its distribution in the Silesian Lowland seems to be little recognized. Thus far, the species has been reported only from six sites in that region (STEBEL et al. 2012, GÓRSKI et al. 2016).

### 11. *Porella platyphylla* (L.) Pfeiff.

Authors: S. WIERZCHOLSKA, M.K. DYDERSKI

ATMOS Cg-55: NE Poland, Podlasie Lowland, Bielska Plain, Białowieża Forestry, Forest compartment No. 396C, 52.71339°N, 23.78419°E, alt. 171 m a.s.l., extensive patch of 450 cm<sup>2</sup> on the bark of *Carpinus betulus* (40 cm above the ground to 450 cm along the trunk) in a *Tilio-Carpinetum* community. Accompanying species included *Homalothecium sericeum*, *Metzgeria furcata*, *Radula complanata*, *Hypnum cupressiforme* var. *filiforme*, and *Lejeunea cavifolia*, leg., det. S. Wierzcholska, 27.04.2016; NE Poland, Podlasie Lowland, Bielska Plain, Białowieża National Park Strictly Protected Area, 52.7344°N, 23.8477°E, alt. 155 m a.s.l., extensive patch of 3120 cm<sup>2</sup> on the bark of *Tilia cordata* (10 cm above the ground to 280 cm along the trunk) in a *Tilio-Carpinetum* community. Accompanying species included *Homalia trichomanoides*, *Metzgeria furcata*, *Brachythecium salebrosum*, *Neckera complanata*, *Isothecium alopecuroides*, and *Anomodon viticulosus*, leg., det. S. Wierzcholska, 16.06.2016 (BSG, POZG); NE Poland, Podlasie Lowland, Bielska Plain, Białowieża National Park Strictly Protected Area, 52.7393°N, 23.8880°E, alt. 158 m a.s.l., extensive patch of 400 cm<sup>2</sup> on the bark of *Carpinus betulus* (40 cm above the ground to 63

cm along the trunk) in a *Tilio-Carpinetum* community. Accompanying species included *Brachythecium salebrosum*, *Hypnum cupressiforme* var. *filiforme*, *Isothecium alopecuroides*, and *Plagiomnium cuspidatum*, leg., det. S. Wierzcholska, 16.06.2016 (BSG, POZG); NE Poland, Podlasie Lowland, Bielska Plain, Białowieża National Park Strictly Protected Area, 52.7393°N, 23.8880°E, alt. 158 m a.s.l., extensive patch of 1100 cm<sup>2</sup> on the bark of *Carpinus betulus* (40 cm above the ground to 182 cm along the trunk) in a *Tilio-Carpinetum* community. Accompanying species included *Homalothecium sericeum*, *Anomodon viticulosus*, *Neckera complanata*, *Homalia trichomanoides*, *Anomodon longifolius*, and *Plagiomnium cuspidatum*, leg., det. S. Wierzcholska, 16.06.2016 (BSG, POZG); ATMOS Cg-56: NE Poland, Podlasie Lowland, Bielska Plain, Białowieża National Park Strictly Protected Area, 52.7402°N, 23.8933°E, alt. 156 m a.s.l., extensive patch of 1400 cm<sup>2</sup> on the bark of *Carpinus betulus* (94 cm above the ground to 360 cm along the trunk) in a *Tilio-Carpinetum* community. Accompanying species included *Neckera complanata*, *N. pennata*, *Homalia trichomanoides*, *Eurhynchium angustirete*, and *Hypnum cupressiforme*, leg., det. S. Wierzcholska, 16.06.2016 (BSG, POZG); 52.7401°N, 23.8930°E, alt. 156 m a.s.l., extensive patch of 2450 cm<sup>2</sup> on the bark of *Carpinus betulus* (94 cm above the ground to 360 cm along the trunk) in a *Tilio-Carpinetum* community. Accompanying species included *Neckera complanata*, *N. pennata*, *Homalothecium sericeum*, *Homalia trichomanoides*, *Eurhynchium angustirete*, and *Hypnum cupressiforme*, leg., det. S. Wierzcholska, 16.06.2016 (BSG, POZG); ATMOS Cg-65: NE Poland, Podlasie Lowland, Bielska Plain, Białowieża National Park, Białowieża Palace Park, 52.70201°N, 23.84566°E, alt. 151 m a.s.l., a patch of 220 cm<sup>2</sup> on the bark of the base of *Fraxinus excelsior* (40 cm above the ground). Accompanying species included *Homalothecium sericeum*, *Metzgeria furcata*, *Radula complanata*, *Hypnum cupressiforme* var. *filiforme*, *Leucodon sciuroides*, *Rosulabryum moravicum*, *Frullania dilatata*, and *Lejeunea cavifolia*, leg., det. M.K. Dyderski, conf. S. Wierzcholska, 12.03.2016 (BSG); ATMOS Ed-35: Central Poland, Bełchatów high plain, Bełchatów post-mining site, spoil heap of lignite mine, 51.222703°N, 19.406400°E, very small patch of 4 cm<sup>2</sup> on the bark of *Populus × canadensis* 'Serotina' in a *Robinia pseudoacacia* stand, det. M.K. Dyderski, 9.09.2016; 51.230021°N, 19.402372°E, very small patch of 5 cm<sup>2</sup> on the bark of *Robinia pseudoacacia* in a *Robinia pseudoacacia* stand, det. M.K. Dyderski, 9.09.2016; 51.229766°N, 19.413750°E, very small patch of 4 cm<sup>2</sup> on the bark of *Quercus robur* in a *Quercus robur* stand, det. M.K. Dyderski, 10.09.2016 (BSG).

