

REDISCOVERY OF THE EPIPHYTIC MOSS *ULOTA COARCTATA* (ORTHOTRICHACEAE) IN POLAND

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Abstract. *Uloa coarctata* (P. Beauv.) Hammar was recently collected in Poland after more than half a century. This epiphytic moss was found at four localities in the Pojezierze Lubuskie lakeland in the western part of the country. Its diagnostic features are briefly presented, its habitat requirements are considered, the historical and recent findings of the species in Poland are discussed, and its distribution is mapped. It is suggested that the species status should be changed from ‘endangered’ to ‘critically endangered’ on the red list of mosses in Poland.

Key words: Bryophyta, distribution, epiphytes, extinct species, Musci, Pojezierze Lubuskie lakeland, red list, threatened species

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INTRODUCTION

The moss genus *Uloa* Mohr includes six species in Poland (Ochyra & Bednarek-Ochyra 1991; Ochyra *et al.* 2003). One additional species, formerly placed in this genus as *U. phyllantha* Brid., was recently placed in the new genus *Plenogemma* Plášek, Sawicki & Ochyra (Plášek *et al.* 2015). Most species of *Uloa* are epiphytes; only a few are associated with saxicolous habitats. According to the latest red list of Polish mosses, all species of *Uloa* are considered threatened (Żarnowiec *et al.* 2004). *Uloa bruchii* Brid. and *U. crispa* (Hedw.) Brid. are in category V (vulnerable), and *U. coarctata* (P. Beauv.) Hammar, *U. drummondii* (Hook. & Grev.) Brid. and *U. hutchinsiae* (Sm.) Hammar are in category E (endangered). *Uloa rehmannii* Jur., originally described from the Polish Tatras (Juratzka 1864), is listed as extinct (Ex), since it has not been rediscovered at the *locus classicus* since the late 1870s (Chałubiński 1886; Ochyra & Cisło 1999).

Although *U. coarctata* was classified as an endangered species, it had not been recorded for over half a century in Poland, so it should have been considered extinct or nearly so in this country. During bryofloristic fieldwork in Western Poland,

however, this species was repeatedly collected in 2013, 2015 and 2016 in the Pojezierze Lubuskie lakeland. In view of its local occurrence and the small size of its populations, at present it would be appropriate to consider *U. coarctata* critically endangered in Poland.

Uloa coarctata is a very rare epiphytic species in other Central European countries and regions as well (cf. Kubinská *et al.* 2001; Sauer 2001; Lauer 2005; Meinunger & Schröder 2007; Zechmeister *et al.* 2013). As in Poland, the species was rediscovered after a long time in Germany and in the Czech Republic only a few years ago (Frahm 2004; Soldán & Buryová 2001; Daute & Fürstenow 2011).

DIAGNOSTIC FEATURES

Uloa coarctata is an epiphytic moss reaching ca 1 cm in height. The plants form loose, dull green, yellowish or brownish tufts. The leaves are only slightly twisted when dry, patent when moist, ca 3 mm long and taper to a rather blunt tip. The species frequently produces narrowly pyriform,



Fig. 1. Single shoot of *Uloata coarctata* (P. Beauv.) Hammar (photo V. Plášek).



Fig. 2. Patch of *Uloata coarctata* (P. Beauv.) Hammar on bark of *Quercus petraea* in the forest section 727a of Rzepin Forest Inspectorate, 2.6 km SE of Rzepin (photo M. Smoczyk).

pale brown capsules which are almost entirely smooth and contracted at the mouth (cf. Sauer 2001). The exothecial bands are noticeable only immediately below the mouth. The peristome teeth are whitish and the calyptra is densely hairy.

Uloata coarctata is easily differentiated from other species in Central Europe by its pale, nar-

rowly pyriform capsules having a very small mouth (Figs 1 & 2).

DISTRIBUTION OF *ULOATA COARCTATA* IN POLAND

All records of *U. coarctata* from Poland are included below, divided into historical collections arranged chronologically on the basis of the specimens in BP, KRAM, POZG, WA, WRSL and ZAMU; details of a specimen from a single locality for which no collecting date was available on the label; and the latest collection records of *U. coarctata* from western Poland. A further list is based on literature records for which no voucher collections have been located.

