

HISTORICAL BRYOPHYTE SPECIMENS FROM MONTENEGRO IN THE HUNGARIAN NATURAL HISTORY MUSEUM

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Abstract: 184 specimens, collected by ten persons between 1890–1975 from Montenegro, were found in the Bryophyte Collection of the Hungarian Natural History Museum. Most of the specimens (40%) were collected near Herceg Novi in Boka Kotorska Bay. Another significant part of the specimens (35%) was collected in Kotor or in the surrounding of the town. 18% of the specimens derives from the Orjen Mts. The others are sporadic records from various parts of Montenegro. 80% of the specimens were unpublished. Most of the species found are common, widespread members of the Montenegrin flora, but some rare elements were also found. The Mediterranean, sub-Mediterranean liverworts (*Cephaloziella turneri*, *Myriocoleopsis minutissima*, *Scapania compacta* and *Southbya tophacea*) from the surroundings of Herceg Novi that are rare in Montenegro are the most important from the point of view of nature conservation.

Key words: Boka Kotorska, Kotor Bay, liverworts, mosses, Orjen Mts, 1890–1975

INTRODUCTION

Natural science collections hold huge amount of biodiversity information from the past and present. Digitisation can improve the accessibility of information derived from specimens deposited in herbaria. However, for the extraction of correct biodiversity information checking and revision of specimens are also indispensable. Hence, in the case of bryological collections digital access cannot replace the physical access to collections, because for the determination of bryophytes microscopic details should be used, which cannot be studied in digitised specimens. A project on an updated check list and red list of Montenegrin bryophytes, granted in the frame of Synthesys+ EU funded Horizon 2020 program, made possible the digitisation and revision of historical specimens from Montenegro held in the Bryophyte Herbarium of the Hungarian Natural History Museum (HNHM). Historical specimens are sources of information from the

past and can also be used during red listing process in comparison with recent data to evaluate the possible decline of species.

METHODS

Historical specimens of Montenegro were thoroughly searched for, selected, revised, and digitised. Taxonomy and nomenclature follow HODGETTS *et al.* (2020).

RESULTS

The Bryophyte Herbarium of the HNHM holds 3,547 specimens from Montenegro. Most of them (3,363 specimens) were collected in the last two decades (from 1998) and 184 specimens can be regarded as historical (collected between 1890–1975). The historical specimens derive from ten collectors (Table 1) and many unpublished data were also found.

Table 1. Collectors and their contribution to the Montenegrin bryophyte material of the HNHM.

collector	number of specimens	date of collections
Baldacci, A.	2	1890, 1891
Baumgartner, J.	2	1911
Bierbach, O.	5	1907, 1908
Degen, Á.	49	1906
Hévey, Gy.	1	1934
Loitlesberger, K.	8	1904, 1905
Priszter, Sz.	3	1967
Simonkai, L.	3	1901
Szepesfalvy, J.	29	1929
Vajda, L.	82	1966, 1975

Most of the specimens (40%) were collected near Herceg Novi in Boka Kotorska Bay. More exact locations appear in various names, e. g. Josica (Jošica), Lazarević and Zelenika on Degen's labels or between Kuti and Lastva, Gjenovič (Đenovići), Sasovič (Sasovići) and Zelenika at Szepesfalvy's labels, which are settlements near Herceg Novi. Another significant part of the specimens (35%) was collected in Kotor or in the surrounding of the town. These are mostly Vajda's

specimens. 18% of the specimens derives from the Orjen Mts (Orjen on the labels) collected mostly by Degen. The numbers of historical records in Montenegro are given in Figure 1. The other sporadic records are from various locations mainly in Southern Montenegro (marked by + on Figure 2).

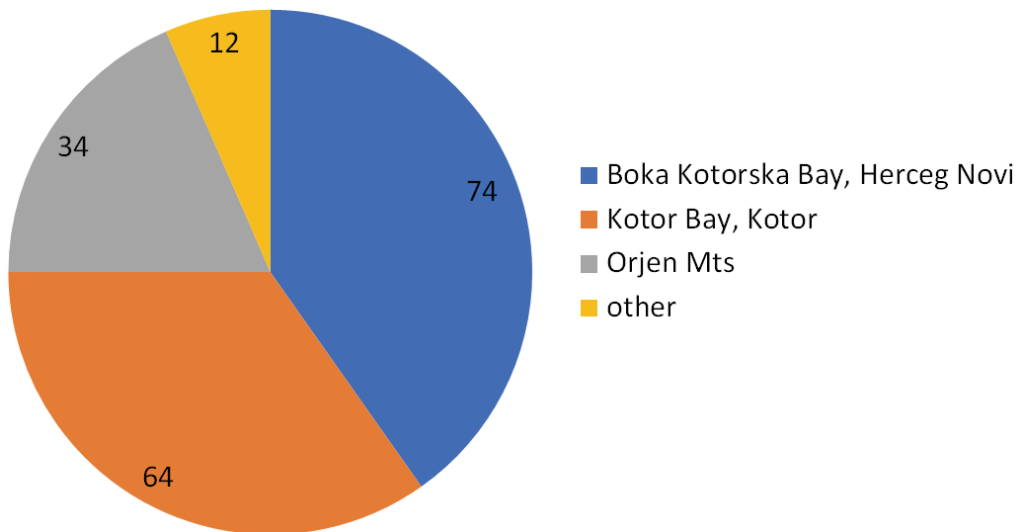


Fig. 1. Localities of the historical specimens collected in Montenegro.

The oldest specimens were collected by **Antonio Baldacci** (1867–1950), who was an Italian botanist and geologist. Motivated by the Treaty of Berlin (1878), which formally recognised the independence of Montenegro, Baldacci selected this country as his research field and began to collect in Montenegro in 1885. From 1885 to 1910, he visited Montenegro at least fourteen times, either as a direct destination or on his way to Albania. During this period, Baldacci's interest was not only botanical. His interest increasingly turned to politics and he participated in more missions to Montenegro, focusing on ethnography, geography, economy, and politics. He also took part in the Italian programme for economic expansion into Montenegro. After the abolition of the Montenegrin state in 1918, Antonio Baldacci and his associate and friend, Kurt Hassert, formed an international committee, which advocated for restoring the Montenegrin sovereignty (BARINA 2017, PULEVIĆ 2022). Baldacci's herbarium is in Torino (TO) and Firenze (FI), but a remarkable amount of his specimens are held in Vienna (W and WU), Budapest (BP), and Paris (P). In addition, duplicates can also be found in larger herbaria all over Europe (BARINA 2017). His

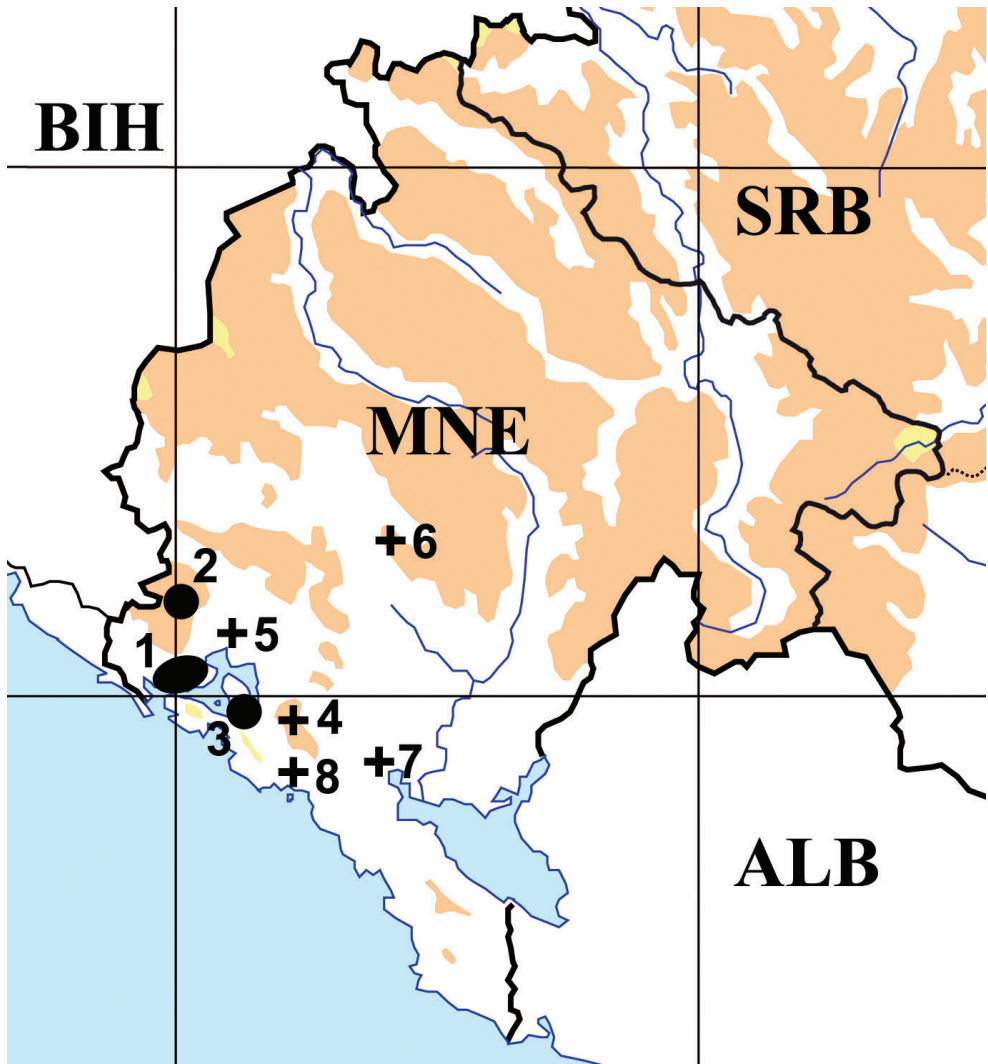


Fig. 2. Map of the localities of the historical specimens from Montenegro held in the HNHM. (Abbreviations: MNE = Montenegro, BIH = Bosnia-Herzegovina, SRB = Serbia, ALB = Albania; 1 = Boka Kotorska Bay around Herceg Novi, 2 = Orjen Mts, 3 = Kotor Bay around Kotor, 4 = Lovćen Mts, 5 = Risan, 6 = Ostrog, 7 = Rijeka Crnojevića, 8 = Budva).

two bryophyte specimens from the Flora Exsiccata Crnagorae are deposited in the HNHM (Fig. 3).

Cinclidotus aquaticus (Hedw.) B. et S. – 1) Rijeka Crnojevića prope Obod, Hab. In aquis [Rijeka Crnojevića near Obod, in water], 23.07.1891. leg. and det. A. Baldacci (BP 38146). – 2) rivi Latae prope Ostrog, Hab. Ad cataractam [river Latae at Ostrog, at waterfall], 07.1890. leg. and det. A. Baldacci, (BP 38147). – Comment: The species is widespread in the region even today.

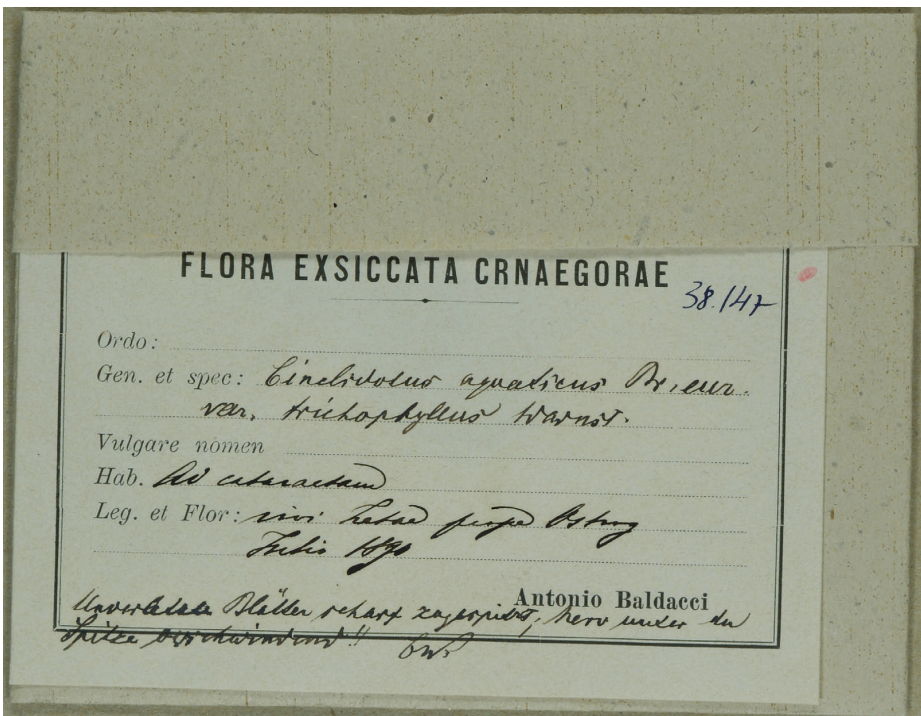
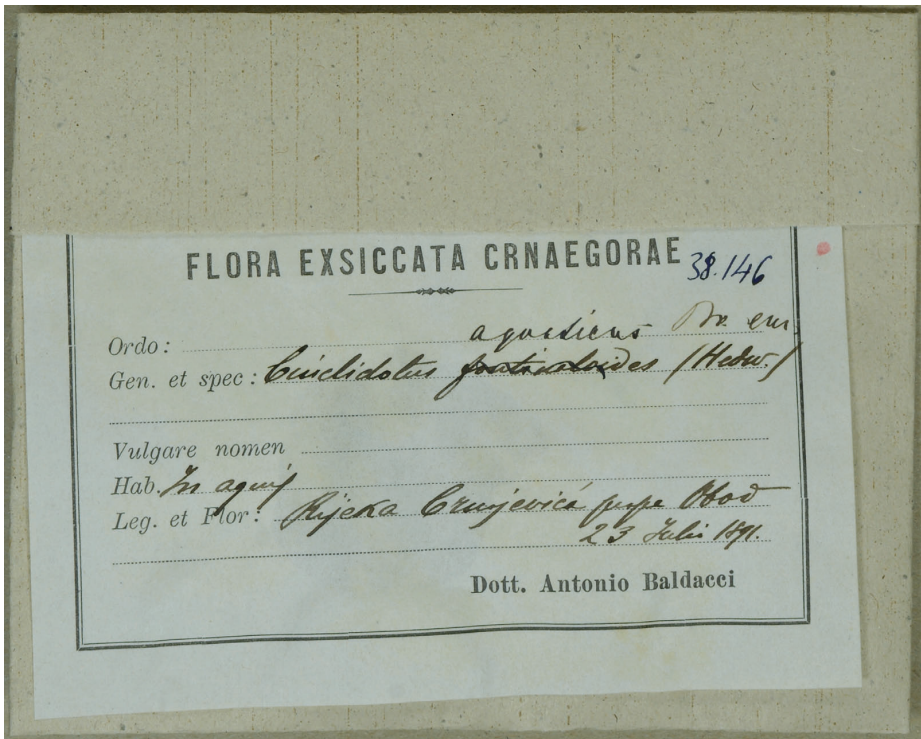


Fig. 3. Specimens of *Cinclidotus aquaticus* collected by Antonio Baldacci.