*Porella platyphylla* is an endangered (category E) liverwort species (KLAMA 2006) and is protected by law in Poland. This species occurs on the bark of deciduous tree species in broadleaf forests and on calcareous rocks in Poland (SZWEYKOWSKI 1958, KOŁA

1972, ZUBEL 2002, STEBEL et al. 2003, BERDOWSKI 2004, RUSIŃSKA et al. 2010, GÓRSKI 2013, GÓRSKI & VÁŇA 2014, KLAMA 2016, PAWLIKOWSKI & TOPOLSKA 2016, SMOCZYK 2016). *Porella platyphylla* was recorded from the Białowieża Forest (Puszcza Ładzka) by BŁOŃSKI and DRYMMER (1889), but since then, despite numerous bryological investigations, this species has been reported only once by STEBEL et al. (2003) from two localities as an epiphyte growing on the bark of *Acer platanoides*, *Carpinus betulus*, and *Tilia cordata*. Our locality revealed a new type of substrate for Białowieża records – the bark of *Fraxinus excelsior*. Moreover, all records from Białowieża Forest represented voluminous patches on old trees and occurred in semi-shaded habitats, both in the national park and outside the protected area. However, the new findings in the Bełchatów post-mining site in Central Poland represent very small patches growing on the bark of both *Quercus robur* and an alien tree species – *Robinia pseudoacacia*. The Bełchatów post-mining site has been almost completed afforested for ca. 30 years and was designed as an anti-erosion forest to overgrow the spoil heap that consists of mostly toxic tertiary substrates (JAGODZIŃSKI & KAŁUCKA 2010). These new localities show restoration potential for post-mining site afforestation. However, the presence of *P. platyphylla* could also result from the habitat connectivity with surrounding old forests, similar to the high species richness of vascular plants in this area (JAGODZIŃSKI et al. 2015).

### 11. *Porella platyphylla* (L.) Pfeiff.

Author: M. SMOCZYK

ATMOS Fb-37: SW Poland, Eastern Sudetes Mts, Śnieżnik massif (Masyw Śnieżnika), Krowiarki, the former village of Rogózka, near an abandoned quarry on the south-western slope of Mount Wapnisko, 50.2875°N, 16.8103°E, alt. 600 m a.s.l., limestone rock outcrop in a beech forest, growing alongside *Homalothecium sericeum*, *Leucodon sciuroides*, and *Plagiochila porelloides*, leg., det. M. Smoczyk, 26.06.2016 (POZG); SW Poland, Eastern Sudetes Mts, Śnieżnik massif, in the city of Stronie Śląskie, by the Morawka River in the city park, 50.2919°N, 16.8746°E, alt. 495 m a.s.l., on the bark of *Acer platanoides*, dense patch along the trunk at a height of 0.6 to 2.8 m above the ground with southern exposure, growing alongside *Hypnum cupressiforme*, *Leucodon sciuroides*, *Platygyrium repens*, *Radula complanata*, and *Syntrichia virescens*, leg., det. M. Smoczyk, 3.09.2016 (POZG); ATMOS Fb-47: SW Poland, Eastern Sudetes Mts, Śnieżnik massif, in the village of Kletno, 50.2573°N, 16.8575°E, alt. 630 m a.s.l., on the bark of *Acer platanoides* with south-eastern exposure (1.3 m to ca. 4 m along the trunk), growing alongside *Metzgeria furcata*, *Frullania dilatata*, *Radula complanata*, *Leucodon sciuroides*, *Orthotrichum speciosum*, *O. striatum*, *Platygyrium repens*,