The distribution of *U. coarctata* in Poland is presented on a map in ATMOS grid squares (Fig. 3). It comprises all localities where the species was recorded in three periods: pre-1900, 1901–1945, and from 1945 onwards. The dots on the map correspond to the localities listed below.

HISTORICAL LOCALITIES

1. KARPATY ZACHODNIE [= Western Carpathians], Tatra Mts: 'E sylvis infraalpinis Tatorum', 1844, *leg. [J.] Łoborzewski*, rev. R. Ochyra & V. Plášek (WA #37506). ATMOS grid square: Gd–59.

2. SUDETY ZACHODNIE [= Western Sudetes], Karkonosze range [= Giant Mts]: Karpacz (*Germ.* Krummhübel), on beech tree, 21.VII.1866, *leg. G. Limpricht*, rev. R. Ochyra (BP-Limpricht #43254). ATMOS grid square: Eb–80.

3. SUDETY ZACHODNIE [= Western Sudetes], Karkonosze range [= Giant Mts]: Karpacz (*Germ.* Krummhübel), on bark of *Fagus sylvatica* L., 1.VIII.1866, *leg. G. Limpricht* [*Bryotheca Silesiaca* No. 65], rev. V. Plášek & R. Ochyra (BP-Limpricht #8342 & 43262, KRAM B-219725; WRSL #245006, 77892 & 77893). ATMOS grid square: Eb–80.

4. SUDETY ZACHODNIE [= Western Sudetes], Karkonosze range [= Giant Mts]: Kocioł Łomniczy (Germ. Melzerggrund), on *Sorbus*, 2.VIII.1866, *leg. G. Limpricht*, rev. R. Ochyra (BP-Limpricht #43352). ATMOS grid square: Ea–89.

5. KARPATY ZACHODNIE [= Western Carpathians], Obniżenie Orawsko-Podhalańskie [= Orawa-Podhale Depression], Rów Podtatrzański [= Subtatra Trough]: Zakopane, 1867, *leg. A. Rehman*, rev. V. Plášek (KRAM B-1534, WA #37505). ATMOS grid square: Gd–59.

