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***Banatozamites remotus* Czier sp. nov.**  
**(Cycadeoidales) from the Lower Jurassic**  
**of Anina, Romania**

*Zoltán Czier*

*Țării Crișurilor Museum, B-dul Dacia 1-3, 410464 Oradea, Romania*  
*e-mail: stiintelenaturii@mtariicrisurilor.ro*

**Abstract.** *Banatozamites remotus* – a new species of the Bennettitalean genus *Banatozamites* Czier 1996 – is described from Anina, a mining locality in Banat region, south-west Romania. The material originates from the Valea Terezia Member of the Steierdorf Formation, from Hettangian *pro parte* – Sinemurian continental deposits of the Getic Realm. The leaf has remotely disposed pinnules, the species being named after this character. The pinnules possess slightly obliquely arising veins, adaxial epidermis with trichomate cells disposed in conspicuous rows, abaxial epidermis with irregularly scattered stomata and strongly trichomate epidermal cells. The stomatal apparatus has semicircular guard cells with half-ring-shaped outer thickenings, being sunken in a pit covered by centripetal disposed roof-cells. The covering roof is circular, with rectangular mouth. *Banatozamites remotus* appears only in the *B. chlamydomus* Subzone of the *Clathropteris meniscioides* Biozone. The genus and its species are endemic elements of the European Mesophytic.

**Keywords.** Macroflora, Mesophytic, Romania.

### **Introduction**

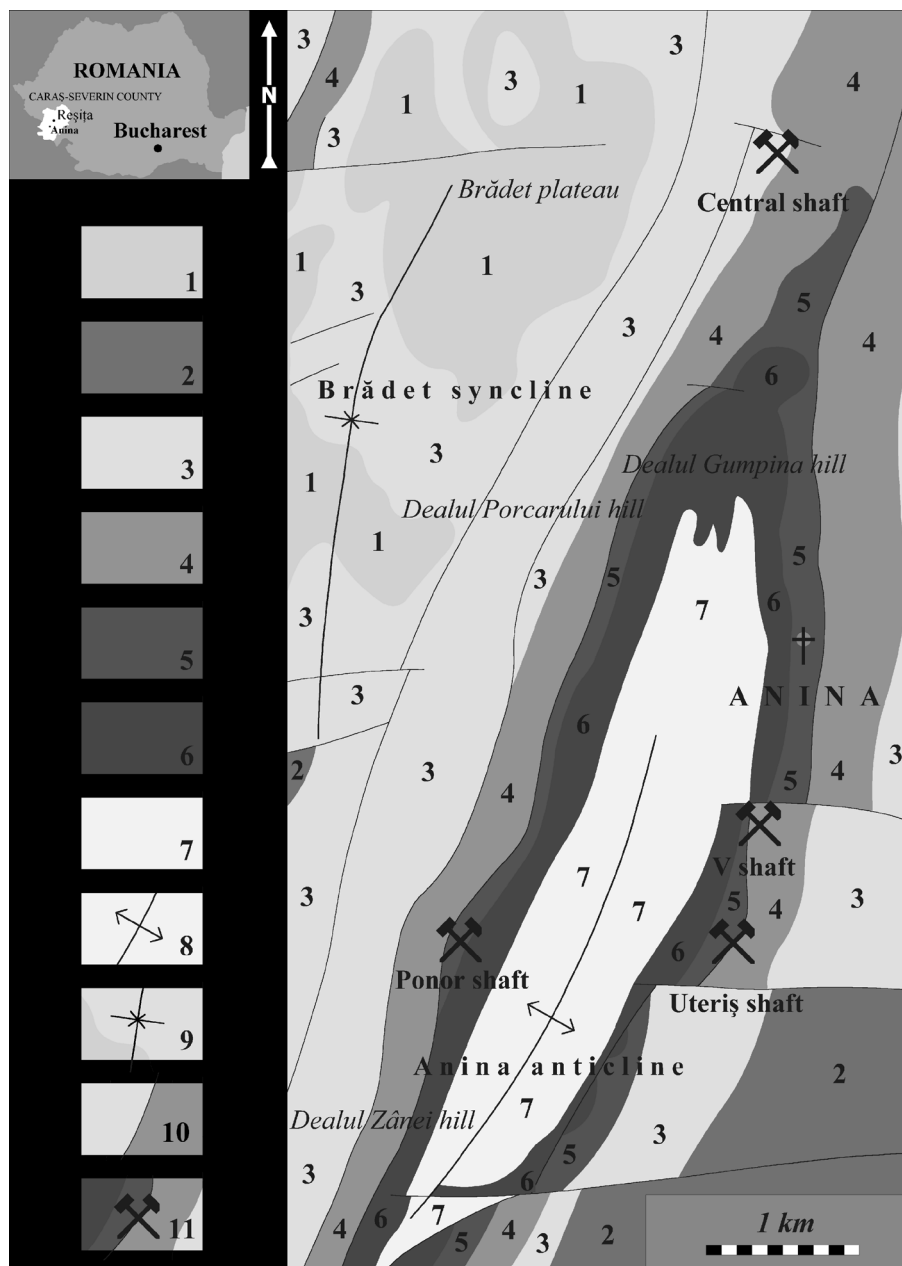
This paper constitutes a continuation of a series of investigations accomplished by the author on the lower Jurassic macroflora of Anina (Czier 1995, 1996,

1998a, 1998b, 1999, 2000a, 2000b, 2000c, 2000d, 2001a, 2001b, 2001c, 2003). Anina is not just one of the most important coal-mining localities of the Banat region, south-west Romania, but also one of the most important fossil flora localities of the European Mesophytic. Before the First World War this locality was part of the Austrian-Hungarian Monarchy, and in the old literature also appears under the name Steierdorf or Stájerlak. Fossil plant collections with beautiful specimens originating from this locality, collected mostly in the 19<sup>th</sup> Century, are kept in Romania, Austria, Hungary, and possibly in other countries. One of these collections is that of the Botanical Department of the Hungarian Natural History Museum in Budapest (HNHM-BP). It has been studied by the author, some preliminary results being published in his thesis summary (Czier 2001c). In the past few years the author has redetermined some specimens of the collection. Several new species have been found belonging to the Cycadeoidales (Bennettitales) order. One of these new species is presented in this paper.

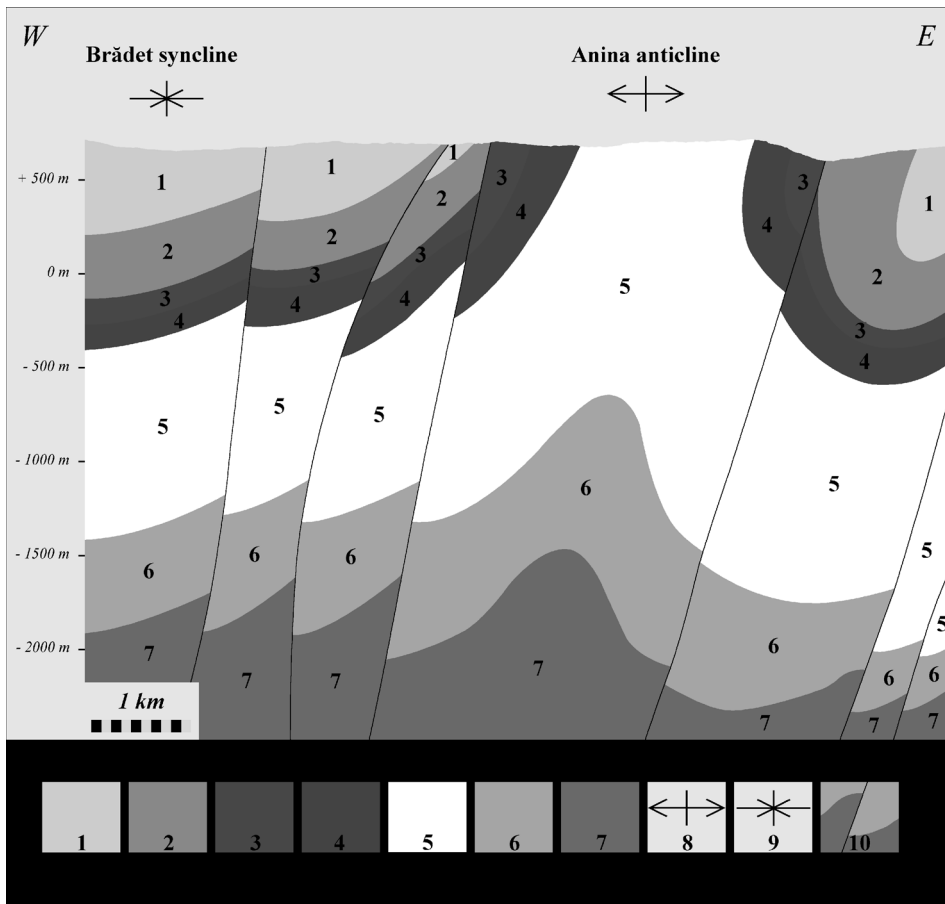
### **Geological data regarding the fossiliferous deposits**