and *Pterigynandrum filiforme*, leg., det. M. Smoczyk, 12.07.2016 (POZG); ATMOS Fb-47: Eastern Sudetes Mts, Śnieżnik massif, bank of the Kleśnica River in the village of Kletno, 50.2453°N, 16.8536°E, alt. 670 m a.s.l., on the stump of *Acer pseudoplatanus*, growing alongside *Amblystegium serpens*, *Orthotrichum affine*, *Pylaisia polyantha*, and *Radula complanata*, leg., det. M. Smoczyk, 12.07.2016 (POZG).

In the Eastern Sudetes Mts, *Porella platyphylla* has been recorded only from single localities in the Śnieżnik massif (MILDE 1854, WILCZYŃSKA 1988, ZMRHALOVÁ 2008) and in the Góry Białskie Mountains (KOŁA 1972).

### 12. *Syntrichia papillosa* (Wilson) Jur.

Author: E. FUDALI

ATMOS Eb-59: SW Poland, Silesian Lowland, Wrocław valley, Wrocław city, Krzyki district; Park Skowroni municipal park, 51.07889°N, 17.127177°E, bark of old *Fraxinus excelsior* 2.3 m in girth situated on the path at a height 1.2 m above the ground, leg., det. E. Fudali, 12.05.2015 (KRAM).

*Syntrichia papillosa* is an epiphytic moss that occurs on mature deciduous tree species and that sometimes is found on mortar or calcareous rocks. Until 2012, the species was protected by law (ROZPORZĄDZENIE... 2004). ŻARNOWIEC et al. (2004) classified this species as a taxon that exists in small populations that are not currently endangered or vulnerable but are at risk. This species occurs infrequently throughout Poland (WILCZYŃSKA 1974, RUSIŃSKA 1981, STEBEL 1997, 2006, FOJCIK 2011, WILHELM et al. 2015, ZUBEL et al. 2015) with the exceptions of Beskid Makowski, Beskid Wyspowy, and Beskid Wysoki, where it occurs quite frequently but mostly on rocks and walls (STEBEL 2006). In the nineteenth century, the species was reported from the Wrocław environs (MILDE 1869), but since then it has not been found. This is the first observation in more than 100 years of records of the species in Wrocław and the Silesian Lowland.

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- For citation (1):** GÓRSKI P., FUDALI E., ŻOŁNIERZ L., SMOCZYK M., WIERZCHOLSKA S., ROSADZIŃSKI S., DYDERSKI M.K. (2017): New distributional data on bryophytes of Poland and Slovakia, 10. *Steciana* 21(2): 59–68. doi: 10.12657/steciana.021.007
- For citation (2):** SMOCZYK M. (2017): *Porella platyphyllo* (L.) Pfeiff. In: P. Górski, A. Rusińska (eds). New distributional data on bryophytes of Poland and Slovakia, 10. *Steciana* 21(2): 64. doi: 10.12657/steciana.021.007

LIST OF BRYOPHYTES PUBLISHED IN “NEW DISTRIBUTIONAL DATA  
ON BRYOPHYTES OF POLAND (AND SLOVAKIA)”, PARTS 1–10

BIBLIOGRAPHIC DATA SOURCES. EXPLANATIONS:

- NDDBP(S) – New distributional data on bryophytes of Poland (and Slovakia); 1, 2, ... – successive number of NDDBP(S)
- NDDBP, 1: 2014, Steciana 18(2): 77–87; NDDBP, 2: 2015, Steciana 19(2): 55–65; NDDBPS, 3: 2015, Steciana 19(3): 163–176; NDDBP, 4: 2015, Steciana 19(4): 221–230; NDDBPS, 5: 2016, Steciana 20(1): 33–44; NDDBPS, 6: 2016, Steciana 20(2): 85–92; NDDBPS, 7: 2016, Steciana 20(3): 117–127; NDDBPS, 8: 2016, Steciana 20(4): 191–200; NDDBPS, 9: 2017, Steciana 21(1): 31–40; NDDBPS, 10: 2017, Steciana 21(2): 59–68.