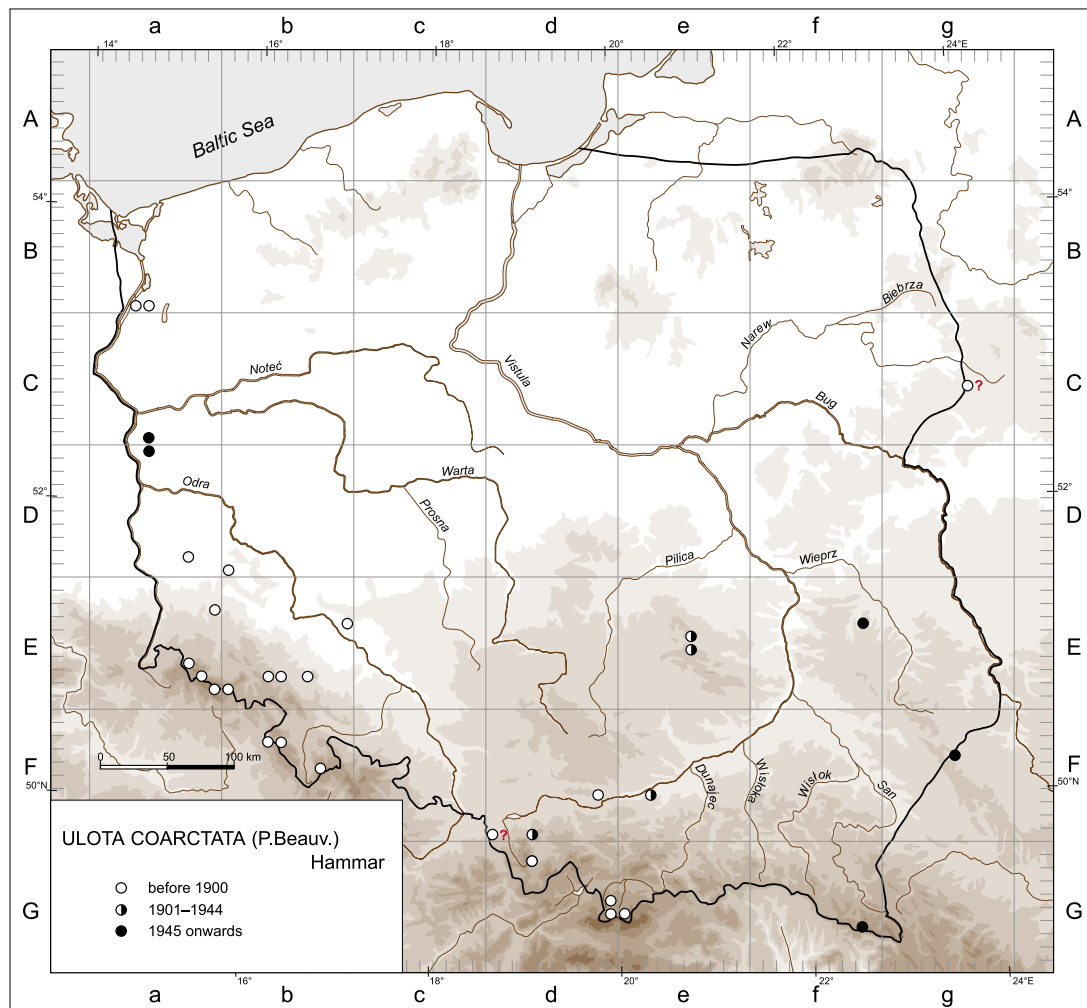


Fig. 3. Distribution map for *Uloata coarctata* (P. Beauv.) Hammar in Poland.

NOTE. In KRAM there are two specimens collected by Rehman in the Tatras with the following label data, but unfortunately without the collecting date: (1) lasy Tatr [= forests of the Tatras] (KRAM B-26517) and (2) Zakopane, auf Nadelbäumen, in Wälder der Tatra (KRAM B-2338). Probably these are duplicates of the same collection.

6. SUDETY ZACHODNIE [= Western Sudetes], Pogórze Kaczawskie foothills: Bolesławiec (*Germ.* Bunzlau), 05.IX.1868, *leg.* G. Limpricht, rev. R. Ochyra (BP-Limpricht #27526). ATMOS grid square: Ea-29.

7. KARPATY ZACHODNIE [= Western Carpathians], Tatra Mts: Równia Gąsienicowa, 17.VIII.1876, *leg.* T. Chalubiński, rev. R. Ochyra & V. Plášek (KRAM

B-123683, WA #37496 & 37501, ZAMU). ATMOS grid square: Ge-50.

8. KARPATY ZACHODNIE [= Western Carpathians], Pogórze Spisko-Gubałowskie foothills: Gubałówka, 26.VIII.1876, *leg.* T. Chalubiński, rev. R. Ochyra & V. Plášek (WA #37495). ATMOS grid square: Gd-49.

9. KARPATY ZACHODNIE [= Western Carpathians], Tatra Mts: Regle [= forest belt] above Dolina Strążyska valley, 16.VIII.1877, *leg.* T. Chalubiński, rev. R. Ochyra & V. Plášek (KRAM B-123672, WA #37503, ZAMU). ATMOS grid square: Gd-59.

10. PÓLNOČNE PODKARPACIE [= Northern Subcarpathia], Brama Krakowska [= Kraków Gate]: Piekary near Tyniec (now within Kraków city limits), X.1877,

leg. J. Krupa, rev. V. Plášek (KRAM B-1429 & 2172). ATMOS grid square: Fd-68.

11. KARPATY ZACHODNIE [= Western Carpathians], Beskidy Zachodnie [= Western Beskidy], Beskid Żywiecki: Radziechowy, VIII.1878, leg. J. Krupa, rev. V. Plášek (KRAM B-2462) – mixed collection, together with *Dorcadion affine* (Brid.) Lindb., *D. speciosum* (Nees) Lindb., *D. striatum* (Hedw.) Lindb. and *Orthotrichum stramineum* Brid. ATMOS grid square: Gd-13.

12. KARPATY ZACHODNIE [= Western Carpathians], Tatra Mts: Dolina Rostoki valley towards a waterfall, 5.VIII.1878, leg. T. Chalubiński, rev. R. Ochyra & V. Plášek (KRAM B-125530, WA #37504, ZAMU) – mixed collection, together with *Codriophorus acicularis* (Hedw.) Bednarek-Ochyra & Ochyra. ATMOS grid square: Ge-50.