Several historical specimens from Montenegro deposited in the HNHM were part of the collection of **Árpád Degen** (1866–1934), which arrived at the museum in 1934. Árpád Degen was a Hungarian botanist, and one of the most important experts on the Balkan flora in his era. Besides his phanerogam plant collection, he also collected huge amount of bryophytes. He and his co-workers had conducted several fieldtrips to the Dalmatian coast and adjacent mountain ranges in the early 1900s (LENGYEL 1936). Unfortunately, the most part of Degen's collection was destroyed in World War II, however his bryophyte collection, which contained many Balkan specimens collected by himself and other collectors of the era, has survived (BOROS 1948).

The collected specimens were usually identified by Austrian bryologists; hepatics by Victor Schiffner, mosses by Julius Baumgartner (ALEGRO *et al.* 2012). Árpád Degen also visited Montenegro in June 1906. The Bryophyte Collection of the HNHM contains specimens collected mainly from the Orjen Mts and from Boka Kotorska Bay at Herceg Novi (Josica, Zelenika). The liverwort specimens like *Porella platyphylla* (L.) Pfeiff. (BP 11340/H and BP 11341/H) were published in SCHIFFNER (1916) (Fig. 4).

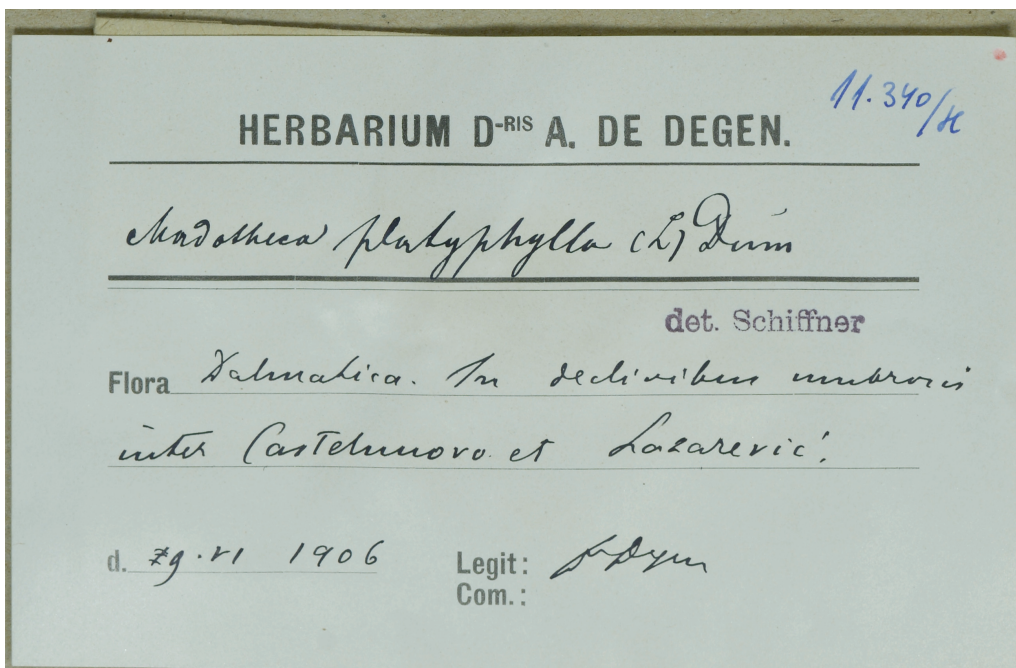


Fig. 4. Specimen of *Porella platyphylla* collected by Árpád Degen and identified by Victor Schiffner. It was published in SCHIFFNER (1916).

The moss specimens have never been published. Here we give a list of Degen's moss specimens and revisions as well.

Anomodon viticulosus (Hedw.) Hook. et Taylor – Flora Dalmatica. In rupestribus montis Orien [on rocks], 10.06.1906, leg. Degen, Á., det. Baumgartner, J. (BP 52865).

Barbula unguiculata Hedw. – Flora Dalmatica. In fagetis montis Orien [in beech forest], 10.06.1906, leg. Degen, Á., det. Baumgartner, J. (BP 34946).

Brachytheciastrum velutinum (Hedw.) Ignatov et Huttunen – 1) Flora Dalmatica. In rupestribus montis Orien [on rocks], ca 1,800 m a.s.l., 10.06.1906, leg. Degen, Á., det. Baumgartner, J. (BP 56303). – 2) Flora Dalmatica. In fagetis montis Orien supra Crkvice [in beech forest], 10.06.1906, leg. Degen, Á., det. Baumgartner, J. (BP 56298 and BP 56331). – 3) Flora Dalmatica. In cacumine montis Orien [on the peak of Orjen Mts], 10.06.1906, leg. Degen, Á., det. Baumgartner, J. (BP 56299). Flora Dalmatica. In rupestribus montis Orien [on rocks], 10.06.1906, leg. Degen, Á., det. Baumgartner, J. (BP 56300).

Ctenidium molluscum (Hedw.) Mitt. – 1) Flora Dalmatica. In rupestribus montis Orien [on rocks], 10.06.1906, leg. and det. Degen, Á. (BP 50780 and BP 77977). – 2) Flora Dalmatica. In fagetis montis Orien supra Crkvice [in beech forest], 10.06.1906, leg. Degen, Á., det. Baumgartner, J. (BP 50790).

Didymodon luridus Hornsch. – 1) Flora Dalmatica. Bocche di Cattaro. In declivibus pr. Zelenikam [Kotor Bay, on slopes at Zelenika], 12.06.1906, leg. Degen, Á., det. Baumgartner, J. (BP 34793 and BP 34806). – 2) Flora Dalmatica. Bocche di Cattaro. In declivibus dumetosis ad Zelenikam [Kotor Bay, on rocky slopes at Zelenika], 12.06.1906, leg. and det. Degen, Á. (BP 34844).

Grimmia pulvinata (Hedw.) Sm. – Flora Dalmatica. In saxosis calcareis montis Orien supra Vrbanje [on limestone rocks], ca 1,600 m a.s.l., 10.06.1906, leg. and det. Degen, Á. (BP 36585) and leg. Degen, Á., det. Baumgartner, J. (BP 36577). – Both specimens with a note very rare (rarissimum!)

Homalothecium lutescens (Hedw.) H. Rob. – Flora Dalmatica. In rupestribus montis Orien [on rocks], 10.06.1906, leg. and det. Degen, Á. (BP 55276).

Homalothecium sericeum (Hedw.) Schimp. – Flora Dalmatica. In rupestribus montis Orien [on rocks], 10.06.1906, leg. Degen, Á., det. Baumgartner, J. (BP 55389).

Hypnum cupressiforme Hedw. subsp. *cupressiforme* – 1) Flora Dalmatica. In rupestribus montis Orien [on rocks], 10.06.1906, leg. and det. Degen, Á. (BP 48780). – 2) Flora Dalmatica. In fagetis montis Orien supra Crkvice [in beech forest], 10.06.1906, leg. Degen, Á., det. Baumgartner, J. (BP 48785).

Orthotrichum cupulatum Brid. – Flora Dalmatica. In saxosis montis Orien supra Vrbanje [in rocky place], 10.06.1906, leg. Degen, Á., det. Baumgartner, J. (BP 45857 and BP 45861).

Pohlia cruda (Hedw.) Lindb. – Flora Dalmatica. In rupestribus montis Orien [on rocks], 10.06.1906, leg. and det. Degen, Á. (BP 38354).

Pterigynandrum filiforme Hedw. – 1) Flora Dalmatica. In rupestribus montis Orien [on rocks], ca 1,800 m a.s.l., 10.06.1906, leg. Degen, Á., det. Baumgartner, J. (BP 50964). – 2) Flora Dalmatica. In fagetis montis Orien supra Crkvice [in beech forest above Crkvice], 10.06.1906, leg. Degen, Á., det. Baumgartner, J. (BP 50966). – 3) Flora Dalmatica. In cacumine montis Orien [on the peak of Orjen Mts], 10.06.1906, leg. Degen, Á., det. Baumgartner, J. (BP 183639).

Ptychostomum capillare (Hedw.) Holyoak et N. Pedersen – Flora Dalmatica. In rupestribus montis Orien [on rocks], 10.06.1906, leg. Degen, Á., det. Baumgartner, J. (BP 40948).

Ptychostomum inclinatum (Sw. ex Brid.) J. R. Spence – Flora Dalmatica. In rupestribus montis Orien [on rocks], ca 1,800 m a.s.l., 10.06.1906, leg. Degen, Á., det. Baumgartner, J. (BP 39391).

Ptychostomum moravicum (Podp.) Ros et Mazimpaka – Flora Dalmatica. In fagetis montis Orien supra Crkvice [in beech forest], 10.06.1906, leg. Degen, Á., det. Baumgartner, J., rev. Orbán, S. 02.03.1978 sub nom. *Bryum capillare* Hedw. (BP 40946).

Ptychostomum torquescens (Bruch et Schimp.) Ros et Mazimpaka – Flora Dalmatica. In rupestribus ad pagum Josica dolnja (Bocche di Cattaro) [Kotor Bay, at Josica dolnja, on rocks], 08.06.1906, leg. Degen, Á., det. Baumgartner, J. (BP 41582).

Rhynchostegiella tenella (Dicks.) Limpr. – Flora Dalmatica. Boccho di Cattaro. In declivibus prope Zelenikam [Kotor Bay, on slopes at Zelenika], 12.06.1906, leg. Degen, Á., det. Baumgartner, J. (BP 49401 and BP 49411) (Fig. 5).

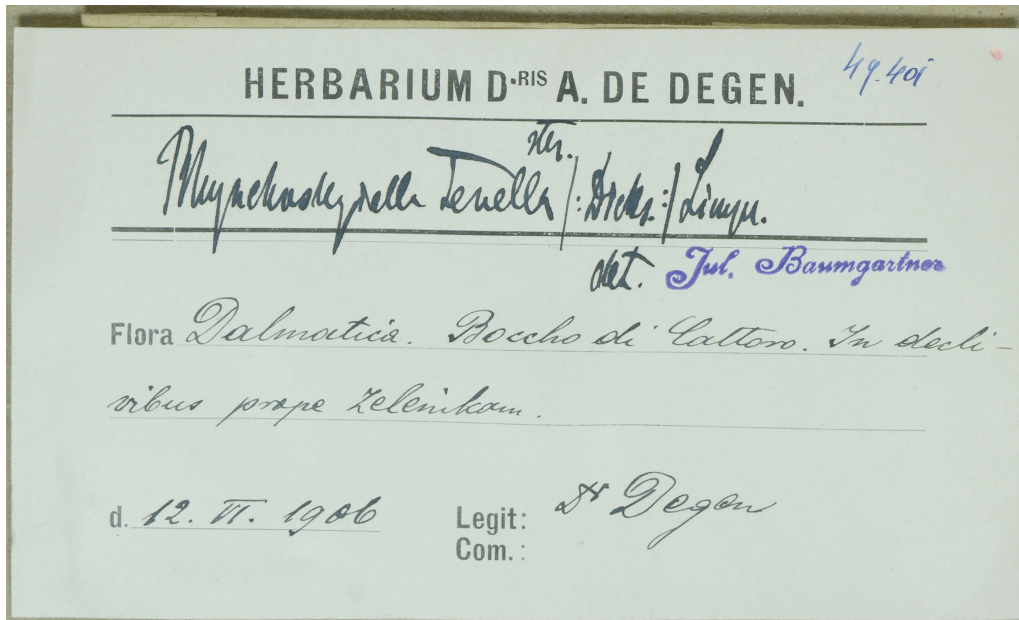


Fig. 5. Specimen of *Rhynchostegiella tenella* collected by Árpád Degen and identified by Julius Baumgartner.

Rhynchostegium confertum (Dicks.) Schimp. – Flora Dalmatica. Boccho di Cattaro. In declivibus prope Zelenikam [Kotor Bay, on slopes at Zelenika], 12.06.1906, leg. Degen, Á., det. Baumgartner, J. (BP 49506).

Schistidium brunnescens Limpr. subsp. *griseum* (Nees et Hornsch.) H. H. Blom – Flora Dalmatica. In cacumine montis Orien [on the peak of Orjen Mts], 10.06.1906, leg. Degen, Á., det. Baumgartner, J., rev. Papp, B. 12.2022, sub nom. *Schistidium apocarpum* (Hedw.) B. et S. var. *apocarpum* (BP 37734 (Fig. 6) and BP 37736).

Pseudoscleropodium purum (Hedw.) M. Fleisch. – Flora Dalmatica. Bocche di Cattaro. In declivibus dumetosis ad Zelenikam [Kotor Bay, on rocky slopes at Zelenika], 12.06.1906, leg. and det. Degen, Á. (BP 52250) and leg. Degen, Á., det. Baumgartner, J. (BP 52258).

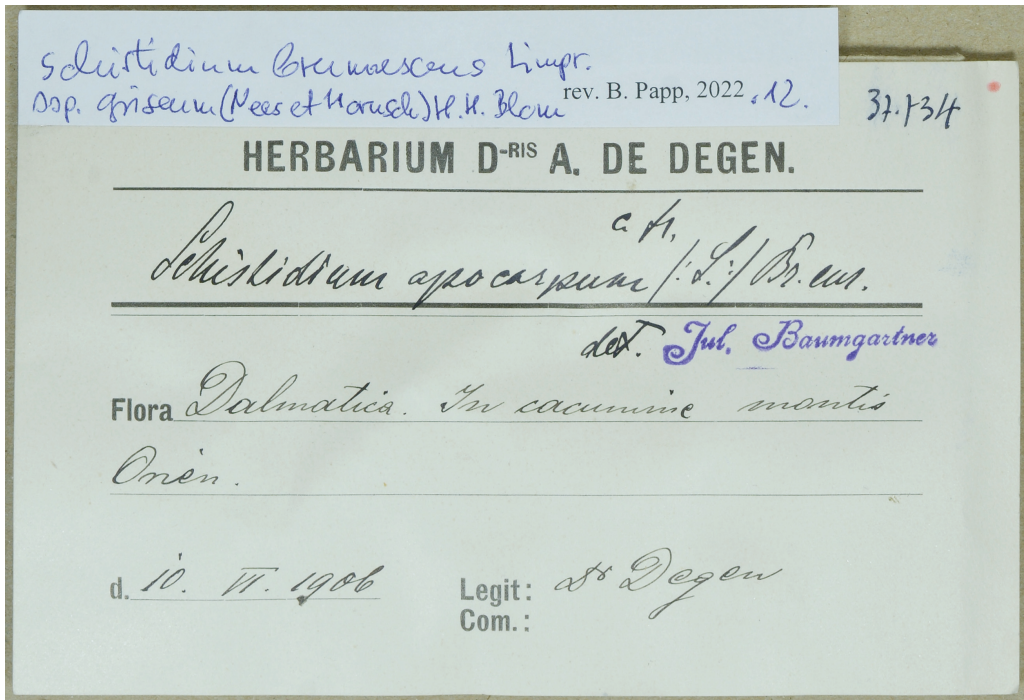


Fig. 6. Revised specimen of *Schistidium* collected by Árpád Degen and identified by Julius Baumgartner.