The Anina fossil flora mainly originates from the coal mines situated on the flanks of the anticline that bears the same name (Fig. 1). The coal-field was extensively exploited in the 19<sup>th</sup> – 20<sup>th</sup> Centuries, because the coals are of a good quality. However, besides the incontestable economical value, the exploitation was very important also from scientific point of view. It was a really impellent force for the general progress of the regional geological researches, bringing a substantial contribution not only to the knowledge about the lithology of the coal-bearing and adjacent deposits, but also to the enrichment of famous palaeontological collections from Budapest, Vienna, Timisoara, Bucharest. Despite of all these, the real scientific value of many plant fossils – collected mainly by the miners – a long time was unknown. It becomes more and more better known at the present time, when it is possible to accomplish studies not only on newly collected specimens but also on old collections that may contain still unstudied material. Now it is also possible to restudy specimens using modern methods. The data can be processed much more quickly, and the results may be interpreted in the context of the actual level reached by the science.

The Anina coal bed is situated in the lower Jurassic continental deposits of the Alpine sedimentary from the Reșița – Moldova Nouă zone that belongs to the Getic Realm of the Southern Carpathians. The plant fossils appear in the base- and top-cover of the coal-layers, as well as in many sterile intercalations. The thickness of the whole pocket with fossil flora bearing horizons is between 300



**Fig. 1.** Geological sketch of the fossil plant locality Anina. Based on Bițoiu 1987, with modifications. 1 - Quaternary; 2 - Lower Cretaceous; 3 - Oxfordian - Tithonian; 4 - Aalenian - Callovian; 5 - Pliensbachian - Toarcian; 6 - Hettangian pro parte - Sinemurian; 7 - Lower Permian; 8 - Anticline axe; 9 - Syncline axe; 10 - Fault; 11 - Mine.



**Fig. 2.** Geological cross-section of the Anina area. From Bițoianu 1987, with modifications. 1 - Oxfordian - Tithonian; 2 - Aalenian - Callovian; 3 - Pliensbachian - Toarcian; 4 - Hettangian pro parte - Sinemurian; 5 - Lower Permian; 6 - Upper Carboniferous; 7 - Crystalline basement; 8 - Anticline axis; 9 - Syncline axis; 10 - Fault.

– 500 m (Fig. 2).

Fossil macroflora has been recorded in the mining area also within the Permian deposits (Roth v. Telegd 1890; Răileanu *et al.* 1957). The mentioned Permian deposits (lower Permian), represented by a succession of conglomerates, microconglomerates, sandstones and clays of a red-violet colour, belong to the Variscan molasse – to the Lișava Member of the Ciudanovița Formation (Bucur 1991). They constitute the fundament of the coal-bearing deposits, and occur in the central axis of the anticline. The reddish horizon contains also microfauna, which indicates Autunian age (Bițoianu 1987).



The deposits of the alpine sedimentary cycle are unconformable over the Permian deposits. The first preserved layers of this cycle belong to the Jurassic – the cartographically delimited intervals contain all its stages. The lower Liassic (Hettangian – Sinemurian) deposits consist of conglomerates, microconglomerates, sandstones of a large variety of granulation, siltstones, more or less refractory clays, coals. The facies is much resemblant to that known at Gresten in Austria. The likeness is strong, as the Triassic carbonate fundament at Gresten also fails (Lachkar *et al.* 1984). From a lithostratigraphical point of view, the mentioned facies corresponds in Banat region to the Steierdorf Formation, divided in two members. The basal sequence, where the coarse detrital material predominates, constitutes the Dealul Budinic Member. The coal bearing sequence above constitutes the Valea Terezia Member. Popa (2001) mentions some very scarce micro- or macroflora preserved in the member below, but does not publish further data about them, nor about the very rich microflora that he mentioned to be present in the member above. According to Bucur (1991, 1997), the Budinic Member is Hettangian *pro parte* in age, and the Valea Terezia Member is dated Hettangian *pro parte* – Sinemurian.

The fine lithological sequences of the Valea Terezia Member of the Steierdorf Formation, especially the blackish siltstones and the finely granulated sandstones, contain numerous horizons with plant macrofossils. They are coalified impressions and compressions, generally good or very good preserved – sometimes even exceptionally. The flora was recorded by Foetterle (1850) who also gave a first list of the taxa. Foetterle (1852) concluded that the Anina flora is Liassic (lower Jurassic) in age – this dating is accepted since then. Ettingshausen (1852a, 1852b) recorded in that year already new material collected from this fossil locality, and was the first who also described the specimens, even if not all of them. However, the list of the known taxa became much more complete, and Anina a scientifically important locality, comparable with the most famous Mesophytic localities of Europe (Lunz, Scoresby Sound, Bornholm, Yorkshire, etc.). Three years after, Andrae (1855) published a monograph of the flora – that is a basic work referred to by many authors. The palaeobotanical data have been proved to be very useful especially in works of synthesis, e.g. those written by Kudernatsch (1855, 1857) who has redacted the first geological monograph and geological map of the Banat region. Numerous studies, old and new, regarding the flora, are mentioned in papers dealing with the history of the researches, and further comments can be read there (Semaka 1962a; Givulescu and Czier 1990; Givulescu 1998; Czier 2000a). The palaeobotanical researches continue up to our days, and they nevertheless will continue, because the flora is very rich one, both in number of taxa and



of specimens. At the end of the past century the flora contained 97 species (Czier 2000a). Now, the number of species is over 100 – the exact number will be known only when the researches will be ended, and when someone will accomplish the final revision of the flora.

The lower Liassic deposits are overlaid with up to 200 m thick horizon of black bituminous argillites, in some places with siderite concretions and thin coal intercalations. This horizon contains sporadic fossil plant remains, both of microflora (Antonescu 1973; Năstăseanu 1984) and macroflora (Andrae 1855). These deposits are assigned to the Uteriș Member of the Steierdorf Formation, being Pliensbachian in age (Bucur 1997).

Over the middle Liassic deposits lay Toarcian marls and calcareous marls with sandy marlstone intercalations. They constitute the Valea Sodol Member (Czier 2000b) – the first part of the Dealul Zânei Formation that entirely is dated Toarcian – lower Callovian (Bucur 1997). The marly deposits contain *Pseudogrammoceras* aff. *quadratum*, *Grammoceras fallaciosum*, *Cucullea cancellata*, and other invertebrate fossils (Mutihac 1959; Semaka 1962b; Năstăseanu 1964; Bucur 1997). They also contain a macroflora assemblage with *Cheirolepis münsteri*, *Williamsoniella vittata*, *Ptilophyllum rigidum* and a few of other taxa (Semaka 1962b).

The upper Liassic deposits are conformably overlaid by the second part of the Dealul Zânei Formation, lithologically represented by marlstones and marly sandstones. These layers contain *Ludwigia munchisonae*, *Neera kudernatschi*, *Gryphaea calceola* and other fossil invertebrates, as well as *Otozamites decorus* and some other plant megafossils, which according to Semaka (1962b) prove the lower Aalenian age.

From the rest of the Jurassic deposits, and from those belonging to the lower Cretaceous and to the Quaternary around Anina, no macroflora fossils are known.

The modern methods applied in the field of palaeobotany, e.g. the *in situ* study of the spores and the cuticular study with the scanning electron microscope (SEM) allow us getting more and more detailed knowledge about the characters of diverse taxonomic categories. However, this is not all. Finally, they permit us implicit to build and to complete our image on the flora and vegetation of each geological period, and to reconstruct the characteristic environments and taphonomic processes. In the present days, when the coal-mining industry is in a general regress, and many mines are closed, the possibilities of collecting new plant fossils from the underground are very restricted. In this context, the old palaeontological collections, mainly those which contain still unstudied specimens, may present exceptional scientific value.