13. KARPATY ZACHODNIE [= Western Carpathians], Obniżenie Orawsko-Podhalańskie [= Orawa-Podhale Depression], Rów Podtatrzański [= Subtatra Trough]: Zakopane, forest between Bystre and Pardołówka, 04.IX.1878, leg. T. Chalubiński, rev. R. Ochyra & V. Plášek (KRAM B-123687, WA #37499, ZAMU). ATMOS grid square: Ge-50.

14. KARPATY ZACHODNIE [= Western Carpathians], Obniżenie Orawsko-Podhalańskie [= Orawa-Podhale Depression], Rów Podtatrzański [= Subtatra Trough]: Zakopane: in forest beyond Kacprostwo towards 'regle' [= forest belt], 24.VII.1879, leg. T. Chalubiński, rev. R. Ochyra & V. Plášek (KRAM B-123684, WA #37502, ZAMU). ATMOS grid square: Gd-59.

15. KARPATY ZACHODNIE [= Western Carpathians], Obniżenie Orawsko-Podhalańskie [= Orawa-Podhale Depression], Rów Podtatrzański [= Subtatra Trough]: Zakopane, Bystre, 10.VIII.1879, leg. T. Chalubiński, rev. R. Ochyra & V. Plášek (KRAM B-123669, WA #37498, ZAMU). ATMOS grid square: Ge-50.

16. POBRZEŻA POŁUDNIOWOBALTYCKIE [= South Baltic Coast]: Szczecin, Puszcza Bukowa primeval forest, on bark of *Populus tremula* L., VII.1880, leg. J. Winkelmann, rev. E. Fudali (1995) and V. Plášek (POZG). ATMOS grid square: Ba-94.

17. KARPATY ZACHODNIE [= Western Carpathians], Tatra Mts: Rostoka stream in Dolina Rostoki valley near so-called Grzmot [= Wodogrzmoty, waterfall], 18.VIII.1880, leg. T. Chalubiński, rev. R. Ochyra & V. Plášek (KRAM B-123689, WA #37500, ZAMU). ATMOS grid square: Ge-50.

18. KARPATY ZACHODNIE [= Western Carpathians], Obniżenie Orawsko-Podhalańskie [= Orawa-Podhale Depression], Rów Podtatrzański [= Subtatra Trough]: Zakopane, VIII.1885, leg. J. Krupa, rev. V. Plášek (KRAM B-1458). ATMOS grid square: Gd-59.

19. POBRZEŻA POŁUDNIOWOBALTYCKIE [= South Baltic Coasts]: Szczecin, Puszcza Bukowa primeval forest, peat bog near Prochowy Młyn (*Germ.* Pulvermühle), on bark of *Populus tremula*, VIII.1893, leg. J. Winkelmann, rev. V. Plášek (POZG) – mixed collection, together with *Frullania dilatata* (L.) Dumort. ATMOS grid square: Ba-93.

20. PÓŁNOCNE PODKARPACIE [= Northern Subcarpathia], Kotlina Sandomierska [= Sandomierz Basin]: Puszcza Niepołomska (without detailed locality), 8.XI.1909, leg. A. J. Żmuda, rev. V. Plášek (KRAM B-6733). ATMOS grid square: Fe-62.

21. KARPATY ZACHODNIE [= Western Carpathians], Beskidy Zachodnie [= Western Beskidy], Beskid Śląski: Bielsko-Biała, by road to Kołowrót pass [*Germ.* Bielitz Weg nach der Kamnitzer Platte] between Mt. Szyn-dzielnia and Mt. Dębowiec, on bark of forest tree, alt. ca 600 m a.s.l., 8.VII.1935, leg. A. Graw, rev. V. Plášek (KRAM B-21630). ATMOS grid square: Fd-93.

22. WYŻYNA ŚRODKOWOMALOPOLSKA UPLAND, Wyżyna Kielecko-Sandomierska upland, Płaskowyż Suchedniowski plateau: forest near Kruk village by town of Suchedniów, on bark of *Populus tremula*, 7.VII.1939, leg. K. Kaznowski, rev. V. Plášek (POZG) – mixed collection, together with *Orthotrichum stramineum*. ATMOS grid square: Ee-55.