Syntrichia montana Nees – Flora Dalmatica. In rupestribus montis Orien [on rocks], ca 1,800 m a.s.l., 10.06.1906, leg. Degen, Á., det. Baumgartner, J. (BP 34988).

Tortella nitida (Lindb.) Broth. – Flora Dalmatica. Bocche di Cattaro. In declivibus prope Zelenikam [Kotor Bay, on slopes at Zelenika], 12.06.1906, leg. Degen, Á., det. Baumgartner, J. (BP 34168).

Tortula subulata Hedw. – Flora Dalmatica. In fagetis montis Orien supra Crkvice [in beech forest above Crkvice], 10.06.1906, leg. Degen, Á., det. Baumgartner, J. (BP 35189 and BP 35202).

Weissia condensa (Voit) Lindb. – Flora Dalmatica. Bocche di Cattaro. In rupium maritim. fissuris prope Zelenika [Kotor Bay, in crevice of marine rock near Zelenika], 07.06.1906, leg. Degen, Á., det. Baumgartner, J. (BP 33267).

Weissia controversa Hedw. – 1) Flora Dalmatica. In rupestribus montis Orien supra Crkvice [on rocks above Crkvice], 10.06.1906, leg. Degen, Á.,

det. Baumgartner, J. (BP 33470). – 2) Flora Dalmatica. Bocche di Cattaro. In saxosis prope pagum Josica donja [Kotor Bay, in rocky place at Josica donja], 07.06.1906, leg. Degen, Á., det. Baumgartner, J. (BP 33477 and BP 33478). – 3) Flora Dalmatica. In praeruptis supra Zelenikam (Bocche di Cattaro) [on steep slope above Zelenika], 12.06.1906, leg. Degen, Á., det. Baumgartner, J. (BP 33471).

Weissia controversa Hedw. var. *crispata* (Nees et Hornsch.) Nyholm – 1) Flora Dalmatica. In rupestribus ad Josica dolnja (Bocche di Cattaro) [on rocks at Josica dolnja, Kotor Bay], 08.06.1906, leg. Degen, Á., det. Baumgartner, J. (BP 33476). – 2) Flora Dalmatica. Bocche di Cattaro. In saxosis ad Josica dolnje [Kotor Bay, in rocky place at Josica dolnja], 08.06.1906, leg. Degen, Á., det. Baumgartner, J. (BP 33475) (Fig. 7).

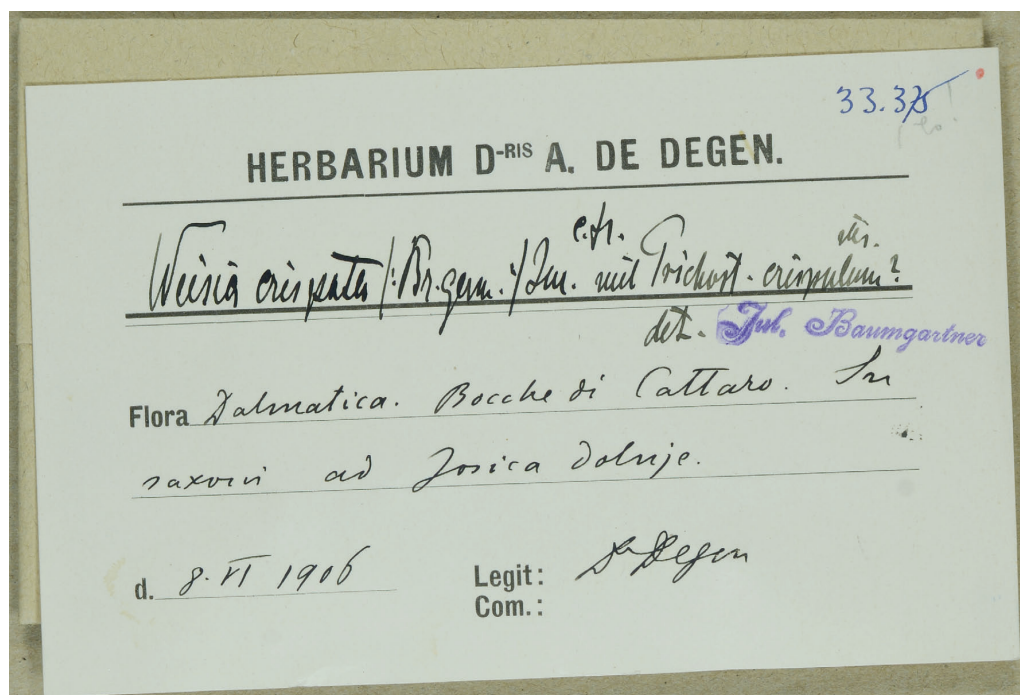


Fig. 7. Specimen of *Weissia controversa* var. *crispata* collected by Árpád Degen and identified by Julius Baumgartner.

As a part of the Degen collection, the Bryophyte Collection of the HNHM contains several specimens collected by **Julius Baumgartner** (1870–1955), Austrian bryologist. He also participated in many fieldtrips in Dalmatia, and

in the mountain ranges of Croatia and collected huge amount of specimens (ALEGRO *et al.* 2012). Baumgartner was also connected to the exploration of the bryophyte flora of Montenegro. He was in Boka Kotorska Bay in 1902 and Victor Schiffner mentioned him as a collector in his papers. In a publication he presented the bryophytes collected by Ignaz Dörfler, who was a member of the demarcation commission in 1914 and travelled to the border area of Montenegro and Albania (DRAGIĆEVIĆ 2022). Two specimens collected by Baumgartner from the Orjen Mts are deposited in the herbarium of the HNHM.

Lescuraea saviana (De Not.) E. Lawton – 1) Hercegov.-dalmat. Grenzgebiet: Buchenwald zw. Vrbanje u. Orjen-Sattel, an Grunde der Stämme; loc. class.!, 1,300–1,450 m a.s.l., 09.06.1911, leg. and det. Baumgartner, J. (BP 55100). – 2) Hercegovina: Rothbuchenwald zwischen Vrbanje und Orjensattel an der dalm. montenegr. Grenze, am Grunde der Stämme, mit *Orthotrichum*, *Leucodon*, *Pterigynandrum*, 1,300–1,450 m a.s.l., 09.06.1911, leg. and det. Baumgartner, J. (BP 83936).

As a part of the Degen collection, the HNHM also holds few specimens collected by **Oskar Bierbach** (? – 1910). He was a German botanist, who worked in the Jevremovac Botanical Garden in Belgrade between 1890 and 1903 (VUKOJIČIĆ *et al.* 2011). From 1905, he worked as a scribe at the German Legation in Cetinje and at the same time as the gardener of the Montenegrin king, Nikola Petrović. Ever since he settled in Montenegro, he followed Lujó Adamović and collected many plants in old Montenegro, which were determined by Árpád Degen (VUŠUROVIĆ 2022). Unfortunately, the labels of bryophyte specimens held in the herbarium of the HNHM contain only little information about the collecting event.

Ctenidium molluscum (Hedw.) Mitt. – Wasserdepot. (Montenegro), 03.1907. leg. and det. Bierbach, O. (BP 50931).

Dicranum scoparium Hedw. – 1) Flora Wasserdepot. (Montenegro), 07.1907. leg. and det. Bierbach, O. (BP 31619 and BP 31620). – 2) Flora Dalmatica. Veli Kabao [Velji Kabao in Orjen Mts], 07.1908, leg. Bierbach, O. and det. Baumgartner, J. (BP 31610) (Fig. 8).

Leucodon sciuroides (Hedw.) Schwägr. – Wasserdepot. (Montenegro), 03.1907. leg. and det. Bierbach, O. (BP 44938) (Fig. 9).

A specimen was collected in 1934 near Kotor by **Gyula Hévey** (1883–1953), who was a priest in Budapest, but also dealt with flowering plants. His higher plant collection is also deposited in HNHM (GULYÁS 1993, BARINA and PIFKÓ 2019). He also made botanical collecting trips along the Dalmatian

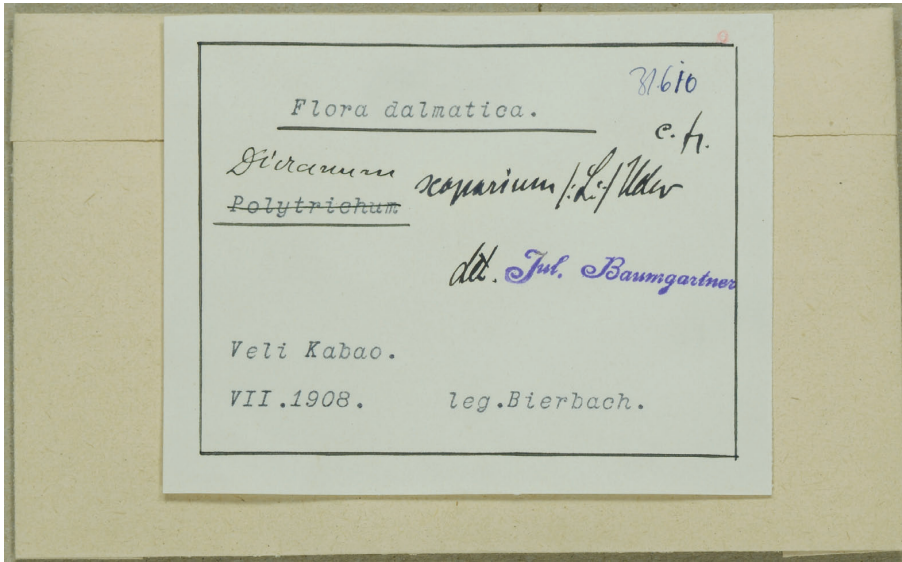


Fig. 8. Specimen of *Dicranum scoparium* collected by Oskar Bierbach.

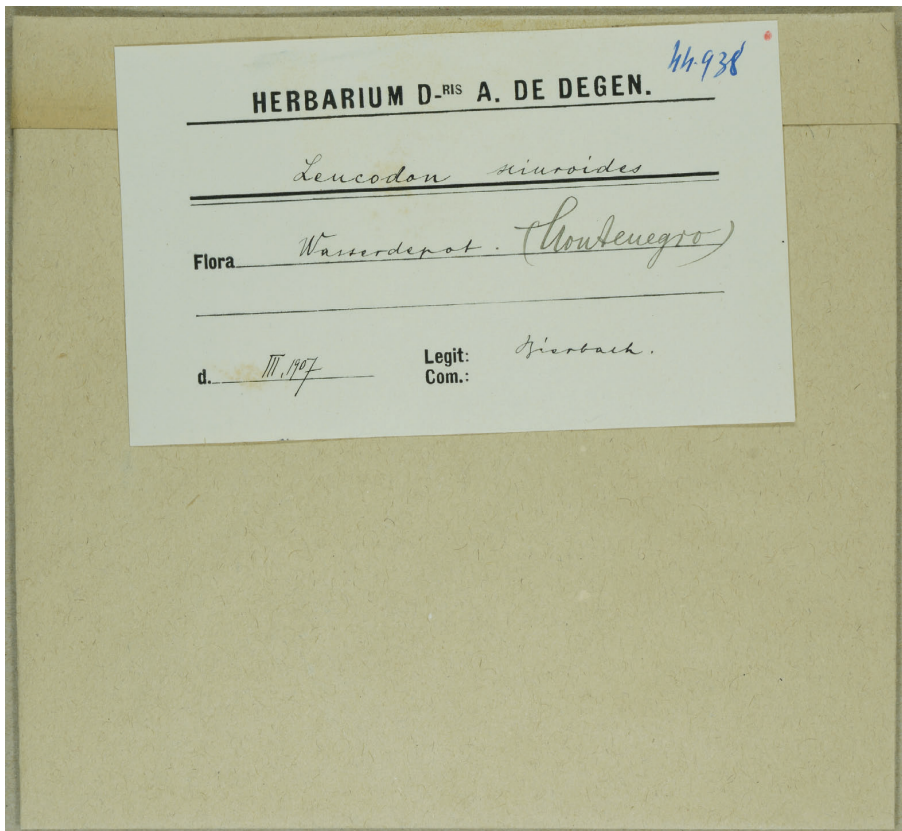


Fig. 9. Specimen of *Leucodon sciuroides* collected by Oskar Bierbach.

coast. The one and only Balkan bryophyte specimen in the HNHM collected by him is from Montenegro.

Reboulia hemisphaerica (L.) Raddi – Flora Montenegrina. Cattaro, apud viam serp. [Kotor, at serpentine road], 28.04.1934. leg. Hévey, Gy., det. anon., conf. Papp, B. in 2011 (BP 50744/H) (Fig. 10).

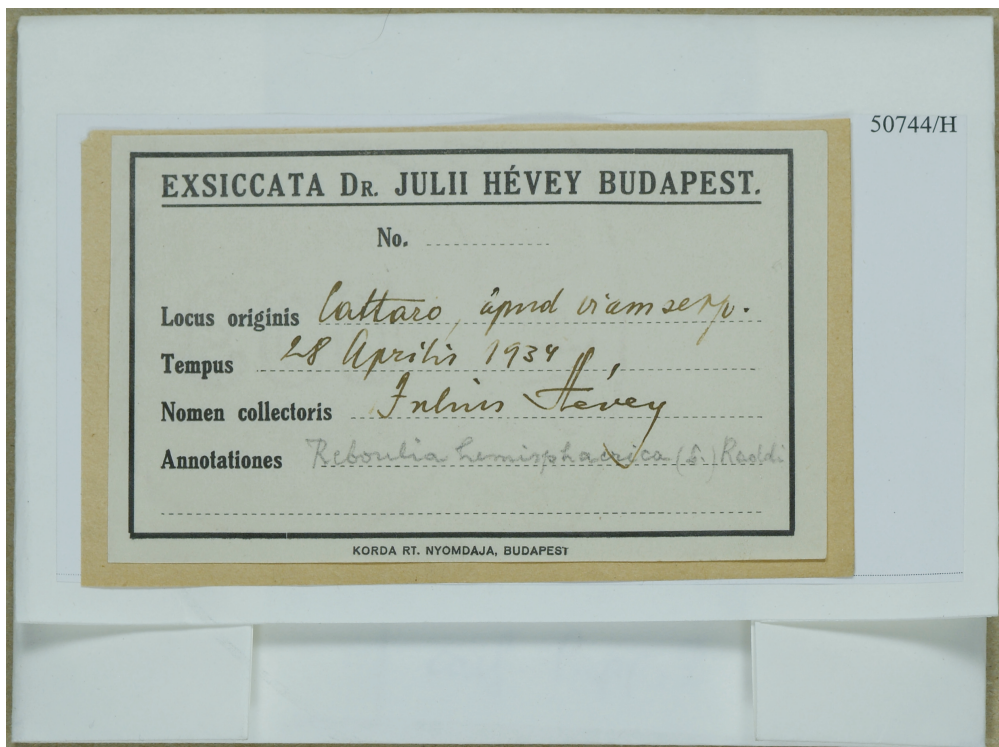


Fig. 10. Specimen of *Reboulia hemisphaerica* collected by Gyula Hévey.