## Material and methods

The material described in this paper consists of a hand specimen (HNHM-BP. 602151/1), a microscope slide (NO. 16) and a scanning electron microscope stub (NO. 7 SEM).

The hand specimen was collected from the Anina coal formation, presumably in the 19<sup>th</sup> Century. It was undetermined, on its old label is just written „fern impression”.

Cuticle preparations were made by macerating pinnulae in Schulze's reagent (HNO<sub>3</sub> plus KClO<sub>3</sub>) and neutralizing with KOH. Cuticles were either mounted in glycerine-jelly for microscope slide preparation or on transparent film for SEM preparation.

## Systematic palaeontology

SPERMATOPHYTA  
CYCADEOIDALES

*Banatozamites* Czier 1996

Type. *Banatozamites chlamydostomus* Czier, 1996

*Banatozamites remotus* Czier sp. nov.

Plate 1, figures 1 – 2; Plate 2, figures 1 – 2; Text-figures 3 – 6

2001c *Ptilophyllum* sp. A. Czier, p. 35

*Derivation of name.* Latin, *remoti*, distantly. After the leaflets distanced from each other by gaps. For details see Váczy (1980).

*Holotype.* Hand specimen HNHM-BP. 602151/1 (Pl. 1, fig. 1; Text-fig. 3), microscope slide 16 (Pl. 1, fig. 2; Pl. 2, fig. 2; Text-figs. 4, 6), SEM preparation 7 (Pl. 2, fig. 1; Text-fig. 5).

*Repository.* Botanical Department of the Hungarian Natural History Museum, Budapest, Hungary.

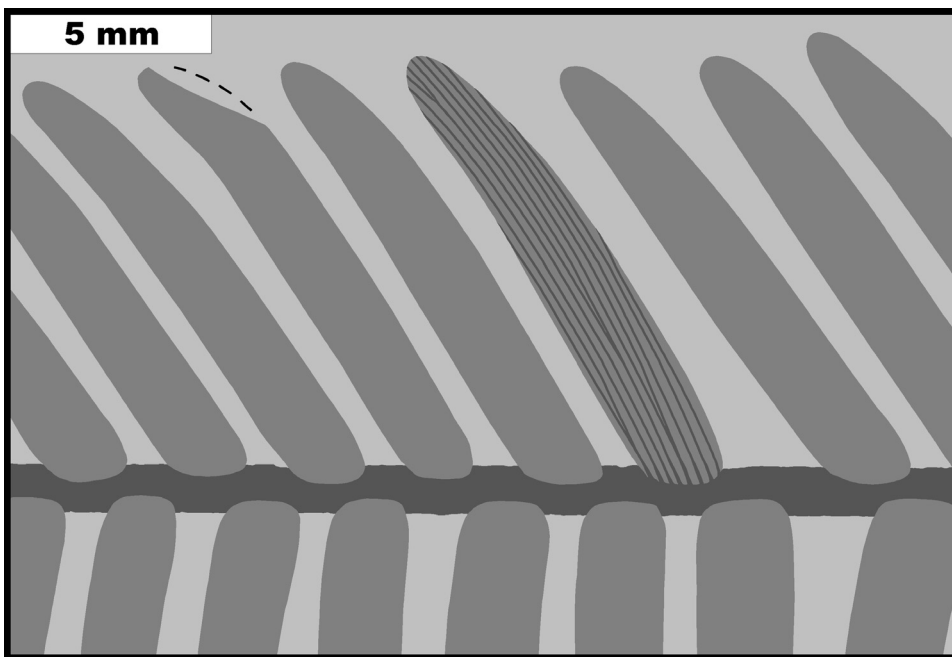
*Type locality.* Anina, Romania.

*Lithostratigraphical unit.* The Valea Terezia Member of the Steierdorf Formation (Bucur 1991).

*Biostratigraphical unit.* The *Banatozamites chlamydostomus* Subzone of the *Clathropteris meniscioides* Biozone (Czier 1999).

*Age.* Hettangian pro parte – Sinemurian.

*Diagnosis.* Leaf gradually narrowing in the distal direction. Rachis partly concealed by the basal portion of alternately disposed pinnules. Pinnules distanced from each other by gaps equalling about half of their width. Pinnules linear or slightly falcate, with margins entire, apex rounded to slightly obtuse. Venation consisting of slightly obliquely arising veins, about half of their number simple, the others once dichotomised at all levels, ending in apex and in the distal half of the margins. Adaxial epidermis composed of dominantly conspicuous rows of rectangular epidermal cells, usually with their longest sides parallel to the margins. Cell walls sinuous, with marked sinuosities. Trichome bases present. Abaxial epidermis with irregularly scattered stomata. Epidermal cells of the abaxial epidermis differing from those of the adaxial one in possessing less sinuous walls, a hollow papilla, and very numerous trichome bases. Stomatal apparatus possessing semicircular guard cells with cutinised half-ring-shaped outer thickenings, and subsidiary cells with almost



**Fig. 3.** *Banatozamites remotus* sp. nov. Shape, size, attachment and venation of pinnules.

straight walls. Stomata sunken in stomatal pit, covered by papillate and strongly trichomate roof-cells with slightly sinuous walls, forming a circular roof. Covering roof possessing rectangular mouth located above the guard cells.

*Supplementary description.* The type specimen represents the medial-distal part of a small-sized leaf (Pl. I - Fig. 1). It is preserved on a length of 55 mm, the width measured at its proximal and distal end being of 21 mm and 15 mm respectively. The rachis is straight, 1.2 mm wide. The pinnules are attached with their whole bases on the upper surface of rachis, but the pinnula base never covers the base of the pinnula on the opposite side of the rachis. The pinnule base is symmetrical, and the margins are not decurrent nor contracted. The pinnulae are not flat, but slightly convex toward the adaxial surface. The length and the width of pinnules gradually diminish from 12 mm and 2.5 mm at the proximal part of the type specimen, to 9 mm and 1.7 mm at the distal end. At one part of the pinna rachis the pinnules are attached almost at right angle,  $80^{\circ}$  –  $90^{\circ}$ , while at the other part the attachment angle proximally is  $75^{\circ}$ , and distally decreases gradually even down to  $45^{\circ}$ . So, the pinna appears to be asymmetrical. The veins arise from the whole