23. WYŻYNA ŚRODKOWOMALOPOLSKA UPLAND, Wyżyna Kielecko-Sandomierska upland, Garb Gielnowski hummock: Bliżyn village northwest of town of Suchedniów, along track between Dalejów and Suchedniów, on bark of *Populus tremula*, 7.VII.1939, leg. K. Kaznowski, rev. V. Plášek (POZG) – mixed collection, together with *Frullania dilatata*. ATMOS grid square: Ee-45.

24. KARPATY WSCHODNIE [= Eastern Carpathians], Beskidy Wschodnie [= Eastern Beskidy], Bieszczady Zachodnie: Wetlina, on bark of *Tilia* sp., 19.VII.1954, leg. S. Lisowski, rev. A. Stebel (2010) and V. Plášek (KRAM B-58437, POZG) – mixed collection, together with *Orthotrichum pallens* Brid. ATMOS grid square: Gf-68.

25. WYŻYNA WSCHODNIOMALOPOLSKA UPLAND, Wyżyna Lubelska upland, Płaskowyż Świdnicki plateau: in forest near Chmiel village, south of Świdnik, on bark of *Acer* sp. and *Ulmus* sp., 13.IX.1957, leg. M. Kuc, rev. V. Plášek (KRAM B-26519 & 26520). ATMOS grid square: Ef-38.

26. WYŻYNA WSCHODNIOMALOPOLSKA UPLAND, Rostocze Wschodnie heights: beech forest near Hrebenne, southeast of Tomaszów Lubelski, 18.IX.1958, leg. M. Kuc, rev. V. Plášek (KRAM B-26521). ATMOS grid square: Fg-35.

HISTORICAL COLLECTIONS (WITHOUT COLLECTING DATE)

27. SUDETY ZACHODNIE [= Western Sudetes], Karonosze range [= Giant Mts]: east of Szklarska Poręba town, Wodospad Szklarki (*Germ.* Kochelfall), *sine dato*, *leg. J. Milde*, rev. V. Plášek (WRSL). ATMOS grid square: Ea-78.

RECENTLY DISCOVERED LOCALITIES

28. LUBUSKIE VOIVODESHIP: Pojezierze Lubuskie lakeland, Równina Torzymska [= Torzym Plain], Rzepinek settlement south of Rzepin town, Ilanka river valley, forest section 491b of Rzepin Forest Inspectorate, GPS coordinates (WGS 84): 52°19'15"N, 14°49'20"E, alt. 55 m a.s.l., thickets in mixed forest, site of former building, bark of *Acer pseudoplatanus* L., one tuft growing with *Dorcadion affine*, *Orthotrichum pulchellum* Brunt., *O. stramineum*, *Radula complanata* (L.) Dumort., *Syntrichia virescens* (De Not.) Ochyra, *Ulota bruchii* and *Hypnum cupressiforme* Hedw., 24.III.2013, *leg. M. Smoczyk*, rev. V. Plášek (KRAM B-214940, priv. coll. of M. Smoczyk #3078). ATMOS grid square: Da-04.

29. LUBUSKIE VOIVODESHIP: Pojezierze Lubuskie lakeland, Torzym Plain, 2.6 km southeast of Rzepin town, forest section 427a of Rzepin Forest Inspectorate, 52°19'17"N, 14°51'43"E, alt. 70 m a.s.l., cut branch of *Quercus petraea* (Mat.) Liebl. by forest road, one tuft *ca* 12 cm² growing with *Dorcadion affine*, *Orthotrichum pulchellum*, *O. stramineum*, *Ulota bruchii*, *U. crispa*, *Hypnum cupressiforme* and lichen *Parmelia sulcata* Taylor, 15.III.2015, *leg. M. Smoczyk*, rev. V. Plášek (KRAM B-221054, priv. coll. of M. Smoczyk #5238). ATMOS grid square: Da-04.

30. LUBUSKIE VOIVODESHIP: Pojezierze Lubuskie lakeland, Torzym Plain, 2.3 km southeast of Jerzmanice Lubuskie railway station, forest section 21c of Cybinka Forest Inspectorate, 52°17'49"N, 14°50'16"E, alt. 55 m a.s.l., on trunk of *Carpinus betulus* L. at height of 1.5 m with N exposure, one tuft *ca* 2 cm² growing with *Dorcadion affine*, *O. pulchellum*, *O. pumilum* Sw., *O. stramineum*, *Ulota bruchii* and *Dicranoweisia cirrata* (Hedw.) Milde, 29.VI.2015, *leg. M. Smoczyk*, rev. V. Plášek (KRAM B-221053, priv. coll. of M. Smoczyk #5604). ATMOS grid square: Da-04.