The Bryophyte Collection of the HNHM holds specimens of Victor Schiffner's Hepaticae europaeae exsiccatae, which were collected by Karl Loitlesberger (1857–1943) in Montenegro, in Boka Kotorska Bay around Herceg Novi in 1904 and 1905. Most of these species are rare in Montenegro.

Mannia androgyna (L.) A. Evans – 1) Süd-Dalmatien: Bocche di Cattaro; Gartenmauer längs der Küste zwischen Castelnuovo und Savina, 03.1904, leg. and det. Loitlesberger, K. (BP 30468/H). – 2) Dalmatia: ad vinearum muros prope Castelnuovo ditonis “Bocche de Cattaro”, m. Apr. [04.1905], leg. and det. Loitlesberger, K. (BP 531/H and BP 30467/H). These two

specimens are from the “Kryptogamae exsiccatae editae a Mus. Hist. Nat. Vindobon.” – Comment: The *Mannia androgyna* specimens were published in LOITLESBERGER (1905), SCHIFFNER (1906).

Cephaloziella turneri (Hook.) Müll. Frib. – Dalmatien: Begovinagraben bei Castelnuovo in der Bocche di Cattaro, an einer lehmig-sandigen Hohlwegböschung. 03.1904+04.1905, leg. and det. Loitlesberger, K., rev. Douin. (BP 9208/H) (Fig. 11). – Comment: This specimen was published in LOITLESBERGER (1905), SCHIFFNER (1906). This is the only known record of the species from Montenegro.

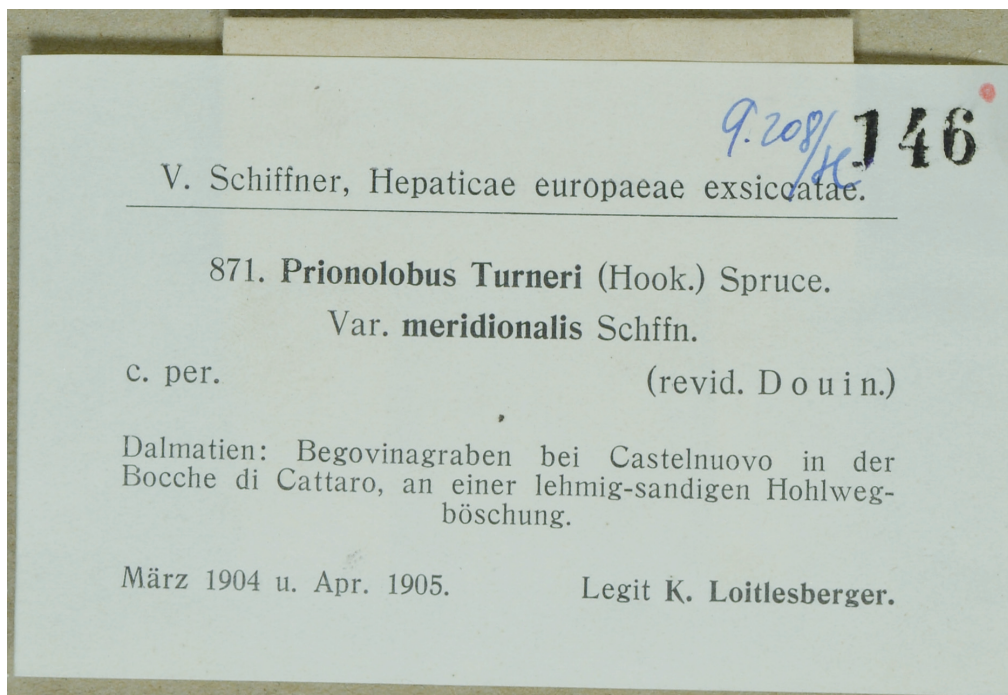


Fig. 11. Specimen of *Cephaloziella turneri* collected by Karl Loitlesberger.

Myriocoleopsis minutissima (Sm.) R. L. Zhu, Y. Yu et Pócs – Dalmatien: Bocche di Cattaro; Begovinagraben bei Savina, an Quercus Cerris. 03.1904, leg. and det. Loitlesberger, K. (BP 10745/H) (Fig. 12). – Comments: This specimen was published in SCHIFFNER (1902a, 1906), LOITLESBERGER (1905). The species has two more historical records (SZEPESFALVY 1931, BISCHLER and JOVET-AST 1973–74) and one recent record from Kotor Bay at Kostanjica (PAPP and ERZBERGER 2007).

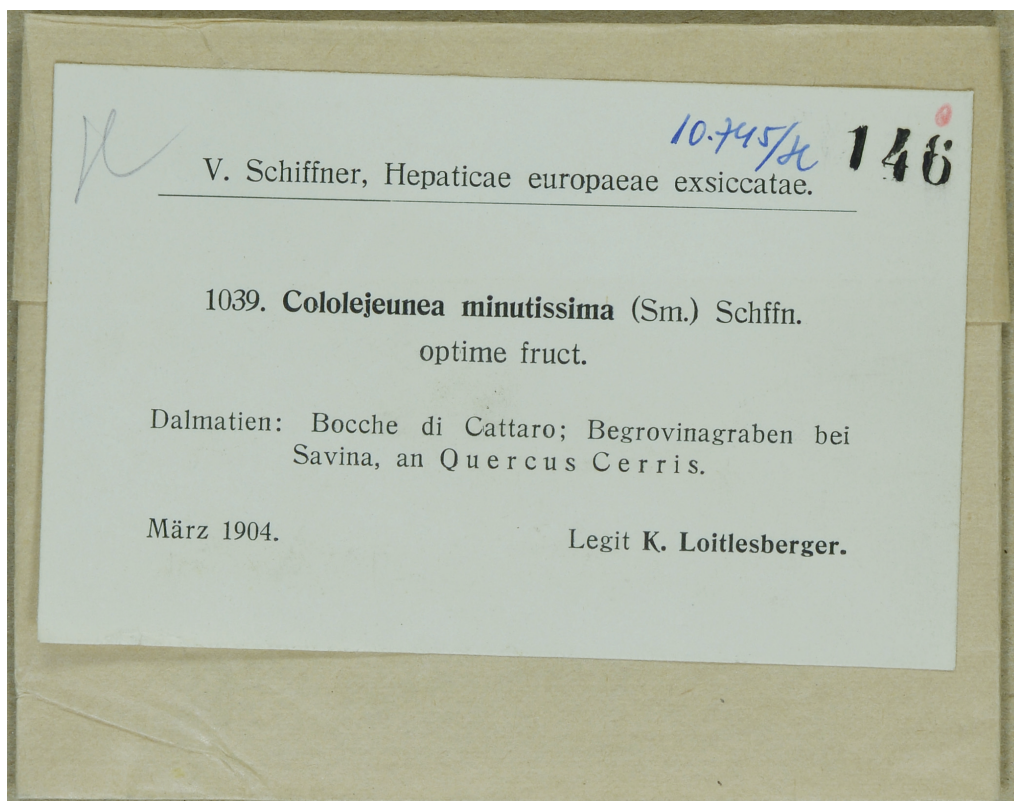


Fig. 12. Specimen of *Myriocoleopsis minutissima* collected by Karl Loitlesberger.

Scapania compacta (Roth) Dumort. – Dalmatien: Begovinagraben bei Cattaro; lehmige Waldstellen zwischen Castelnuovo und Savina. 04.1905, leg. and det. Loitlesberger, K. (BP 8891/H) (Fig. 13). – Comments: This specimen was published in SCHIFFNER (1906). This is the only historical record of the species from Montenegro. However, it has two recently known localities; one in Kotor Bay between Perast and Herceg Novi (PAPP and ERZBERGER 2007) and another one in the Bjelasica Mts (PAPP *et al.* 2013).

Southbya tophacea (Spruce) Spruce – Dalmatien: Bocche di Cattaro; unter überrieselten Kalkfelsen am Bache zwischen Castelnuovo und Jgalo. 04.1905, leg. and det. Loitlesberger, K. (BP 8290/H and BP 8292/H) (Fig. 14). – Comments: The HNHM holds two specimens of the species from the same collecting event (same locality, same date). This record was published in SCHIFFNER (1902a, 1906), LOITLESBERGER (1905). The species has one more historical record from Montenegro (SZEPESFALVY 1931). The species has only one recently known locality at Lake Skadar, Rijeka Crnojevića (PAPP and ERZBERGER 2007).

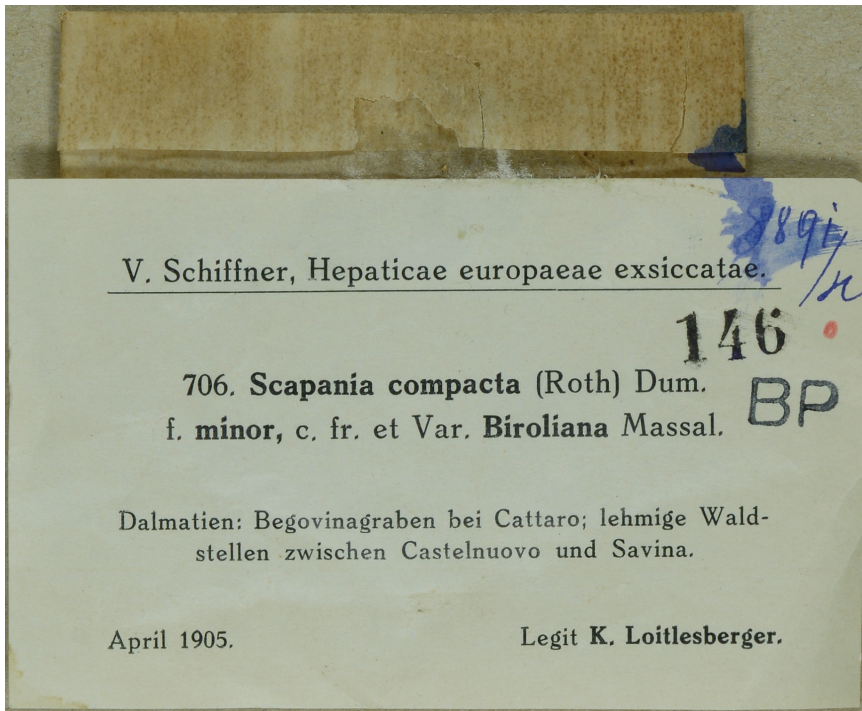


Fig. 13. Specimen of *Scapania compacta* collected by Karl Loitlesberger.

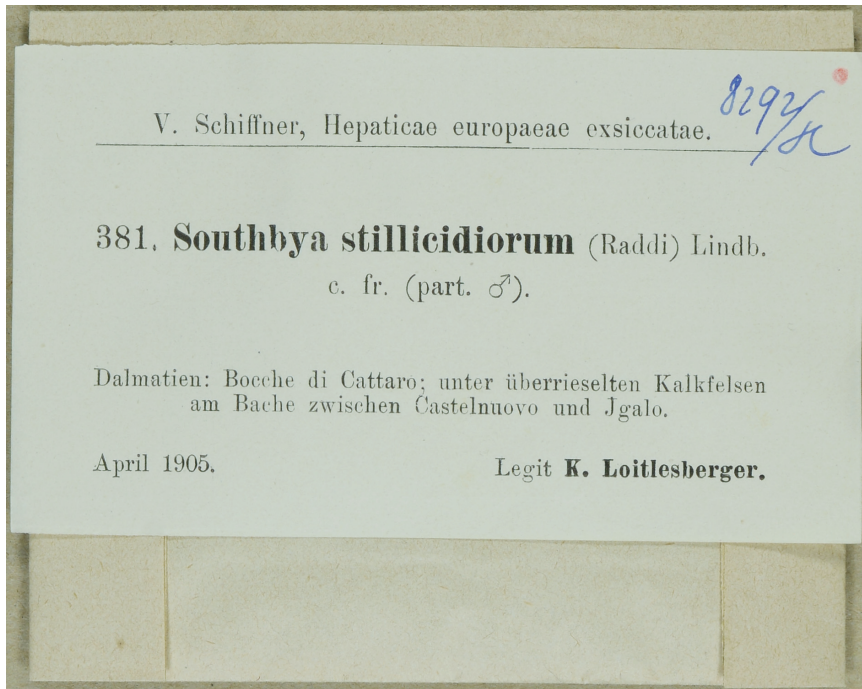


Fig. 14. Specimen of *Southbya tophacea* collected by Karl Loitlesberger.

Three specimens were collected by **Szanişzló Priszter** (1917–2011). He was a Hungarian botanist, illustrious researcher of the Pannonian flora, and former director of the Botanical Garden of the Loránd Eötvös University in Budapest (ISÉPY 2011). Although he dealt mainly with phanerogams, sporadically he also collected bryophytes, which were identified by the famous Hungarian bryologist, Ádám Boros. These records have not been published.

Encalypta streptocarpa Hedw. – Jugoslavia. In rupibus montis Lovcen [on rocks in the Lovćen Mts] 1,100 m a.s.l., 06.05.1967, leg. Priszter, Sz. and det. Boros, Á. (BP 102120) (Fig. 15).