LIST OF SPECIES

*Amblystegium radicale* (P. Beauv.) Schimp. – 7; *Anastrophyllum hellerianum* (Nees ex Lindenb.) R.M. Schust. – 1, 5; *A. michauxii* (F. Weber) H. Buch – 5, 8; *Anomodon attenuatus* (Hedw.) Huebener – 10; *A. viticulosus* (Hedw.) Hook. & Taylor – 10; *Barbilophozia atlantica* (Kaal.) Müll. Frib. – 1; *B. barbata* (Schmidel ex Schreb.) Loeske – 9; *B. binsteadii* (Kaal.) Loeske – 7; *B. kunzeana* (Huebener) Müll. Frib. – 7; *Bazzania trilobata* (L.) Gray – 2; *Buckiella undulata* (Hedw.) Ireland – 3; *Bucklandiella microcarpa* (Hedw.) Bednarek-Ochyra & Ochyra – 1; *Buxbaumia aphylla* Hedw. – 2; *B. viridis* (Moug. ex Lam. & DC.) Brid. ex Moug. & Nestl. – 3; *Calypogeia azurea* Stotler & Crotz – 1; *C. neesiana* (C. Massal. et Carestia) Müll. Frib. – 4; *Campylopus flexuosus* (Hedw.) Brid. – 9; *C. introflexus* (Hedw.) Brid. – 1, 2, 3, 4, 5, 7, 8; *C. pyriformis* (Schultz) Brid. – 3, 5, 7; *Cephalozia ambigua* C. Massal. – 3; *C. catenulata* (Huebener) Lindb. – 1; *C. loitlesbergeri* Schiffn. – 1; *C. macrostachya* Kaal. – 2, 4, 5, 8; *Cephaloziella elachista* (J.B. Jack ex Gottsche et Rabenh.) Schiffn. – 2, 4, 7, 8; *C. hampeana* (Nees) Schiffn. – 1; *C. spinigera* (Lindb.) Warnst. – 4; *Cinclidotus fontinaloides* (Hedw.) P. Beauv. – 8; *Cladopodiella fluitans* (Nees) H. Buch – 2, 4, 5; *Cololejeunea calcarea* (Lib.) Schiffn. – 8; *Conocephalum salebrosum* Szweykowski, Buczkowska & Odrzykoski – 3, 9; *Conostomum tetragonum* (Hedw.) Lindb. – 3; *Crossocalyx hellerianus* (Nees ex Lindenb.) Meyl. – 1, 5; *Dicranum viride* (Sull. & Lesq.) Lindb. – 8, 10; *Didymodon spadiceus* (Mitt.) Limpr. – 8, 9; *Diplophyllum albicans* (L.) Dumort. – 2; *Distichium capillaceum* (Hedw.) Bruch & Schimp. – 1; *Entodon concinnus* (De Not.) Paris – 2; *Ephemerum serratum* var. *angustifolium* (Bruch & Schimp.) Bruch & Schimp. – 1; *Eucladium verticillatum* (Hedw. ex Brid.) Bruch & Schimp. – 9; *Fissidens dubius* P. Beauv. var. *mucronatus* (Breidl. ex Limpr.) Karttunen, Hedenäs & Söderström – 8; *Fossombronina foveolata* Lindb. – 3, 4, 5; *F. wondraczekii* (Corda) Lindb. – 8; *Frullania dilatata* (L.) Dumort. – 7, 9; *F. tamarisci* (L.) Dumort. – 2, 4; *Fuscocephaloziopsis catenulata* (Huebener) Váňa et L. Söderstr. – 1; *F. loitlesbergeri* (Schiffn.) Váňa et L. Söderstr. – 1; *F. macrostachya* (Kaal.) Váňa et L. Söderstr. – 2, 4, 5, 8; *Geocalyx graveolens* (Schrad.) Nees – 2; *Gymnomitrium alpinum* (Gottsche ex Husn.) Schiffn. – 10; *Hamatocaulis vernicosus* (Mitt.) Hedenäs – 3, 9; *Harpanthus flotovianus* (Nees) Nees – 9; *Hedwigia ciliata* (Hedw.) P. Beauv. – 1, 10; *Helodium blandowii* (F. Weber & D. Mohr) Warnst. – 1, 2, 3, 4; *Heterogemma laxa* (Lindb.) Konstant. & Vilnet – 2; *Homalia trichomanoides* (Hedw.) Schimp. – 10; *Hookeria lucens* (Hedw.) Sm. – 