31. LUBUSKIE VOIVODESHIP: Pojezierze Lubuskie lakeland, Pojezierze Łagowskie [= Łagowskie lakeland], 1.8 km south of Lubiechnia Mała village, north shore of Jezioro Busko lake, forest section 229b of Rzepin Forest Inspectorate, 52°23'31"N, 14°51'8"E, alt. 55 m a.s.l., on trunk of *Padus avium* Mill. at height of 1.7 m with

NW exposure, one tuft *ca* 3 cm² growing with *Hypnum cupressiforme*, *Pyralisia polyantha* (Hedw.) Schimp., *Dorcadion affine* and *Ulota crispa*, 19.II.2016, *leg. M. Smoczyk*, rev. V. Plášek (KRAM B-223989, priv. coll. of M. Smoczyk #6539). ATMOS grid square: Ca-94.

LITERATURE RECORDS (NO VOUCHER SPECIMEN LOCATED)

NIZINA ŚLĄSKA PLAIN, Równina Oleśnicka: Malin (*Germ.* Mahlen) (Milde 1869); ATMOS grid square: Eb-39.

NIZINA ŚLĄSKO-ŁUŻYCKA [= Silesian-Lusathian Plain], Równina Szprotawska: Żagań (*Germ.* Sagan) (Milde 1869); ATMOS grid square: Da-87.

NIZINA ŚLĄSKO-ŁUŻYCKA [= Silesian-Lusathian Plain], Wysoczyzna Lubińska: Przemków (*Germ.* Primkenau) (Milde 1869); ATMOS grid square: Db-90.

PRZEDGÓRZE SUDECKIE PIEDMONT, Masyw Ślęży [= Ślęża Massif]: Sobótka (*Germ.* Zobten) (Milde 1869); ATMOS grid square: Eb-76.

SUDETY ZACHODNIE [= Western Sudetes], Góry Izerkskie range: Świeradów-Zdrój (*Germ.* Flinsberg) (Milde 1869); ATMOS grid square: Ea-67.

SUDETY ZACHODNIE [= Western Sudetes], Karonosze range: Paciorki rocks (*Germ.* Corallensteine) (Milde 1869); ATMOS grid square: Ea-78.

SUDETY ZACHODNIE [= Western Sudetes], Pogórze Bolkowsko-Wałbrzyskie foothills: Czeszów (*Germ.* Deutschhammer) (Milde 1869); ATMOS grid square: Eb-73.

SUDETY ZACHODNIE [= Western Sudetes], Pogórze Bolkowsko-Wałbrzyskie foothills: Książ (*Germ.* Fürstenstein) (Milde 1869); ATMOS grid square: Eb-74.

SUDETY ŚRODKOWE [= Central Sudetes], Pogórze Orlickie foothills: Kudowa-Zdrój (*Germ.* Cudowa) (Milde 1869); ATMOS grid square: Fb-23.

SUDETY ŚRODKOWE [= Central Sudetes], Góry Bystrzyckie range: Duszniki-Zdrój (*Germ.* Reinerz) (Milde 1869); ATMOS grid square: Fb-24.

SUDETY WSCHODNIE [= Eastern Sudetes], Masyw Śnieżnika [= Śnieżnik Massif]: Międzygórze (*Germ.* Wölfelsgrund) (Milde 1869); ATMOS grid square: Fb-47.

EXCLUDENDA

KARPATY ZACHODNIE, Tatra Mts, Zakopane town, 1867, *leg. A. Rehman*, rev. V. Plášek (KRAM B-6863) – *est Ulota crispa*.

PÓLNOCNIE PODKARPACIE, Puszcza Niepołomska primeval forest, *sine dato*, *leg. J. Krupa*, rev. V. Plášek (KRAM, B-5527) – *est Ulota crispa*.

SUDETY ZACHODNIE, Góry Izerskie Mts, Rozdroże Izerskie plateau, loc. Ludwigsbaude, 900 m a.s.l., 13.VI.1916, leg. F. Kern, rev. V. Plášek (WRSL) – *est Dorcadion speciosum* with *Orthotrichum stramineum*.