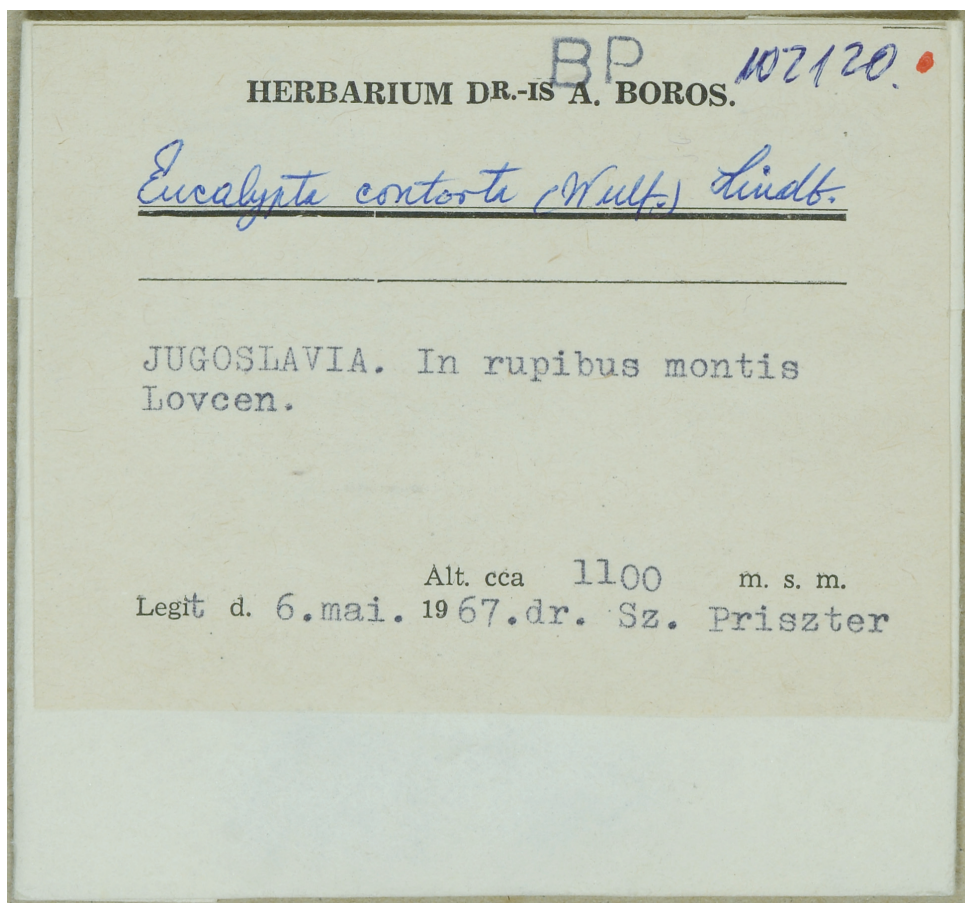


Fig. 15. Specimen of *Encalypta streptocarpa* collected by Szanişzló Priszter.

Reboulia hemisphaerica (L.) Raddi – 1) Jugoslavia. Boka Kotorska: supra Risan, in rupestribus [on rocks above Risan], 300 m a.s.l., 02.05.1967, leg. Priszter, Sz. and det. Boros, Á. (BP 29874/H). – 2) Jugoslavia. Boka

Kotorska: supra Risan, in rupestribus [on rocks above Risan], 200 m a.s.l., 02.05.1967, leg. Priszter, Sz. and det. Boros, Á. (BP 29875/H).

Three Montenegrin specimens were found in the Bryophyte Collection of the HNHM collected by **Lajos Simonkai** (1851–1910), who was a high school teacher. During his university studies he dealt with bryophytes, but later on he investigated the phanerogams of the Carpathian Basin. He was one of the most famous researchers of the Hungarian flora (TUZSON 1910). Between October 1901 and January 1902, he was seriously ill and presumably he visited the Montenegrin coast for the purpose of medical treatment. He collected bryophytes during this visit (CHERVEN 1902). Besides his important phanerogam collection, 9 fasciculus bryophyte specimens were also acquired by the HNHM in 1910, after his death (FILARSZKY 1911). This old herbarium of the HNHM was destroyed during World War II, but some remnants can still be found in the collection, like the following specimens.

Reboulia hemisphaerica (L.) Raddi – Dalmatia ad Budva, in rupibus umbrosis subhumidis [on shaded mesophilous rocks], 25.11.1901, leg. and det. Simonkai, L. (BP 433/H) (Fig. 16).

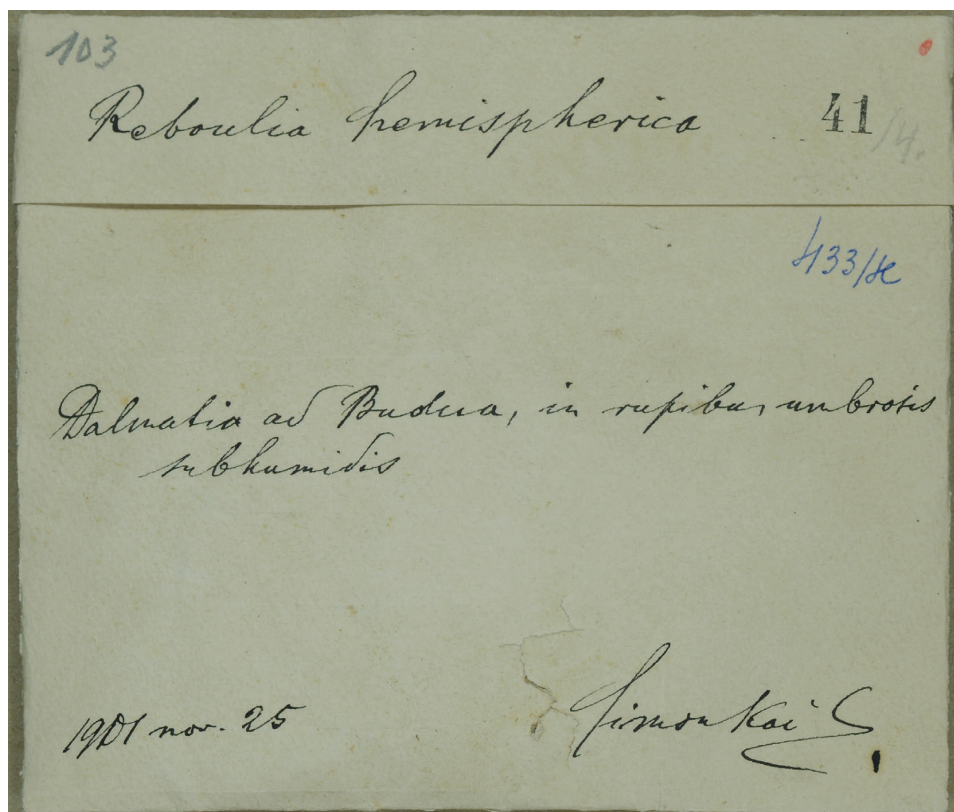


Fig. 16. Specimen of *Reboulia hemisphaerica* collected by Lajos Simonkai.

Weissia controversa Hedw. – Dalmatia ad Budva. In apricis collium [on sunny hills], 15.11.1901, leg. and det. Simonkai, L. (BP 2654 and BP 3654).

János (Szurák) Szepesfalvy (1882–1959) was a Hungarian bryologist, and the first curator of the Bryophyte Collection of the HNHM from 1905. He visited Montenegro in September 1929. During the study of bryophytes in the area of Boka Kotorska Bay, in the section between Bijela and Herceg Novi, he collected 88 bryophytes (DRAGIĆEVIĆ 2022). The herbarium of the HNHM contains 29 specimens from Boka Kotorska Bay around Herceg Novi. His results were published in 1931 (SZEPESFALVY 1931).

Specimens of rare species

Myriocoleopsis minutissima (Sm.) R. L. Zhu, Y. Yu et Pócs – Ad pag. Zelenika in Bocche di Cattaro Dalmaciae merid. [At Zelenika in Kotor Bay]. 14.09.1929, leg. and det. Szepesfalvy, J. conf. Papp, B. 07.2022 (BP 10746/H) (Fig. 17). – Comment: The species is rare in Montenegro. It has two more historical records (SCHIFFNER 1902a, 1906, LOITLESBERGER

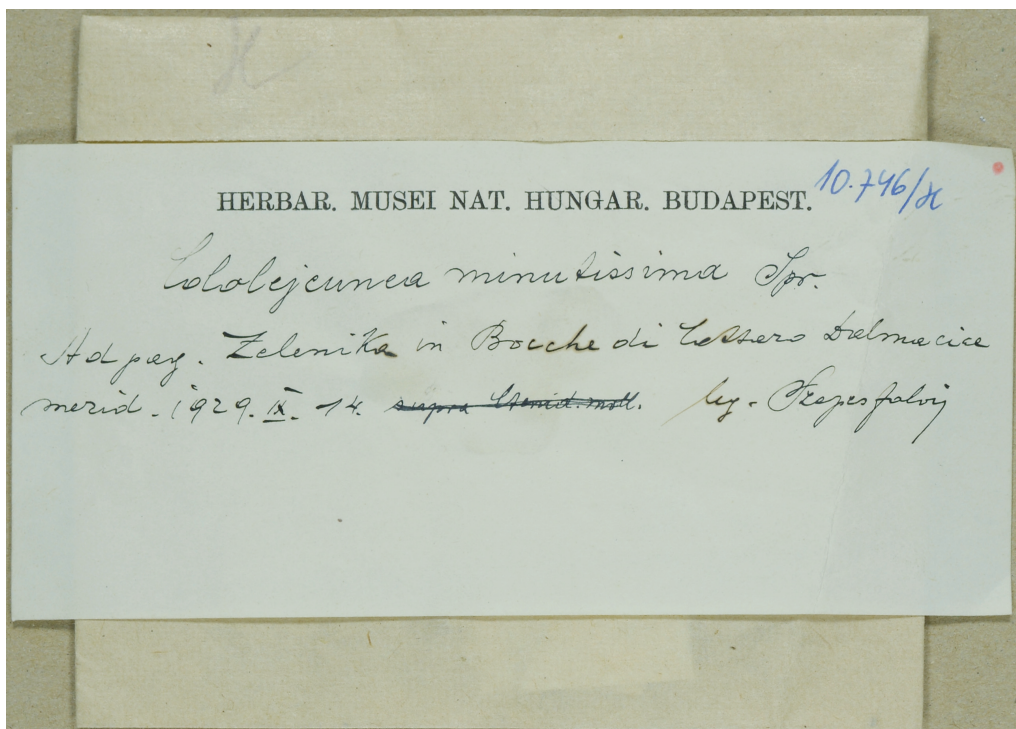


Fig. 17. Specimen of *Myriocoleopsis minutissima* collected by János Szepesfalvy.

1905, BISCHLER and JOVET-AST 1973–74) and one recent record (PAPP and ERZBERGER 2007) from Kotor Bay.

Tortella inflexa (Bruch) Broth. – 1) In terra saxatica, calcarea montis supra pag. Zelenika Dalmatiae meridionalis (sinus Cattaro.) [on calcareous soil among rocks in the hill above Zelenika (Kotor Bay)], 09.09.1929, leg. and det. Szepesfalvy, J. conf. Papp, B. 07.2022 (BP 2979). – 2) In terra calcarea, in valle versus “Trojica” prope pag. Zelenika Dalmaciae meridionalis (sinus Cattaro.) [on calcareous soil in the valley towards Trojica near Zelenika (Kotor Bay)], 18.09.1929, leg. and det. Szepesfalvy, J. conf. Papp, B. 07.2022 (BP 2980) (Fig. 18). – Comment: The species is rare in Montenegro. It has only one more data from the Orjen Mts (CVETIĆ and SABOVLJEVIĆ 2004).

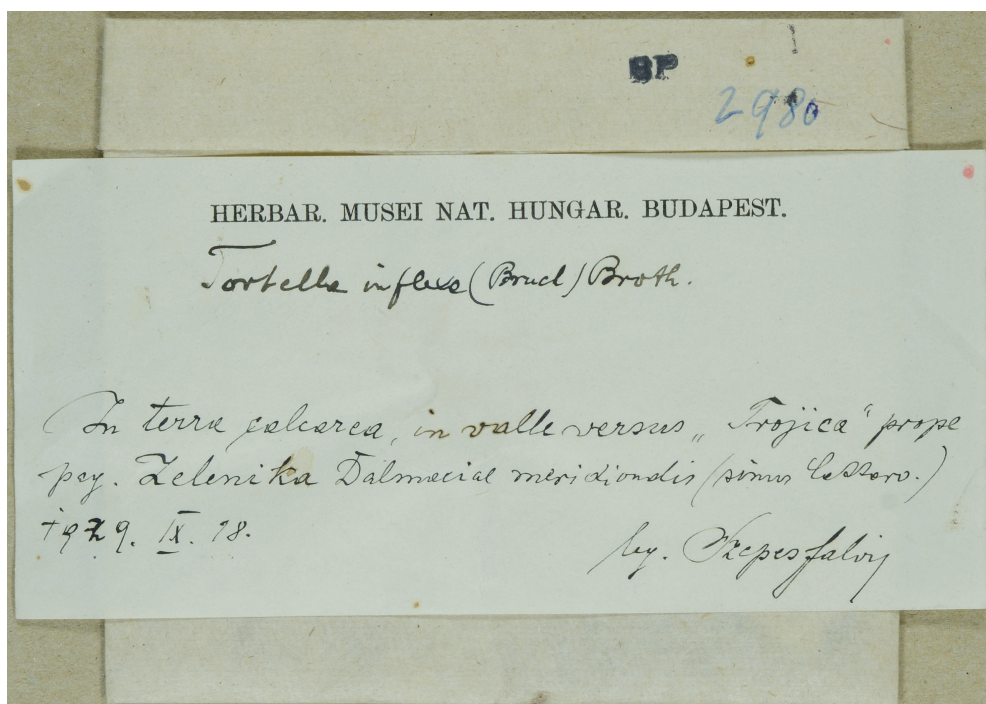


Fig. 18. Specimen of *Tortella inflexa* collected by János Szepesfalvy.

Revised specimens

Zygodon rupestris Schimp. ex Lorentz – Dalmacia merid. In Bocche di Cattaro supra pag. Hof. Zelenika versus mont. Radostak ad truncos Fagi [in Kotor Bay, above Zelenika towards Radostak hill, on *Fagus* bark], 12.09.1929, leg. and det. Szepesfalvy, J., rev. Papp, B. 07.2022 (BP 8482)

(Fig. 19), SZEPESFALVY (1931), deposited in the herbarium under the name *Z. viridissimus* (Dicks.) Brid. subsp. *viridissimus*. – Comment: In the past *Z. rupestris* was treated as a subspecies of *Z. viridissimus* (DÜLL *et al.* 1999). The main distinguishing characters: *Z. rupestris* is yellow green having 20–30 µm wide gemmae without longitudinal cell walls, while *Z. viridissimus* is green to dark green bearing 30–40 µm wide gemmae with some longitudinal cell walls (SMITH 2004). The occurrence of this taxon in Montenegro is doubtful depending on some records of *Z. viridissimus* found near Herceg Novi (WEISS 1866, SCHIFFNER 1902b, LATZEL 1931), which should be checked.