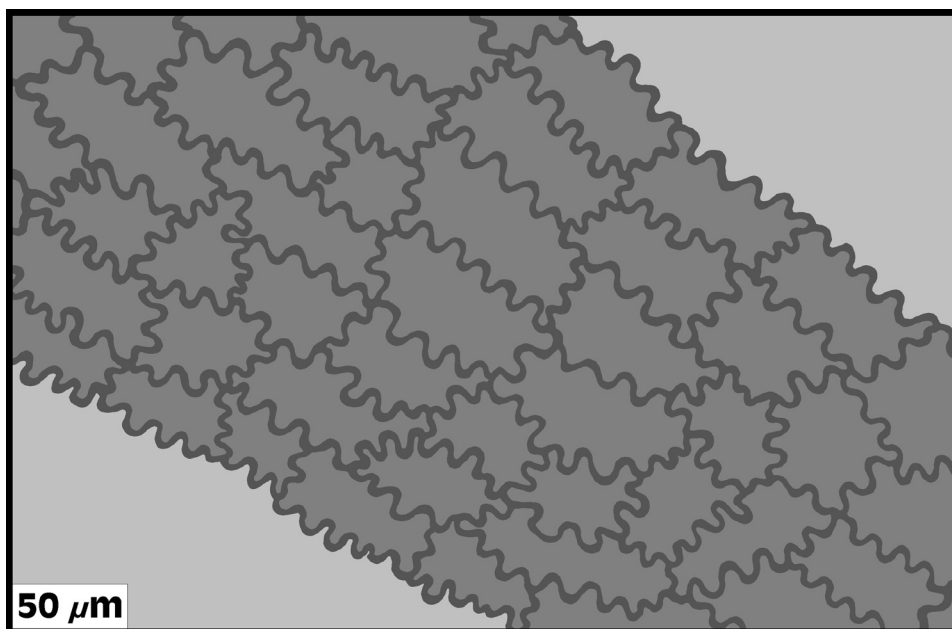
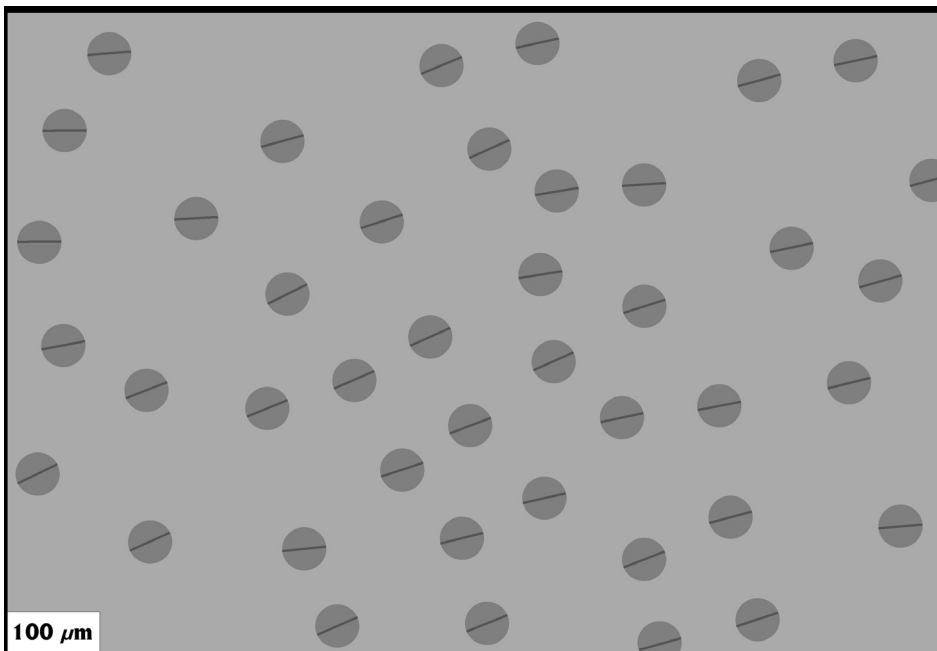
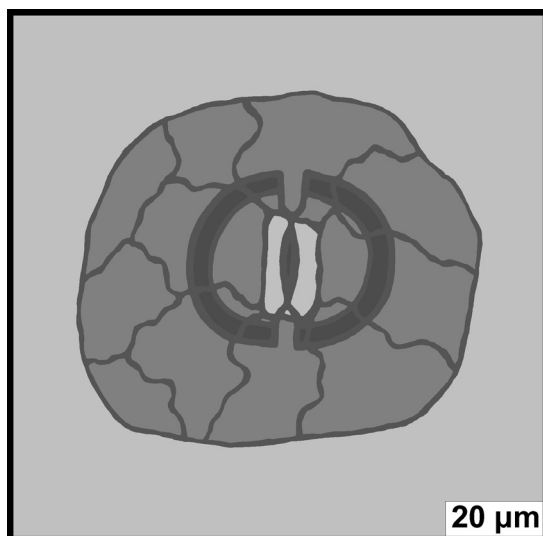


Fig. 4. *Banatozamites remotus* sp. nov. Adaxial cuticle, showing rows of sinuous-walled cells.



**Fig. 5.** *Banatozamites remotus* sp. nov. Distribution of stomata on abaxial cuticle. Stomata represented by circles, the line in the middle indicating the direction of the pore.



**Fig. 6.** *Banatozamites remotus* sp. nov. Covering roof with roof-cells and rectangular mouth in the middle, located above the guard-cells.

base of pinnulae. They are not convergent and not divergent, but almost parallel, slightly curved in the acroscopic direction. A typical pinnula has about eight veins per base. Because half number of the veins dichotomize in its basal, medial, or apical third (Fig. 3), the veins number in the medial portion of pinnula usually is 10 – 12, the venation density being about 5 veins per mm.

Cuticles are very good preserved, thick, easily detachable. As the microscope preparations contain both upper and lower cuticles of the same pinnulae, the cuticular study undoubtedly revealed the hypostomatic character of the lamina. The adaxial cuticle shows no differentiation of the epidermal cells of the venal or intervenal regions. All the normal epidermal cells possess walls with more or less marked sinuosities, but those of the adaxial epidermis may be even very sinuous walled (Pl. I – Fig. 2). The length and width of the cells measured on the adaxial cuticle vary between 30 – 110  $\mu\text{m}$ , respectively between 30 – 70  $\mu\text{m}$  (Fig. 4). The dimensions of the cell-walls sinuosities („wavelength” / „amplitude”) are in the limits of 8 – 24  $\mu\text{m}$  / 5 – 13  $\mu\text{m}$ . While the adaxial cuticle shows no papillae, the base of the hollow papillae measured on the abaxial cuticle is 10 – 18  $\mu\text{m}$  in diameter. Although the ordinary cells of the abaxial epidermis show parallel orientation, there are no differentiated stomatal and non-stomatal bands. However, although the stomata are irregularly scattered, they appear with the pore transversely oriented to the veins (Fig. 5). Stomatal density is 80 – 90 stomata per  $\text{mm}^2$ , the Stomatal Index near about 14 (12 – 16).

The stomatal apparatus is paracytic (Pl. II – Fig. 1). The length of each of the two guard cells of the stomatal apparatus is about 40  $\mu\text{m}$ , the width of about 20  $\mu\text{m}$ , so their width/length ratio is about  $\frac{1}{2}$ . The subsidiary cells are rectangular to rounded in shape, 45  $\mu\text{m}$  wide (range 30 – 60  $\mu\text{m}$ ). The porus is 20  $\mu\text{m}$  long.

The stomatal pit is covered in average by 11 roof-cells (range 8 – 14), each of them possessing a papilla. The covering roof diameter is about 80  $\mu\text{m}$  (range 70 – 90  $\mu\text{m}$ ), so the portion which it occupies is about four times greater than the guard-cells portion (Pl. II – Fig. 2). The shape of the mouth, located in the middle of the roof, is the result of the centripetal disposition of the slightly sinuous-walled roof-cells (Fig. 6).

### Discussion, comparison, and conclusion

The macro- and microscopical characters both allow assignment of the material to the genus *Banatozamites* Czier 1996. Most relevant generic characters are the attachment of the pinnules with their whole bases on the upper surface of

rachis, the symmetrical pinnula base, the not decurrent nor contracted margins of pinnulae, the arisement of the veins from the whole pinnule base, the slightly curved veins in the acroscopic direction, the hypostomatic lamina, the sinuous walled normal epidermal cells, the paracytic stomatal apparatus, the transversely oriented porus of the stomata. The generic characters, compared with those of other relevant Bennettitalean genera, were extensively discussed (Czier 2000).

The single hitherto known species of the genus *Banatozamites* was the type species *B. chlamydostomus*. Although some characters described on the new material appear to be much resemblant or even the same with that species, a considerable number of specific characters do not allow assignment to it. Therefore, a new species, named *B. remotus*, is proposed. The characters common for *B. chlamydostomus* and *B. remotus* of course are the generic characters, as well as a series of other characters. It is possible that at least some of these latter also might be generic characters: the straight pinnae rachis, the asymmetry of the pinnae caused by the different attachment angles of the pinnules at the one and the another part of the rachis, the alternate disposition of pinnules, the fact that the pinnula base never covers the base of the pinnula on the opposite side of the rachis, the entire margins of pinnulae, the dichotomisation at all levels of the forked veins, the very good preservation state of the cuticles, the adaxial cuticle showing no differentiation of the epidermal cells of the venal or intervenal regions, the arrangement in rows of the adaxial epidermal cells, the rectangular shape of the adaxial epidermal cells, the orientation of the adaxial epidermal cells usually with their longest sides parallel to the margins, the markedly sinuous walls of the adaxial epidermal cells, the absence of papillae on the adaxial epidermis, the parallel orientation of the ordinary cells of the abaxial epidermis, the presence of papillae on the abaxial epidermis, the almost straight walls of the subsidiary cells of the stomatal apparatus, the stomata sunken in a stomatal pit, the presence of a papilla on each of the roof-cells, the location above the guard-cells of the covering roof's mouth. Their status will result after the study of the entire *Banatozamites* material from the studied collections. Those of them which unequivocally will be proven as generic characters may be then enclosed in an emended diagnosis of the genus.