DUBIOUS RECORDS

Franciszek Błoński collected *Ulota coarctata* at ‘Straż Okolnicka’ on 22 July 1887 and the voucher specimens are deposited in WA. This locality is one of 12 districts of Puszcza Białowieża [= Białowieża Forest], a famous primeval forest in northeastern Poland situated in Poland and Belarus. A major part (ca 90%) of the ‘Straż Okolnicka’ district is currently situated in Belarus, and only a small part (ca 10% of its area) lies in Poland. This forest district was subsequently divided into sections, but unfortunately the collector gave no section number for the collection site, so its precise location cannot be ascertained. Hence the record of *U. coarctata* in the Polish part of Puszcza Białowieża is uncertain. It is worth noting that this species is cited in the moss flora of Belarus as occurring in the Belarusian part of Puszcza Białowieża, although without precise details (Rykovsky & Maslovsky 2004). This locality is marked with a question mark in ATMOS grid square Cg–56.

The situation is similar for the specimen collected by Breutel in the Giant Mts [Breutel, *Musci frondosi Exsiccati* No. 454], which is housed in the Limpricht herbarium at BP-Limpricht #43261. On the label only an imprecise location is given: ‘An Baumstämmen im Riesengebirge, April?, Breutel’, so it is not clear if the locality is in the Polish or Czech part of the Giant Mts.

Finally, also among the literature records are cases of unclear locations. For example, ‘Silesia: Cieszyn – Germ. Teschen (Milde 1869)’. From this information it is not possible to say which part of the town of Cieszyn or its vicinity (whether in Poland or the Czech Republic) the record comes from. This locality is marked with a question mark in ATMOS grid square FD–90.

DISCUSSION

The historical localities of *Ulota coarctata* in Poland were recorded mostly in mountain areas in the southern part of the country (Fig. 3), including the Carpathians (with many localities in the Tatras confirmed by voucher collections) and the Sudetes (mostly literature data). In the northwestern part of Poland only two localities are known from Puszcza Bukowa near Szczecin. The most recent of the historical records of the

species were made by M. Kuc in 1957 and 1958 in the Wyżyna Małopolska upland. The new findings presented here are the first for Poland for more than half a century, and originate from the western part of the country. The nearest recently discovered stations of this species are situated in Brandenburg, Germany (Daute & Fürstenow 2011), ca 130 km southwest of the locality of the recent findings in Poland.

In all new localities, *Ulota coarctata* was found with sporophytes but only in small populations consisting of single tufts. The species was recently recorded growing on the bark of *Acer pseudoplatanus*, *Carpinus betulu* and *Padus avium*, and on a branch of *Quercus petraea*. The historical specimens of the species were collected, according to the label data, on bark of various deciduous trees, including *Populus tremula*, *Fagus sylvatica*, *Acer* sp., *Sorbus* sp., *Tilia* sp. and *Ulmus* sp.

Ulota coarctata occurs in synusia of corticolous epiphytic mosses, in communities from the order *Orthotrichetalia* Hadač in Klika & Hadač 1944 (Hübschmann 1986; Marstaller 1993), and grows together with *Ulota bruchii*, *U. crispa* and other epiphytic species of the broadly conceived genus *Orthotrichum* Hedw. (cf. Plášek *et al.* 2015), such as *Dorcadion affine*, *Orthotrichum pulchellum* and *O. stramineum*. In two of the recently found localities, *U. coarctata* was recorded in an environment of mixed oak-hornbeam forest of the alliance *Carpinion betuli* Issl. 1931 *em.* Oberd. 1953, on slopes of a small stream valley and with a microclimate of quite high humidity. The third collection was on branches of an old sessile oak tree growing by a forest road in a complex of acidophilous pine-oak mixed forest of the alliance *Dicrano-Pinion* (Libbert 1933) W. Mat. 1962. At the last locality the species was found on bark of *Padus avium* growing in swamp alder forest of the alliance *Alnion glutinosae* Malcuit 1929 developed on the shore of a lake.

All new localities were found during an intensive bryofloristic survey of the western part of Poland. Probably the species may be rediscovered in the future at additional locations in this part of the country. This region merits special attention for nature conservation.

Since the fact that the present records were made in a very narrow area (ca 17 km²) and the populations are very small, it would be appropriate to treat *Ulota coarctata* as a critically endangered species in Poland – CR category, criteria A2c; C2a(i); D (IUCN 2012).

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