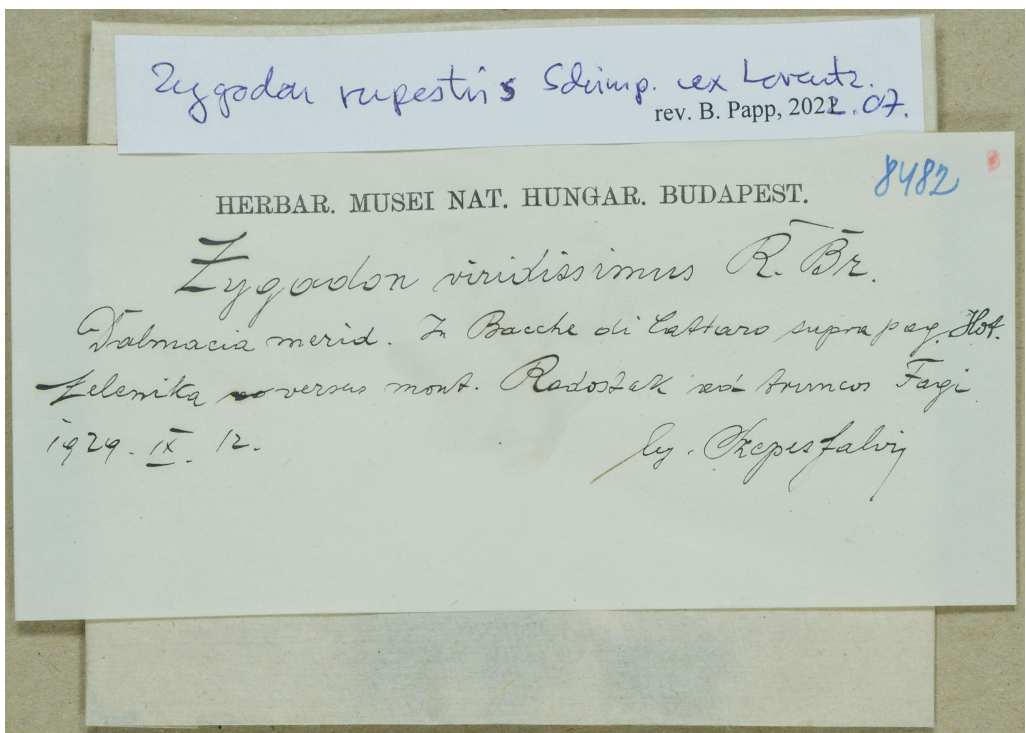


Fig. 19. Revised specimen of *Zygodon* collected by János Szepesfalvy.

László Vajda (1890–1986), Hungarian bryologist, first a bank official, but later, from 1952, he worked at the Hungarian Natural History Museum. He visited Montenegro in 1966 and 1975. He collected 82 specimens near Kotor and Herceg Novi. These data have never been published. Below we give a list of the specimens and revisions as well.

Barbula unguiculata Hedw. – 1) Kotor. In rupibus umbrosis [on shaded rocks], 07.06.1966, leg. and det. Vajda, L. (BP 71814). – 2) Kotor. In rupestribus [on rocks], 07.06.1966 and 06.1975, leg. and det. Vajda, L. (BP 71823 and BP 158956). – 3) Kotor. In rupibus calcareis [on calcareous rock], 06.1975, leg. and det. Vajda, L. (BP 158957).

Brachythecium rutabulum (Hedw.) B., S. et G. – Herceg Novi. In corticem palmae [on bark of palm trees], 02.06.1966, leg. and det. Vajda, L. (BP 71896).

Brachythecium salebrosum (Web. et Mohr) B., S. et G. – 1) Kotor. In fruticetis [in fruit garden], 07.06.1966, leg. and det. Vajda, L. (BP 71894). – 2) Herceg Novi. In corticem palmae [on bark of palm trees], 02.06.1966, leg. and det. Vajda, L. (BP 72097).

Bryum argenteum Hedw. – Kotor. In rupibus calcareis [on calcareous rock], 06.1975, leg. and det. Vajda, L. (BP 158964).

Cinclidotus aquaticus (Hedw.) B. et S. – Kotor. In rupibus irrigates [on wet rocks], 07.06.1966, leg. and det. Vajda, L. (BP 71841 and Bp 71842).

Cratoneuron flicinum (Hedw.) Spruce – Kotor. In rupibus irrigates [on wet rocks], 07.06.1966, leg. and det. Vajda, L. (BP 71884).

Didymodon fallax (Hedw.) R. H. Zander – Herceg Novi. In rupibus calcareis siccis [on dry rocks], 02.06.1966, leg. and det. Vajda, L., rev. Papp, B. 12.2022, sub nom. *Schistidium apocarpum* (Hedw.) B. et S. var. *epilosa* Warnst. (BP 71848) (Fig. 20).

Didymodon luridus Hornsch. – 1) Kotor. In rupibus umbrosis [on shaded rocks], 07.06.1966, leg. and det. Vajda, L. (BP 71804). – 2) Dalmatia. In rupibus calcareis apricus prope pag. Kotor [on sunny calcareous rocks], 06.1975, leg. and det. Vajda, L. (BP 158952).

Didymodon rigidulus Hedw. – Dalmatia. In rupibus calcareis apricus prope pag. Kotor [on sunny calcareous rocks], 06.1975, leg. and det. Vajda, L. (BP 158953).

Didymodon tophaceus (Brid.) Lisa – Dalmacia. In rupibus irrigatis prope pag. Kotor [on wet rocks], 08.06.1966, leg. and det. Vajda, L. (BP 74846).

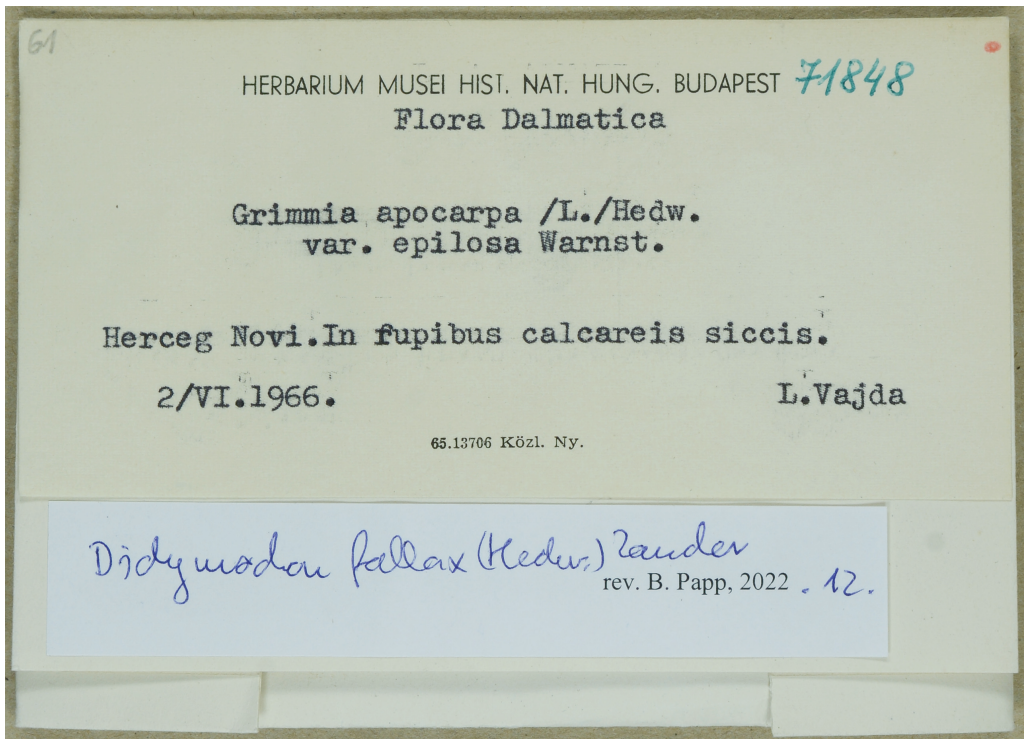


Fig. 20. Revised specimen of *Schistidium apocarpum* collected by László Vajda.

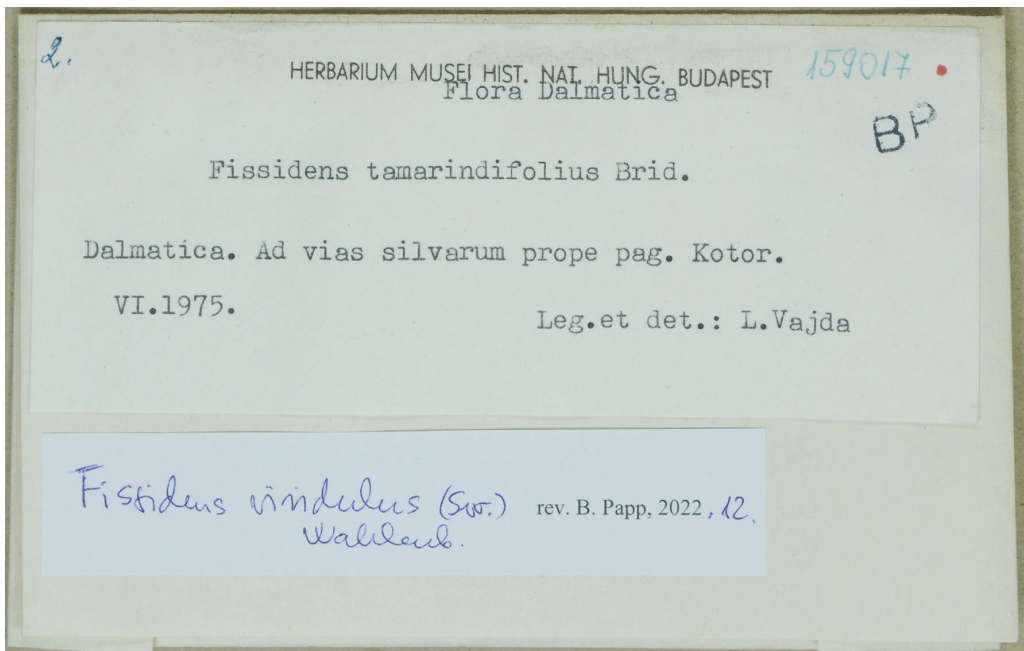


Fig. 21. Revised specimen of *Fissidens* collected by László Vajda.

Eucladium verticillatum (With.) Bruch et Schimp. – Kotor. 06.1975, leg. and det. Vajda, L. (BP 159011).

Fissidens viridulus (Sw.) Wahlenb. – Dalmatica. Ad vias silvarum prope pag. Kotor [at forest road], 06.1975, leg. and det. Vajda, L. rev. Papp, B. 12.2022, sub nom. *F. tamarindifolius* Brid. (BP 159017) (Fig. 21).

Frullania dilatata (L.) Dumort. – Kotor, in corticem [tree bark], 06.1975, leg. and det. Vajda, L. (BP 45566/H).

Entosthodon muhlenbergii (Turner) Fife – Kotor. 06.1975, leg. and det. Vajda, L., sub nom. *Funaria muehlenbergii* Turn. conf. Papp, B. 2008 (BP 159018).

Entosthodon pulchellus (H. Philib.) Brugués – Herceg Novi. In rupestribus [on rocks], 02.06.1966, leg. and det. Vajda, L., sub nom. *Funaria mediterranea* conf. Papp, B. 2008 (BP 71855).

Grimmia pulvinata (Hedw.) Sm. – Herceg Novi. In rupibus siccis [on dry rocks], 02.06.1966, leg. and det. Vajda, L. (BP 71846).

Gymnostomum aeruginosum Sm. – Kotor. In rupibus calcareis [on calcareous rocks], 06.1975, leg. and det. Vajda, L. (BP 159025).

Gymnostomum calcareum Nees et Hornsch. – 1) Kotor. In rupibus calcareis umbrosis [on shaded calcareous rocks], 07.06.1966, leg. and det. Vajda, L. (BP 71748). – 2) Herceg Novi. In rupibus calcareis umbrosis cavernae [on shaded calcareous rocks at a cave], 02.06.1966, leg. and det. Vajda, L. (BP 71752).

Gymnostomum viridulum Brid. – Kotor. In muris umbrosis [on shaded stones], 07.06.1966, leg. and det. Vajda, L., rev. Papp, B. 02.2023, sub nom. *Gyroweisia tenuis* (BP 71759 and BP 71760) (Fig. 22).

Habrodon perpusillus (De Not.) Lindb. – Dalmatia. In corticem *Pinus pinea* prope pag. Kotor [on bark of *Pinus pinea*], 06.1975, leg. and det. Vajda, L. (BP 159026).

Hypnum cupressiforme Hedw. – 1) Herceg Novi. In corticem [on tree bark], 02.06.1966, leg. and det. Vajda, L. (BP 71949). – 2) Kotor, in corticem [on tree bark], 06.1975, leg. and det. Vajda, L. (BP 159032). – 3) Dalmatia. Ad vias silvarum prope pag. Kotor [at forest road], 06.1975, leg. and det. Vajda, L. (BP 159033).

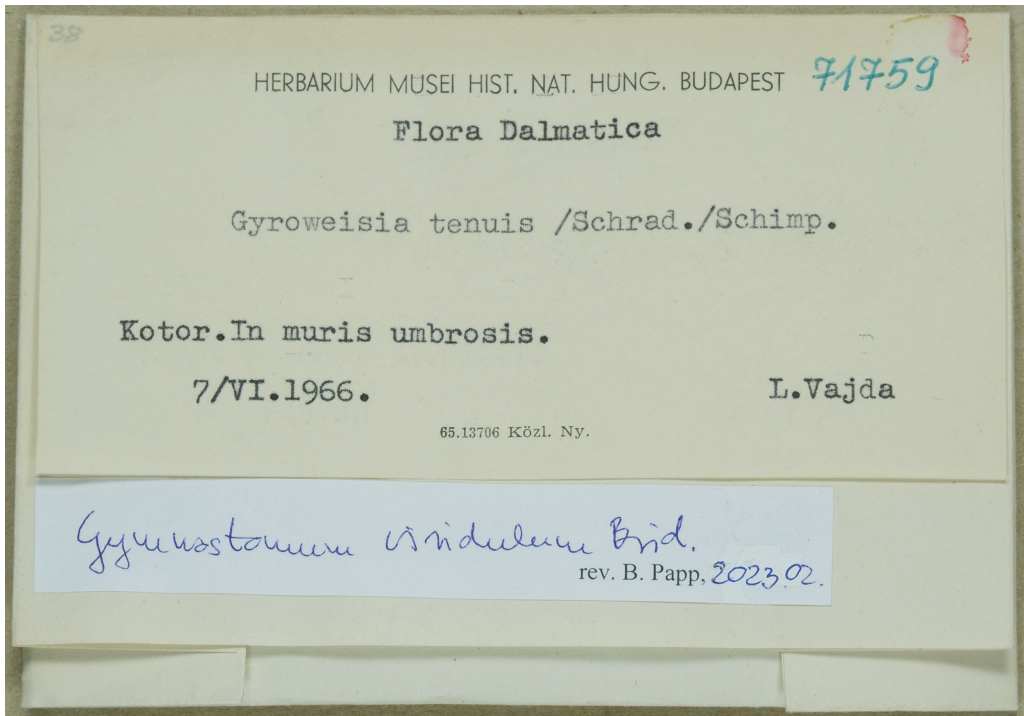


Fig. 22. Revised specimen of *Gyroweisia tenuis* collected by László Vajda.