The characters that differentiate *Banatozamites remotus* from the type species *B. chlamydostomus* are rendered in the table below (Tab. 1). The most important differential characters are specific characters. They indicate the measure in which the rachis is concealed by the basal portion of the pinnules, the setting of pinnulae, the shape of pinnulae, the pinnulae apex, the arisement of the veins, the appearance of simple veins, the appearance of forked veins, the dichotomization of the veins, the ending of the veins, the conspicuousness of the rows of the adaxial



**Table 1.** Differences between the species of genus *Banatozamites*, based on macro- and microscopical characters.

Character	<i>Banatozamites chlamydostomus</i>	<i>Banatozamites remotus</i>
Value that the pinnae surface may exceed (Value that the pinnae length may exceed x Value that the pinnae width may exceed)	6600 mm <sup>2</sup> (110 mm x 60 mm)	1155 mm <sup>2</sup> (55 mm x 21 mm)
Average width of pinnae rachis	1.5 mm	1.2 mm
Measure in which the rachis is concealed by the basal portion of the pinnules	Almost entirely	Partly
Setting of pinnulae	Closely	Distanced from each other by gaps equalling about half of their width
Shape of pinnulae	Linear or rectangular, sometimes slightly falcate	Linear or slightly falcate
Measure of the pinnulae convexity toward the adaxial surface	More or less	Slightly
Attachment angles of the pinnules	65° – 80°	45° – 90°
Apex of pinnulae	Rounded	Rounded to slightly obtuse
Dimensions (Length / Width) of the pinnules	22 – 32 mm / 6 – 11 mm	9 – 12 mm / 1.7 – 2.5 mm
Arisement of the veins	Perpendicularly	Slightly obliquely
Direction of the veins	Slightly divergent	Almost parallel (not convergent and not divergent)
Appearance of simple veins	Occasionally	Half of the total number of veins

Appearance of forked veins	Usually	Half of the total number of veins
Dichotomization of the veins	Once or repeatedly	Once
Ending of the veins	In the apex, in the whole acroscopic margin, and in the distal half of the basisopic margin	In apex and in the distal half of the margins
Number of veins per base of a typical pinnula	16	8
Density of the venation in the middle of a typical pinnula	3 veins/mm	5 veins/mm
Detachability of the cuticles	Normal	Easy
Size of the cuticles before the maceration	Normal	Thick
Conspicuousness of the rows of the adaxial epidermal cells	More or less	Dominantly
Presence/Absence of trichomes on the adaxial epidermis	Absent	Present
Dimensions (Length / Width) of the epidermal cells of the adaxial epidermis	40 – 60 $\mu\text{m}$ / 25 – 40 $\mu\text{m}$	30 – 110 $\mu\text{m}$ / 30 – 70 $\mu\text{m}$
Dimensions (Wavelength / Amplitude) of the cell-walls sinuosities of the adaxial epidermal cells	5 – 13 $\mu\text{m}$ / 8 – 15 $\mu\text{m}$	8 – 24 $\mu\text{m}$ / 5 – 13 $\mu\text{m}$
Presence/Absence of stomatal bands in the abaxial epidermis	Present	Absent

Arrangement of stomata in the abaxial epidermis	The stomata in the stomatal bands almost always are arranged in two rows, but rarely, short parts with three rows also appear (sometimes, bands formed by a single row of stomata have been observed, indicating the dichotomising of a vein)	Irregularly scattered
Width of the stomatal bands / Width of the non-stomatal bands	60 – 220 $\mu\text{m}$ / 130 – 200 $\mu\text{m}$	Not measurable (there are no differentiated stomatal and non-stomatal bands)
Presence/Absence of trichomes on the normal epidermal cells of the abaxial epidermis	Absent	Present (very numerous)
Base diameter of the abaxial epidermal cell's papilla	15 $\mu\text{m}$ (11 – 19 $\mu\text{m}$ )	14 $\mu\text{m}$ (10 – 18 $\mu\text{m}$ )
Shape of the guard cells of the stomatal apparatus	Semiellipsoidal	Semicircular
Width/Length ratio of each of the two guard cells of the stomatal apparatus	$\frac{1}{4}$ (12 $\mu\text{m}$ / 50 $\mu\text{m}$ )	$\frac{1}{2}$ (20 $\mu\text{m}$ / 40 $\mu\text{m}$ )
Shape of the cutinised outer thickenings of the guard cells	Crescent	Half-ring
Shape of the subsidiary cells	Rounded	Rectangular to rounded
Width of each of the two subsidiary cells	18 $\mu\text{m}$ (12 – 24 $\mu\text{m}$ )	45 $\mu\text{m}$ (30 – 60 $\mu\text{m}$ )
Length of the porus	30 $\mu\text{m}$	20 $\mu\text{m}$
Stomatal density	40 – 50 stomata/ $\text{mm}^2$	80 – 90 stomata/ $\text{mm}^2$
Stomatic index	9 (8 – 10)	14 (12 – 16)

Shape of the covering roof	Oval (with the major diameter perpendicularly oriented to the pore)	Circular
Width/Length ratio of the covering roof	$\frac{3}{4}$ (60 – 90 $\mu\text{m}$ / 80 – 120 $\mu\text{m}$ )	1/1 (70 – 90 $\mu\text{m}$ / 70 – 90 $\mu\text{m}$ )
Number indicating how many times the portion occupied by the covering roof is greater than the guard-cells portion	9	4
Number of roof-cells covering the stomatal pit	7 – 16	8 – 14
Measure in which the walls of the roof-cells are sinuous	Normally	Slightly
Presence/Absence of trichomes on the roof-cells that cover the stomatal pit	Absent	Present (strongly trichomate)
Position of the roof's mouth	Slightly laterally	In the middle
Shape of the mouth	Stellate	Rectangular
The more or less centripetally disposed covering items that determine the shape of the mouth	Sinuous-walled roof-cells and papillae	Slightly sinuous-walled roof-cells

epidermal cells, the presence or absence of trichomes on the adaxial epidermis, the presence or absence of stomatal bands in the abaxial epidermis, the presence or absence of trichomes on the normal epidermal cells of the abaxial epidermis, the shape of the guard cells of the stomatal apparatus, the shape of the cutinised outer thickenings of the guard cells, the presence or absence of trichomes on the roof-cells that cover the stomatal pit, the measure in which the walls of the roof-cells are sinuous, the shape of the covering roof, the shape of the mouth. However, the two species also have many other characters, which show differences. Not all of these characters are enough significant for specific differentiation, but they are also important to completing the list with data that may help the determination of

new *Banatozamites* material. The mentioned features point to the value that the pinnae surface may exceed, the average width of pinnae rachis, the dimensions of the pinnules, the attachment angles of the pinnules, the measure of the pinnulae convexity toward the adaxial surface, the direction of the veins, the number of veins per base of a typical pinnula, the density of the venation in the middle of a typical pinnula, some macroscopical aspects of the cuticles like their detachability and size before maceration, dimensions of the epidermal cells of the adaxial epidermis, dimensions of the cell-walls sinuosities of the adaxial epidermal cells, arrangement of stomata in the abaxial epidermis, width of the stomatal and non-stomatal bands, base diameter of the abaxial epidermal cell's papilla, stomatal density, stomatic index, width/length ratio of the guard cells, shape of the subsidiary cells, width of the subsidiary cells, length of the porus, number of roof-cells covering the stomatal pit, width/length ratio of the covering roof, the number indicating how many times the portion occupied by the covering roof is greater than the guard-cells portion, the position of the roof's mouth, the more or less centripetally disposed covering items that determine the shape of the mouth.

It can be concluded, in a nutshell, that the new species compared to the genotype is characterised by remotely disposed pinnulae possessing slightly obliquely arising veins, adaxial epidermis with trichomate epidermal cells disposed in conspicuous rows, abaxial epidermis with irregularly scattered stomata and strongly trichomate epidermal cells, stomatal apparatus with semicircular guard cells possessing half-ring-shaped outer thickenings, circular covering roof with rectangular mouth.