2; *Hymenostylium recurvirostrum* (Hedw.) Dixon – 9; *Hypnum cupressiforme* Hedw. var. *subjulaceum* Molendo – 8; *Hypnum imponens* Hedw. – 4; *H. pratense* W.D.J. Koch ex Spruce – 3, 4; *Isopterygiopsis pulchella* (Hedw.) Z. Iwats. – 2; *Kiaeria falcata* (Hedw.) I. Hagen – 5; *K. starkei* (F. Weber & D. Mohr) I. Hagen – 6; *Kurzia pauciflora* (Dicks.) Grolle – 4, 7; *Leskeella nervosa* (Brid.) Loeske – 4; *Lophozia ascendens* (Warnst.) R.M. Schust. – 8; *L. excisa* (Dicks.) Dumort. – 2; *L. heterocolpos* (Thed. ex Hartm.) M. Howe – 8; *L. laxa* (Lindb.) Grolle – 2; *L. longidens* (Lindb.) Macoun – 10; *L. obtusa* (Lindb.) A. Evans – 10; *Lophoziopsis excisa* (Dicks.) Konst. et Vilnet – 2; *L. longidens* (Lindb.) Konst. et Vilnet – 10; *Marsupella alpina* (Gottsche ex Husn.) Bernet – 10; *Mesoptychia heterocolpos* (Thed. ex Hartm.) L. Söderstr. et Váňa – 8; *Nowellia curvifolia* (Dicks.) Mitt. – 1, 2, 3, 4, 8; *Obtusifolium obtusum* (Lindb.) S.W. Arnell – 10; *Odontoschisma denudatum* (Mart.) Dumort. – 1; *O. elongatum* (Lindb.) A. Evans – 10; *O. fluitans* (Nees) L. Söderstr. et Váňa – 2, 4, 5; *Orthocaulis atlanticus* (Kaal.) H. Buch – 1; *O. binsteadii* (Kaal.) H. Buch – 7; *Orthodicranum tauricum* (Sapjegin) Smirnova – 3, 5, 10; *Orthodontium lineare* Schwägr. – 3, 7; *Orthotrichum cupulatum* Hoffm. ex Brid. – 7; *O. pulchellum* Brunt. in Sm. – 2; *Pallavicinia lyellii* (Hook.) Carruth. – 1; *Paludella squarrosa* (Hedw.) Brid. – 5; *Pohlia ludwigii* (Spreng. ex Schwägr.) Broth. – 3, 9; *Porella arboris-vitae* (With.) Grolle – 2; *P. platyphylla* (L.) Pfeiff. – 7, 10; *Preissia quadrata* (Scop.) Nees – 5; *Pseudotaxiphyllum elegans* (Brid.) Z. Iwats. – 3; *Rhytidiadelphus loreus* (Hedw.) Warnst. – 8; *Riccardia latifrons* (Lindb.) Lindb. – 9; *Riccia cavernosa* Hoffm. – 1; *Ricciocarpos natans* (L.) Corda – 3, 4; *Saccobasis polita* (Nees) H. Buch – 8; *Schljakovia kunzeana* (Huebener) Konst. et Vilnet – 7; *Sciuro-hypnum plumosum* (Hedw.) Ignatov & Huttunen – 1; *Scorpidium scorpioides* (Hedw.) Limpr. – 7, 9; *Seligeria calcarea* (Hedw.) Bruch & Schimp. – 3; *Sphagnum balticum* (Russow) C.E.O. Jensen – 3; *S. fuscum* (Schimp.) H. Klinggr. – 9; *S. molle* Sull. – 3; *S. russowii* Warnst. – 2; *S. tenellum* (Brid.) Pers. ex Brid. – 1; *Splachnum ampullaceum* Hedw. – 1; *Syntrichia laevipila* Brid. – 1; *S. latifolia* (Bruch ex Hartm.) Huebener – 1; *S. papillosa* (Wilson) Jur. – 10; *Taxiphyllum wissgrillii* (Garov.) Wijk & Margad. – 3; *Thamnobryum alopecurum* (Hedw.) Gangulee – 1, 2; *Tomentypnum nitens* (Hedw.) Loeske – 1, 2, 3, 4, 5, 9; *Tortula latifolia* Bruch ex Hartm. – 1; *Trichocolea tomentella* (Ehrh.) Dumort. – 1, 3, 7, 8; *Tritomaria exsecta* (Schmidel) Schiffn. ex Loeske – 3; *T. polita* (Nees) Jörg. – 8; *Ulota bruchii* Hornsch ex Brid. – 3.