Lewinskya affinis (Schrad. ex Brid.) F. Lara, Garilleti et Goffinet – Kotor. In corticem [on tree bark], 07.06.1966, leg. and det. Vajda, L. (BP 71868).

Orthotrichum cupulatum Brid. – Herceg Novi. In rupibus calcareis umbrosis [on shaded calcareous rocks], 02.06.1966, leg. and det. Vajda, L., sub nom. *O. cupulatum* Hoffm. var. *sardagnae* Vent. (BP 71870).

Plagiomnium undulatum (Hedw.) T. J. Kop. – Kotor. In fruticetis [in fruit garden], 06.1975, leg. and det. Vajda, L. (BP 159039).

Plasteurhynchium striatulum (Spruce) M. Fleisch. – Kotor. In rupibus umbrosis [on shaded rocks], 07.06.1966, leg. and det. Vajda, L. rev. Papp, B. 07.2022, sub nom. *Eurhynchium meridionale* (B., S. et G.) De Not. (BP 71914) (Fig. 23). – Comments: *Plasteurhynchium meridionale* (Schimp.) M. Fleisch. (*Eurhynchium meridionale* (B., S. et G.) De Not.) has two other old data from Rijeka Crnojevića (HÖHNEL 1894) and Herceg Novi, Porto Rose (LATZEL 1931).

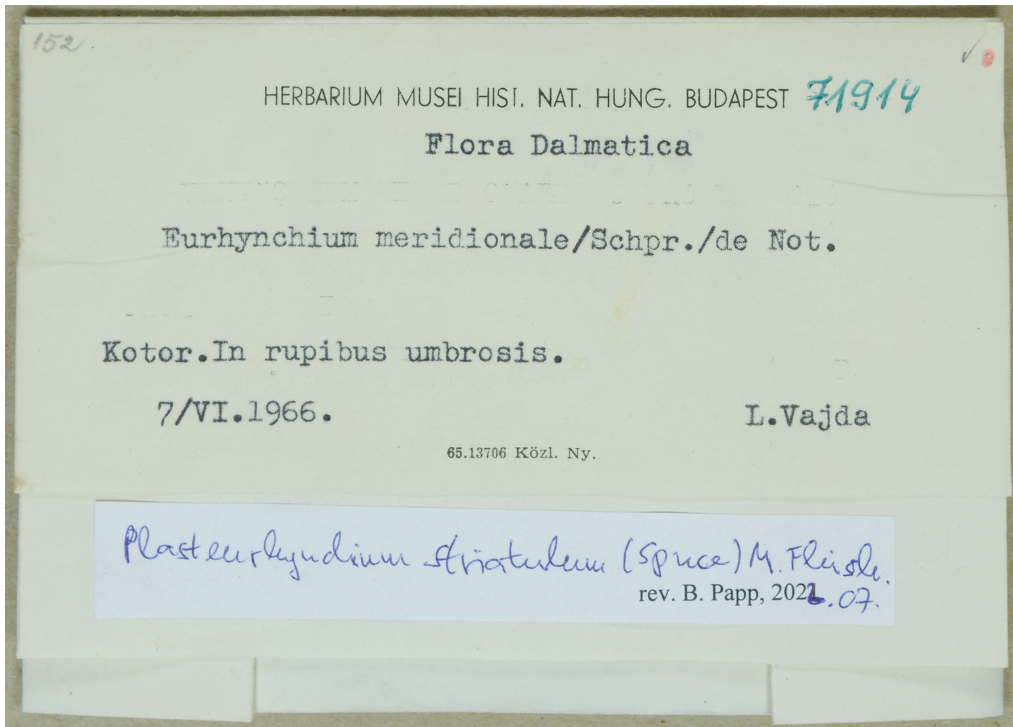


Fig. 23. Revised specimen of *Eurhynchium meridionale* collected by László Vajda.

Porella platyphylla (L.) Pfeiff. – Kotor. In rupibus umbrosis [on shaded rocks], 07.06.1966, leg. and det. Vajda, L. (BP 25560/H).

Pseudocrossidium hornschuchianum (Schultz) R. H. Zander – 1) Herceg Novi. In rupibus calcareis siccis [on dry rocks], 02.06.1966, leg. and det. Vajda, L. (BP 71800). – 2) Kotor. In rupibus calcareis [on calcareous rock], 06.1975, leg. and det. Vajda, L. (BP 158951).

Ptychostomum capillare (Hedw.) Holyoak et N. Pedersen – 1) Herceg Novi. In corticem palmarum [on bark of palm trees], 02.06.1966, leg. and det. Vajda, L. (BP 71857 and BP 72052). – 2) Kotor. In muris umbrosis [on shaded stones], 07.06.1966, leg. Vajda, L. and det. Papp, B. 02.2023. (BP 71422) (Fig. 24).

Ptychostomum moravicum (Podp.) Ros et Mazimpaka – Herceg Novi. In corticem palmarum [on bark of palm trees], cum *P. capillare*, 02.06.1966, leg. Vajda, L., det. Papp, B. 02.2023 (BP 74185) (Fig. 25).

Reboulia hemisphaerica (L.) Raddi – Kotor. In muris umbrosis [on shaded stones], 07.06.1966, leg. and det. Vajda, L. (BP 25522/H and BP 25561/H).

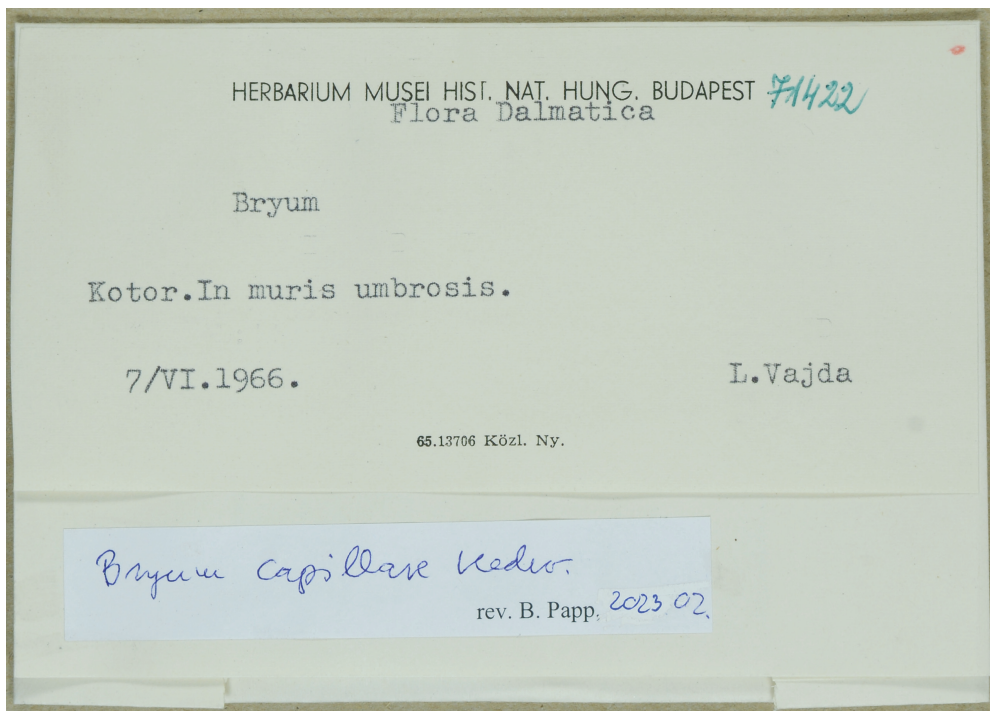


Fig. 24. Determined *Bryum* specimen collected by László Vajda.

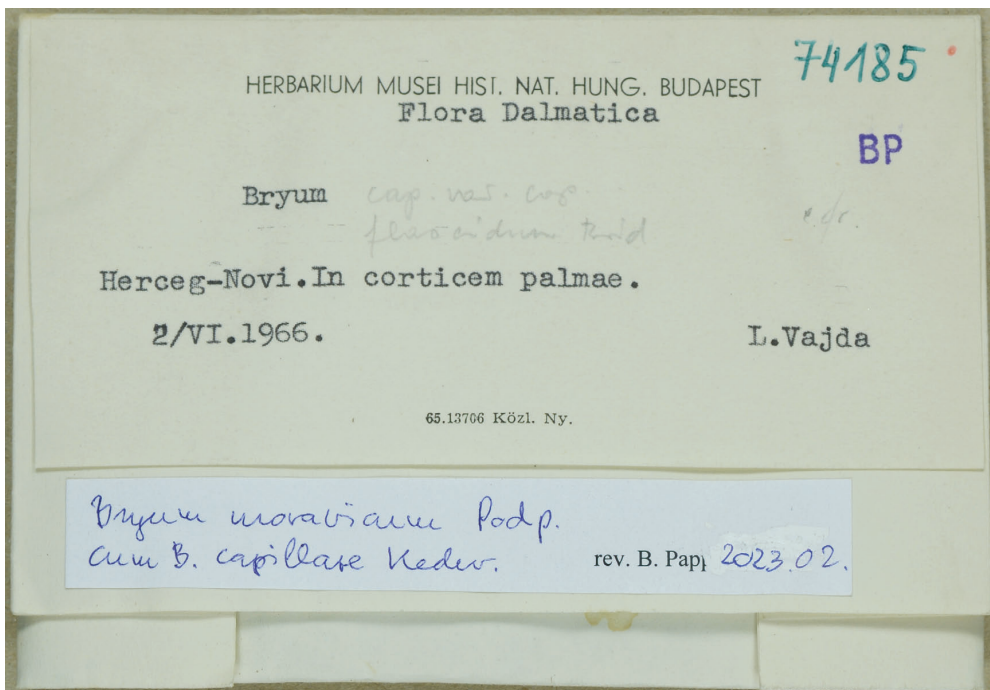


Fig. 25. Determined *Bryum* specimen collected by László Vajda.

Rhynchostegiella curviseta (Brid.) Limpr. – Kotor. In rupestribus [on rocks], 07.06.1966, leg. and det. Vajda, L., rev. Papp, B. 07.2022, sub nom. *Rhynchostegiella pallidirostris* (A. Br.) Loeske = *Eurhynchium pumilum* (Wils.) Schp. (BP 71934) (Fig. 26).

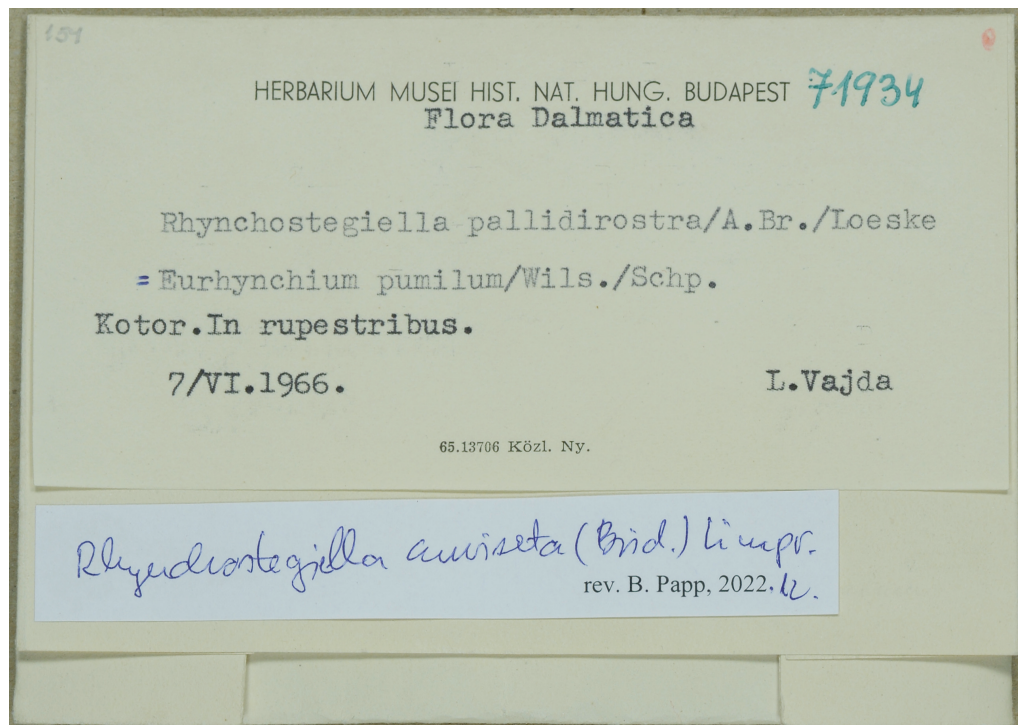


Fig. 26. Revised specimen of *Rhynchostegiella* collected by László Vajda.

Rhynchostegiella tenella (Dicks.) Limpr. – 1) Kotor. In muris umbrosis [on shaded stones], 07.06.1966, leg. and det. Vajda, L. (BP 71927). – 2) Herceg Novi. In rupibus umbrosis [on shaded rocks], 02.06.1966, leg. and det. Vajda, L. (BP 71930). – 3) Herceg Novi. In corticem palmae [on bark of palm tree], 02.06.1966, leg. and det. Vajda, L. (BP 71931).

Rhynchostegium riparioides (Hedw.) Cardot – 1) Dalmacia. In rupibus irrigatis prope pag. Kotor [on wet rocks], 08.06.1966, leg. and det. Vajda, L. (BP 75072). – 2) Dalmatia. Kotor, 06.1975, leg. and det. Vajda, L. (BP 159060).

Scorpiurium circinatum (Brid.) M. Fleisch. et Loeske – 1) Kotor. In muris umbrosis [on shaded stones], 07.06.1966, leg. and det. Vajda, L. (BP 71909).

– 2) Dalmatica. In rupibus calcareis apricus prope pag. Kotor [on sunny calcareous rocks], 06.1975, leg. and det. Vajda, L. (BP 159012). – 3) Kotor. In rupestribus [on rocks], 06.1975, leg. and det. Vajda, L. (BP 159013). – 4) Kotor. In fruticetis [in fruit garden], 06.1975, leg. and det. Vajda, L. (BP 159014). – 5) Dalmatia. Kotor, 06.1975, leg. and det. Vajda, L. (BP 159015).

Syntrichia laevipila Brid. – Dalmatia. In corticem *Thuja* prope pag. Kotor [on bark of *Thuja*], 06.1975, leg. and det. Vajda, L. (BP 159071 and BP 159072).