### **Palaeophytogeographic, biostratigraphic, and palaeoclimatic considerations**

It has been already shown that *Banatozamites* is an element of the European autochthon palaeoflora (Czier 1996), and the lower Jurassic flora of Romania has mixed origin (Czier 2000d). Both the two species *B. chlamydostomus* and *B. remotus* appear only in the *Banatozamites chlamydostomus* Subzone of the *Clathropteris meniscioides* Biozone, in the Hettangian pro parte - Sinemurian continental deposits of the Getic Realm. All the specimens have been collected from the same fossil locality. In this context, *Banatozamites* appears to be an endemic genus of the European Mesophytic, and its species *B. chlamydostomus* and *B. remotus* endemic species.

*Banatozamites*, with its species *chlamydostomus* and *remotus*, brings a

contribution to the argumentation of the mangrove forest association of a coal-generating biotope, which existed at Anina in the early Jurassic times (Givulescu and Czier 1990). As the assemblages of this type are characterised especially with the predominance of the Nilssoniaceae (Cycadales) and of the Zamitaceae s. l. (Bennettitales), *Banatozamites* fit in the series of these plants that denote a warm and wet climate (Taugourdeau-Lantz and Vozenin-Serra 1987).

### Acknowledgements

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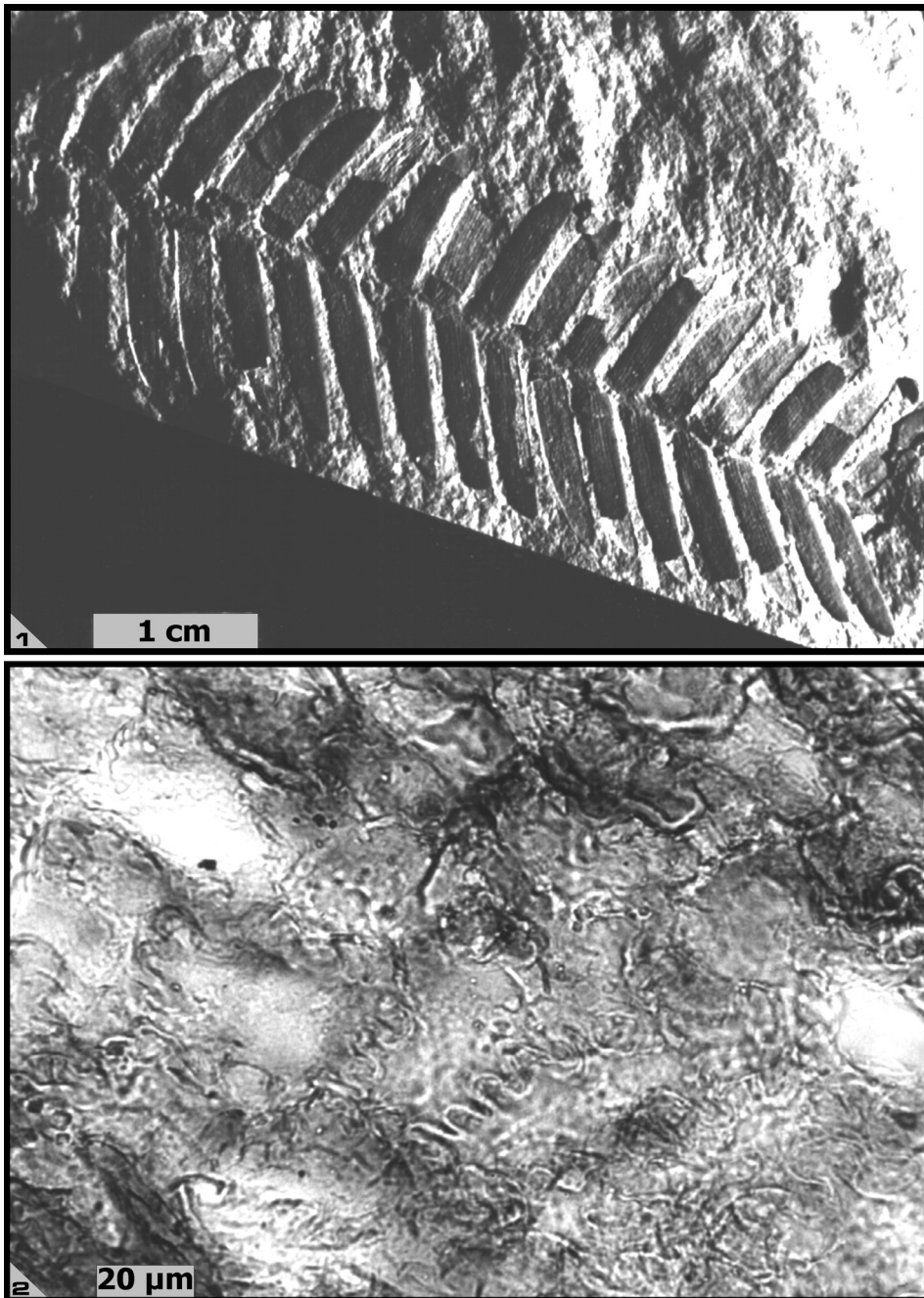
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**Plate I.** *Banatozamites remotus* sp. nov. 1. General view of the leaf. 2. Adaxial cuticle with epidermal cells, outer sight.

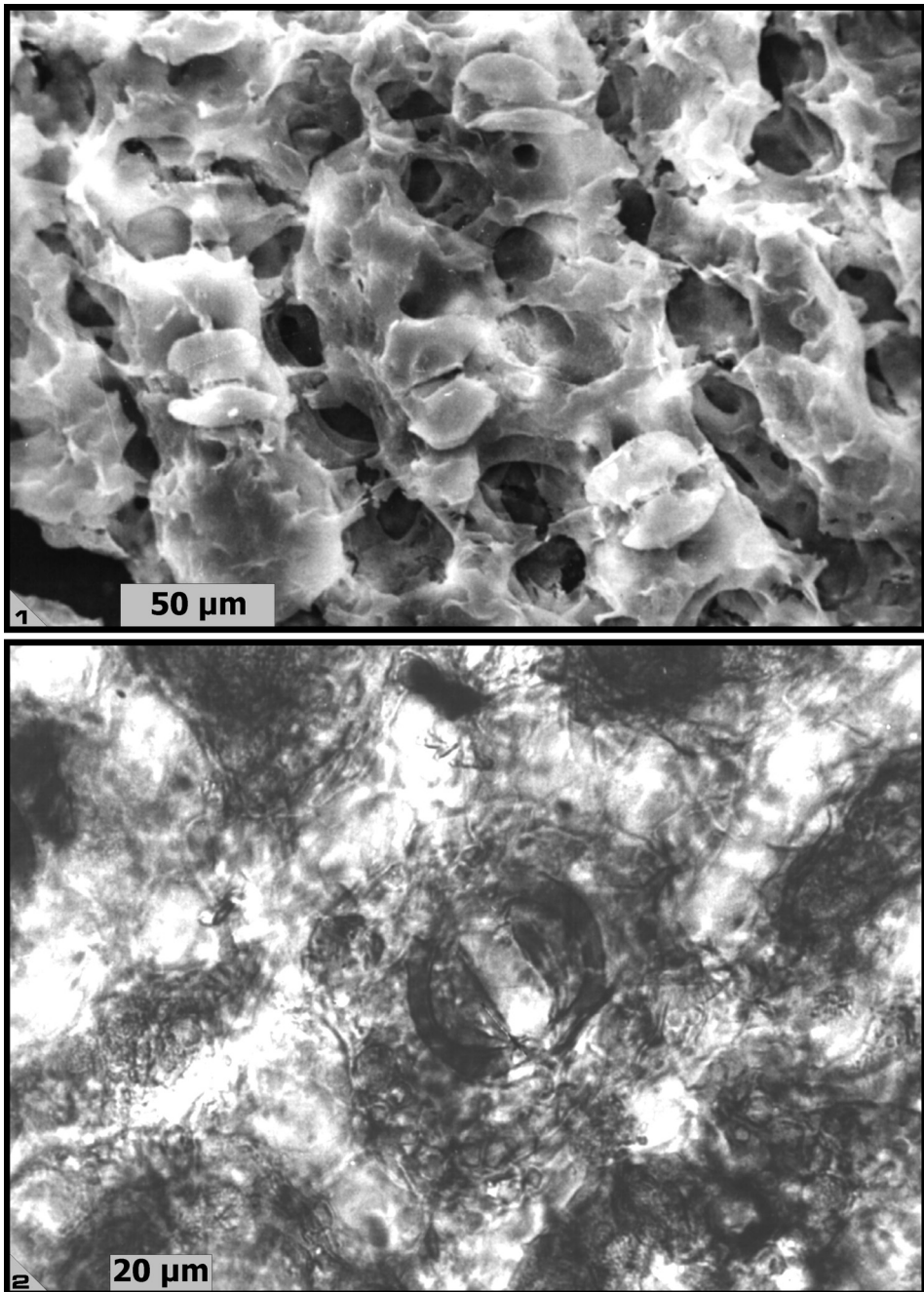


Plate II. *Banatozamites remotus* sp. nov. 1. Abaxial cuticle with paracytic stomatal apparatus, inner sight. 2. Stomata with covering roof, outer sight.