Syntrichia montana Nees – 1) Kotor. In rupibus calcareis siccis [on dry calcareous rocks], 07.06.1966, leg. and det. Vajda, L. (BP 76179). – 2) Kotor. In rupibus calcareis [on calcareous rocks], 07.06.1966, leg. and det. Vajda, L. (BP 71834). – 3) Kotor. In rupibus siccis [on dry rocks], 07.06.1966, leg. and det. Vajda, L. (BP 71835). – 4) Herceg Novi. In rupibus siccis [on dry rocks], 02.06.1966, leg. and det. Vajda, L. (BP 71836). – 5) Herceg Novi. In rupibus calcareis umbrosis [on shaded calcareous rocks], 02.06.1966, leg. and det. Vajda, L. (BP 71837). – 6) Kotor. In rupibus calcareis [on calcareous rocks], 06.1975, leg. and det. Vajda, L. rev. Papp, B. 2008, sub nom. *S. princeps* (De Not.) Mitt. (BP 159073) (Fig. 27). – 7) Kotor. In rupibus [on rocks], 06.1975, leg. and det. Vajda, L. rev. Papp, B. 2008, sub nom. *S. princeps* (De Not.) Mitt. (BP 159074) (Fig. 27). – Comment: The record of *S. princeps* from Podgorica, Velje brdo published in PAVLETIĆ and PULEVIĆ (1980) should be checked, otherwise the occurrence of this taxon in Montenegro is doubtful.

Tortella flavovirens (Bruch) Broth. – 1) Herceg Novi. In rupibus calcareis siccis [on dry rocks], 02.06.1966, leg. and det. Vajda, L. (BP 71777). – 2) Kotor. In muris umbrosis [on shaded rocks], 07.06.1966, leg. and det. Vajda, L. (BP 71775). – 3) Kotor. Dalmacia, 06.1975, leg. and det. Vajda, L. (BP 159076).

Tortella inclinata (R. Hedw.) Limpr. – Kotor. In muris umbrosis [on shaded rocks], 07.06.1966, leg. and det. Vajda, L. (BP 71786).

Tortella nitida (Lindb.) Broth. – 1) Kotor. In rupestribus [on rocks], 07.06.1966, leg. and det. Vajda, L. (BP 71782). – 2) Kotor. In rupibus calcareis [on calcareous rock], 06.1975, leg. and det. Vajda, L. (BP 159077 and BP 159078).

Tortula muralis Hedw. – 1) Herceg Novi. In rupibus umbrosis [on shaded rocks], 02.06.1966, leg. and det. Vajda, L. (BP 71825). – 2) Kotor. In muris

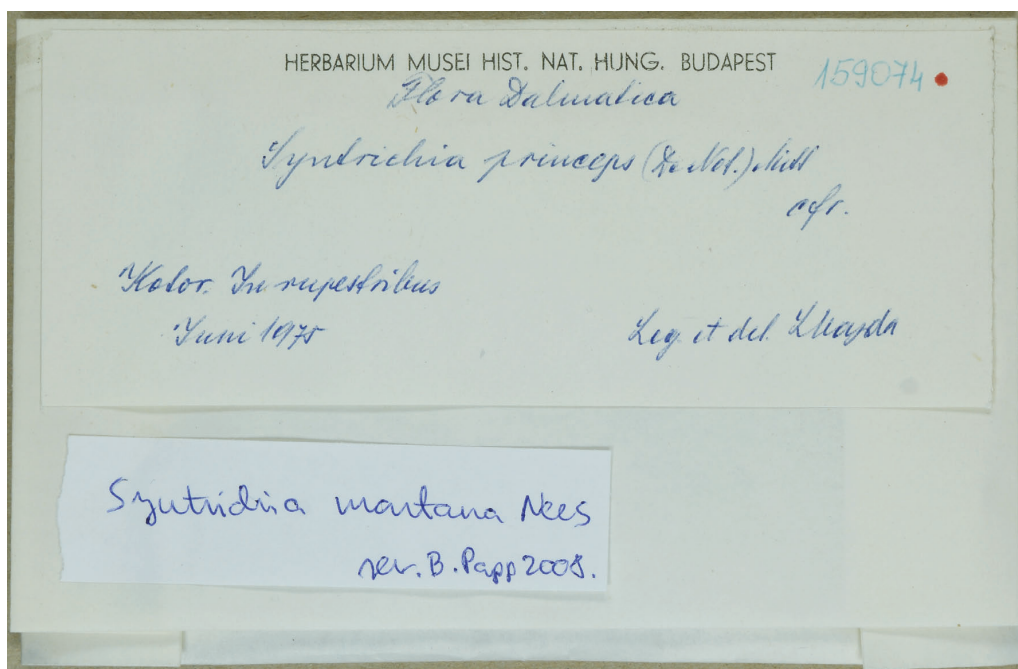
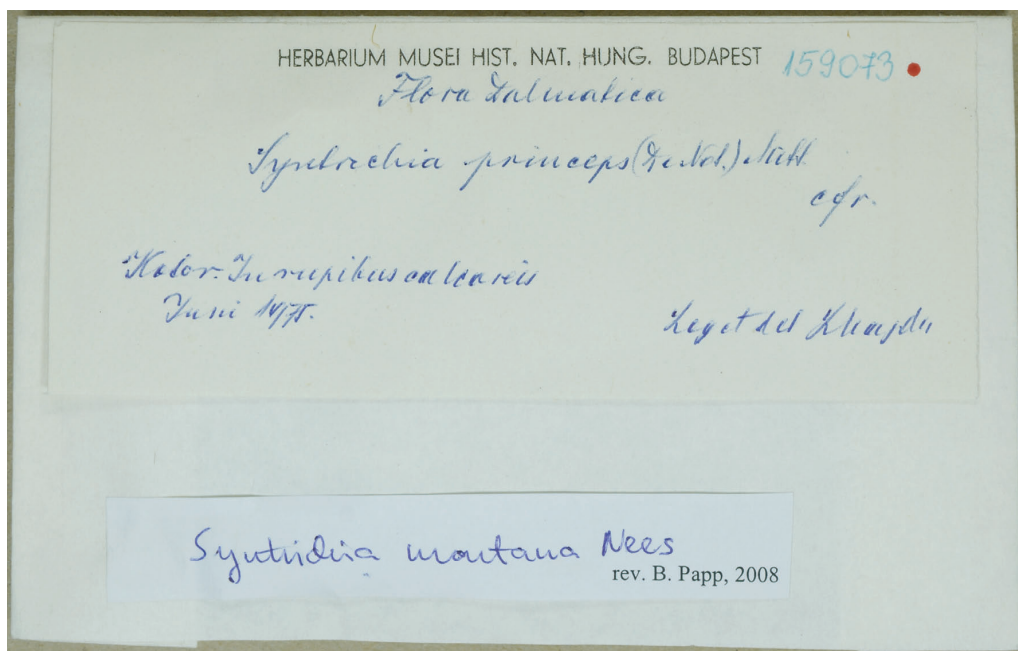


Fig. 27. Revised specimens of *Syntrichia princeps* collected by László Vajda.

umbrosis [on shaded stones], 07.06.1966, leg. and det. Vajda, L. (BP 71828 and BP 71831). – 3) Dalmatia. In rupibus calcareis apricus prope pag. Kotor [on sunny calcareous rocks], 06.1975, leg. and det. Vajda, L. rev. Papp, B. 07.2022, sub nom. *T. canescens* Mont. (BP 159079) (Fig. 28). – Comment: *T. canescens* has other historical records from Budva and Herceg Novi published in LATZEL (1931), and from Kotor by WEISS (1867), which would be important to check.

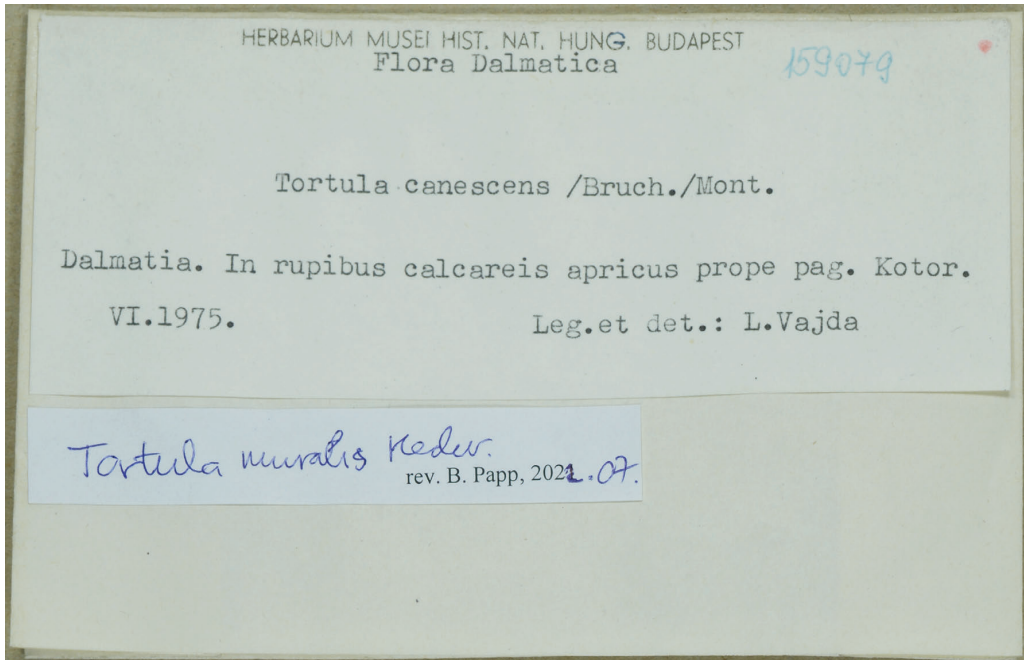


Fig. 28. Revised specimen of *Tortula canescens* collected by László Vajda.

Trichostomum crispulum Bruch – 1) Herceg Novi. In rupibus siccis [on dry rocks], 02.06.1966, leg. and det. Vajda, L. (BP 71764). – 2) Kotor. In rupestribus [on rocks], 07.06.1966, leg. and det. Vajda, L. (BP 71766). – 3) Kotor. In rupibus siccis [on dry rocks], 07.06.1966, leg. and det. Vajda, L. (BP 71768). – 4) Dalmatia. In rupibus calcareis apricus prope pag. Kotor [on sunny calcareous rocks], 06.1975, leg. and det. Vajda, L. (BP 159080).

Ulotia crispula Bruch – Kotor. In corticem *Quercus* [on *Quercus* bark], 06.1975, leg. and det. Vajda, L. conf. Caparrós, R. 05.2011 (BP 159082). – Comments: The study of CAPARRÓS *et al.* (2016) divides the *Ulotia crispula*

complex for three species; *U. crispa* s.s., *U. crispula* Bruch and *U. intermedia* Schimp. The work of BLOCCKEEL (2017) also helps the correct identification of *Ulota* species. Based on revisions this specimen is *U. crispula*.

Weissia brachycarpa (Nees et Hornsch.) Jur. – Kotor. In muris umbrosis [on shaded stones], 07.06.1966, leg. and det. Vajda, L. (BP 71743).

Wessia sp. – Dalmatia. In rupibus calcareis apricus prope pag. Kotor [on sunny calcareous rocks], 06.1975, leg. and det. Vajda, L. rev. Papp, B. 07.2022 (BP 159081), deposited in the herbarium under the name *W. triumphans* (De Not.) M. Hill. – Comment: The specimen held in the HNHM has no sporophyte. *Pottiopsis caespitosa* (Brid.) Blockeel et A. J. E. Sm. (*Weissia triumphans* (De Not.) M. Hill) has an old record from Herceg Novi by LATZEL (1931) and from the Tara River Canyon (GRGIĆ 1989). It would be important to check these specimens, too.

CONCLUSIONS

184 specimens collected between 1890 and 1975 from Montenegro were found in the Bryophyte Collection of the Hungarian Natural History Museum (HNHM). Only 20% of them were published (LOITLESBERGER 1905, SCHIFFNER 1902a, b, 1906, 1916, SZEPESFALVY 1931). The unpublished specimens are given in this paper. The specimens (with one exception: Ostrog) were collected in the southern part of Montenegro. The famous collectors of the Dalmatian coast at the beginning of the 20th century mostly did not go further south from Herceg Novi. The significant number of specimens from Kotor derives from later due to the collecting events of László Vajda in 1966 and 1975.

Most of the species are common, widespread members of the Montenegrin flora, but some rare elements were also found. The rare liverworts from the surrounding of Herceg Novi are the most important from the point of view of nature conservation. Among them *Cephaloziella turneri* and *Scapania compacta* are characteristic Mediterranean, sub-Mediterranean species (DÜLL 1983) of acidic soil, which kind of habitats are rare in the region dominated mostly by limestone bedrock. Begovina and Savina settlements are mentioned on the labels, which makes possible the location of these acidic sites based on old Austro-Hungarian maps. Gathering data on the existing population of these species has crucial importance for the preparation of a new bryophyte Red list of Montenegro. Hence, to find and investigate such habitats in the vicinity of Herceg Novi are recent, urgent tasks. Populations of some Mediterranean species (DÜLL 1983, 1984) rare

in Montenegro, like liverworts *Myriocoleopsis minutissima* and *Southbya tophacea* and the moss *Tortella inflexa*, should also be searched for in the surrounding of Herceg Novi or in whole Kotor Bay.

Besides the rarities, the historic labels provide data on the collecting sites in the past, which makes possible to trace the changes over 100 years in a region under high pressure of tourism.

* * *

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Összefoglaló: A Magyar Természettudományi Múzeum Mohagyűjteményében 184 olyan montenegrói példányt találtunk, amelyeket 1890 és 1975 között gyűjtött tíz különböző botanikus. A példányok többsége (40%) a Kotori-öbölben található Herceg Novi közeléből származik. Egy másik tetemes részüket (35%) Kotor közelében gyűjtötték, 18%-ukat pedig az Orjen-hegységben, amely szintén a Kotori-öbölhöz közel található. A többiek elszórt, kisebb gyűjtések főleg Montenegró déli részéről. A példányok 80%-a nincs publikációkban leközölve. A fajok többsége gyakori, elterjedt tagja a régió mohafldrájának, de néhány Montenegróban ritka mediterrán, szubmediterrán májmoha is előkerült, mint a *Myriocoleopsis minutissima* és a *Southbya tophacea*, vagy a savanyú talajhoz kötődő *Cephaloziella turneri* és *Scapania compacta*. Természetvédelmi szempontból ezek a Herceg Novi környéki lelőhelyekről származó májmoha populációk a legértékesebbek. Megléttük ellenőrzése, valamint további populációk keresése és védelmük biztosítása sürgős feladat ebben az erős turisztikai nyomásnak kitett régióban.

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