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## **Notes on a Cyamodontoid maxillary from the Middle Triassic site Lugașu de Sus (W. Romania)**

*Erika Posmoșanu*

*Muzeul Țării Crișurilor, Oradea, B-dul Dacia nr. 1-3, 410684*

*e-mail: [eposmosanu@gmail.com](mailto:eposmosanu@gmail.com)*

**Abstract.** Armored and non-armored placodont remains have been reported from the Middle Triassic of Lugașu de Sus and Pestis, Western Romania. "*Placodus gracilis*" has been formerly described based on a lower jaw and a right maxillary fragment. The described specimens are not diagnostic for the genus *Placodus* or for the Placodontoidea. The placodont remains of the Romanian localities belong to the armored placodonts, the Cyamodontoidea.

**Keywords:** Placodontia, Cyamodontoidea, Middle Triassic, Western Romania

### **History of the researches**

Middle Triassic sites Lugașu and Pestis, near Alesd, north-western Romania, has produced hundreds of marine vertebrate bones over the last 40 years. The first occurrence of Triassic vertebrate remains was reported by geologist Dumitru Istocescu (Diaconu et al., 1965), during some geological mapping works started in 1963. A detailed lithological description of the Middle Triassic of the southern realm of Rez Mountains, respectively Loranta, Gepisului and Pestis Valley – near-

by Alesd, is given by Istocescu et al (1968), identifying the Anisian for the calcareous unit and Ladinian for the overlying dolomites and crystallized limestone's.

Paleontologist Tiberiu Jurcsak from Tarii Crisurilor Museum, Oradea has started his field research in October 1969 on Lion Valley, situated north of Pestis, nearby Alesd. He collected samples of limestones, marly limestones and lumachelles with invertebrate and vertebrate remains. In his first paper on the Triassic of Alesd, Jurcsak (1973) has reported an elongated placodont tooth, he identified it as a tooth of *Paraplacodus*. Among the remains of sauropterygian reptiles he described a Nothosaurid skull, as *Nothosaurus* cf. *procerus*.

Later, Tiberiu Jurcsak and Elisabeta Popa, have extended field research to other two Triassic deposits: first to Gruiu Pietrii, from Lugasu de Sus and later to Fruntii Valley, the same locality situated North East to Alesd. Jurcsak described a new species of *Tanystropheus*, *Tanystropheus biharicus* JURCSAK 1975, based on a cervical vertebra (MTCO 8988), considering that the Gruiu Pietrii deposit – Lugasu de Sus is Lower Anisian in age.

T. Jurcsak has continued his series of papers on the Triassic marine reptiles. The number of specimens from the two fossil localities has risen considerably, Jurcsak (1976) described a faunal association consisted of nothosaurids, placodonts, ichthyosaurids, as well as a proganochelid among reptiles. Jurcsak (1976) identified 2 fish genera, a selachian *Hybodus reticulatus* AGASSIZ and *Hybodus* sp. and the actinopterygian *Colobodius* sp. In the same paper Jurcsak has described a new species of Nothosaurid, namely *Nothosaurus transsylvanicus* JURCSAK 1976, based on a skull fragment, formerly mentioned as *Nothosaurus* cf. *procerus*. According to Rieppel et al. (1999) the skull fragment represents a small species, very close to, if not identical, with *N. marchicus*, as indicated by Jurcsak's (1973) original identification of the specimen as *Nothosaurus* cf. *procerus* (*Nothosaurus procerus* SCHROEDER, 1914 is a subjective junior synonym of *N. marchicus* KOKEN, 1983). The only difference between *N. transsylvanicus* and the latter species relates to the proportions of the external nares. *Nothosaurus marchicus* is characterized by a relatively broad and rounded external naris, the holotype of *N. transsylvanicus* the external naris is distinctly more elongated, according to the ratio of the longitudinal diameter of the external naris to its transverse diameter (Rieppel et al, 1999).

T. Jurcsak continued his research of the Triassic fauna until 1978 (Jurcsak 1977, 1978), when a new fossil site has been reported in the Lower Cretaceous bauxite from Cornet – Lens 204.

The history of research was summarized by Popa et al (1996), after a Romanian-French joint research project in 1995, when Dr. Jean-Michel Mazin came



to a field campaign to Lugasu de Sus. That was the first time when a lithological sequence has been drawn for the Middle Triassic of Lugasu de Sus (Locus Huza).

**Abbreviation:** MTCO – Tarii Crisurilor Museum, Oradea.

### Notes on Placodontia

Among Placodontia, Jurcsak (1976, 1977, 1978, 1982, 1987) has described specimens as belonging to non-armored placodonts (Placodontoidea), namely the genera *Placodus* and *Paraplacodus*, as well as armored placodonts (Cyamodontoidea), mentioning the genera *Psephoderma*, *Placochelys* and *Psephosaurus*. The cyamodontoids were described based on fragmentary, isolated osteoderms.

Pinna (1990) has questioned the stratigraphic range of the two Romanian Triassic deposits and stated the incorrect classification of the findings. According to Pinna (1990) Jurcsak's association of placodonts groups together different species that, in localities with a well established stratigraphy, are found in different temporal levels.

For the Placodontoidea, Jurcsak described a right lower jaw fragment from Pestis (MTCO 7339), which he referred to the genus *Placodus*. Jurcsak gave a detailed description of the teeth, considering the horizontally disposed first 2, chisel-shaped anterior teeth, with evident worn facets, as characteristic for *Placodus*. He also described the next 3 teeth, as having elliptical base and broken tips, with a more vertical position, decreasing in size distally. Jurcsak discussed whether it represented a juvenile individual or belonged to a small but new species "*Placodus gracilis*"? Jurcsak, 1976, referring the specimen in the figure caption as "*Placodus gracilis*" n.sp. Later Jurcsak (1978) considered *Placodus gracilis* as a close form to *Paraplacodus broilii* PEYER. Rieppel (1995) discussed the figured lower jaw of *Placodus gracilis* and considered that the specimen does not represent *Placodus* or, indeed, a placodont. According to Rieppel's description "the mandibular symphysis is narrow, and there are five slender anterior teeth with a narrow cylindrical base and broken tips; three anterior teeth are strongly procumbent. *Placodus* shows an elongated symphysis and two chisel-shaped anterior teeth, separated from posterior crushing teeth by a wide diastema. An elongated symphysis, and a wide diastema separating two conical and procumbent anterior teeth from the posterior crushing teeth, are also characteristic of *Paraplacodus* (Peyer, 1935)." Therefore, Rieppel (1995) considered that *Placodus gracilis* is a **nomen dubium**,

pending a revision of the original material. In their cladistic analyses of the inter-relationships of Placodontia, Rieppel & Zanon (1997) put *Paraplacodus* as the sister taxon of *Placodus* within the Placodontoidea and considered that the specimen identified as *Paraplacodus* or "*Placodus gracilis*", from the Anisian deposit of Alesd in Transsylvania, was not a placodont. Rieppel and Dalla Vecchia (2001) stated again that the genus *Placodus* reported from the Anisian of Transsylvania, respectively "*Placodus gracilis*" Jurcsak 1976 was based on a material which was not diagnostic for the genus *Placodus*.

Jurcsak has figured a maxillary fragment from Lugasu de Sus (in Huza et al., 1987), (only the cast of this maxillary is hosted in the Tarii Crisurilor Museum, MTCO 15.272a, fig. 1). The original specimen is hosted in the National Geological Museum Bucharest and it is displayed in the permanent exhibition. In the original description of the maxillary (Huza et al., 1987), Jurcsak mentioned three alveoli for premaxillary teeth, two alveoli for the maxillary teeth and a palatine tooth, referring the specimen in the text to "*Placodus gracilis*" or to a close form to *Paraplacodus broilii* Meyer. The specimen is figured in the paper as "*Placodus gracilis*", (Huza et al., 1987).

A reexamination of the specimen has revealed that there is only one intact alveolus for the premaxillary tooth, the tip of the premaxillary bone being broken. There is no diastema separating premaxillary and maxillary teeth. The presence of the diastema is a character for Placodontoidea stated by Rieppel and Zanon (1997) in their cladistic analyse of the Placodontia. The absence of a distema separating the premaxillary and maxillary teeth indicates a cyamodontoid feature.

For the maxillary teeth there are two elongated alveoli. Among the species of the genus *Cyamodus*, the number of maxillary teeth varies between two or three in adult specimens, *Placochelys* shows three maxillary teeth, *Psephoderma* shows two maxillary teeth (Rieppel, 2001). Maxillary tooth count for the genera *Placodus* is typically four or more (Rieppel & Zanon, 1995, Rieppel, 2001).

Only a single palatal tooth plate is preserved on this specimen, the posterior one, and it's rather small and rounded. A transverse elongation of the palatal teeth is a characteristic feature for the Placodontoidea, which is not the case in this specimen. The palatal tooth of this specimen, although is not fully preserved, shows that originally it was longer than wide. According to Rieppel (2001) the proportion of the posterior palatal tooth plates vary among cyamodontoid taxa, *Cyamodus* from the Germanic Triassic (i.e. *C. rostratus*, *C. kuhnschnyder*), as well as *Placochelys placodonta* and *Protenodontosaurus italicus* have posterior palatine tooth plates that are between 1.2 and 1.3 times as long as they are wide. The same au-





**Fig. 1.** *Cyamodontoid* right maxillary (MTCO 15.272a), cast. Scale indicates 1 cm.

thor stated that the Alpine species *Cyamodus hildegardis* shows somewhat more elongated palatine tooth plates (1.3 to 1.4 times as long as they are wide) and this character is present in *Psephoderma alpinum*, which in adult specimens shows posterior palatine tooth plates that are 1.4 to 1.5 times as long as they are wide.

The palatine bone is broken, so the number of the palatal tooth plates cannot be estimated precisely, but most probably, giving the general shape of the maxillary, there were two palatine tooth plates.

Unfortunately, the author couldn't have access to the original specimen at

the National Geological Museum Bucharest, which would allow a better interpretation of the anatomy of this maxillary. All the above mentioned characters indicate that this specimen was not *Placodus* or an other non-armored placodont, it can be referred to the armored placodonts, Cyamodontoidea. Further study of the original specimen will permit generic identification.

### Concluding remarks

All remains of placodontian reptiles from Romania belong to the armored placodonts (Cyamodontoidea). The formerly described "*Placodus gracilis*" based on a jaw and a right maxillary fragment is not diagnostic for the genus *Placodus* or for the Placodontoidea.

The formerly described cyamodontids were based on fragmentary isolated osteoderms. The validity of these genera is depending on the question whether isolated osteoderms or carapace fragments can be used as a diagnostic character at the generic level (Westphal, 1975). Recently, Rieppel (2002) described in detail the morphology of the dermal armor of Cyamodontoid placodonts and their systematic value, which will help for the further evaluation of the Romanian cyamodontoid osteoderms and carapace fragments.

The revision of the invertebrate fauna, especially the crinoid remains, which is in progress, will bring new information on the stratigraphic range of the Lugasu de Sus and Pestis Middle Triassic sites.

### Acknowledgements

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<b>NYMPHAEA</b> Folia naturae Bihariae	<b>XXXV</b>	<b>35 - 126</b>	<b>Oradea, 2008</b>
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## The herbarium of Simonkai L. in the collection of the Cris County Museum (Part I.)

*Vasile Maxim Danciu & Dorina Golban*

Muzeul Țării Crișurilor, B-dul Dacia nr. 1-3, 410464 Oradea, România  
e-mail: silmax@rdslink.ro

**Abstract.** The present paper focuses on the valuing of the data and information to be found in one of the first herbaria in Transylvania, part of the botanical collection of the Cris County Museum, namely, that of Simonkai Lajos (1851-1910). The author worked mostly during the second half of the 19<sup>th</sup> century, his area of interest being the Transylvanian region, as a constant object of study, and the area of Banat, including the Serbian Banat, as well as central and western Hungary. Yet the herbarium also contains contributions of several botanists of the time, thus expanding the phytogeographic area related to both data and the collected material. Subsequent to the processing of the material by classifying it according to current taxonomies, with the mention of the accepted denomination and most important synonyms, followed by location (where identified), and the date and author of their collecting (where possible), we present the first 335 taxons, of 167 genuses and 94 families, that according to the taxonomical classification employed here (*Systema Naturae 2000*), belong to 3 kingdoms (*Protozoa*, *Fungi*, *Plantae*), respectively to the phyla of *Amebozoa* (clas. *Myxogastrea*), *Ascomycota*, *Basidiomycota*, *Charophyta*, *Anthocerophyta*, *Marchantiophyta*, *Bryophyta*, *Tracheophyta* (clas. *Polypodiopsida*).

### Introduction

When celebrating the 155<sup>th</sup> anniversary of the botanist Simonkai Ludovic's birthday, the *Nymphaea* journal published the alphabetic list of the species to be found in the collection of the Cris County Museum (Golban, Popa, 2006). The

article mentioned a subsequent updating of both the scientific denominations and the systematic categories. This paper attempts to achieve this thing by initiating a taxonomical presentation of the *Fungi*, *Charophyta*, *Anthoceroephyta*, *Marchantiophyta*, *Bryophyta*, *Tracheophyta* ("Moniliformopses", Class *Polypodiopsida*).

### Objective, material and method

The objective of the study is to value, by publishing them, the data and information to be found in the botanical collection of the museum, thus enhancing its area of interest. It is also important the fact that we present the results of the work of a botanist, Lajos von Simonkai, whose activity is relevant for the second half of the 19<sup>th</sup> century for his interest for the Cris County region, as part of larger Transylvania that he surveyed, together with the regions of Banat and the Serbian Banat, down to Trieste, as well as those of central and western Hungary. Simonkai's herbarium has also got a historical feature, besides its scientific one, ranging among the first herbaria in Transylvania and containing both plants collected by him, signed *Simkovics L.* (one of his elective names, recorded in literature together with *Simonkai*, respectively, with *Ludwig Ph. Simkovics*) and plants obtained from other botanists of the time in exchange, thus developing the phyto-geographical area in terms of collected data and material. Among the signatures found on the labels of the herbarium, there are famous people of those days, such as A. Braun (*Alexander Carl Heinrich Braun, 1805-1877*), Baenitz (*Carl Gabriel Baenitz, 1837-1913*), Borbas Vincze (*Vincze von Borbas, 1844-1905*), F.W. Schulz (*Friedrich Wilhelm Schultz*), Pall. (*Peter Simon von Pallas*), Bertram (*Josef Bertram*), O. Debeaux (*Jean-Odon Debeaux, 1826-1910*), Rigo (*Gregorio Rigo, 1841-1922*), Siegfried (*Hans Siegfried, 1837-1903*), Zollikofer (*Georg Kaspar Zollikofer, 1816-1903*), Huet (*Alfred Huet du Pavillon, 1829-1907*), Geheeb (*Adalbert Geheeb, 1842-1909*), together with many others (*I.A. Tauscher, G. Herpell, Alex. Marcus, A. Vigener, C. Sanio, Ludwig Holtz, E. Rackestrom, S. Berggson, Hugo von Klinggraf, Dresler, J.L. Holuby, Haslinszky, Zirkendrath, Zwanziger, P. Porta, Vrabelyi, J. Barth, Kastropp, Cismas*).

The examined material consists of herbarium sheets housed by the collection of the Cris County Museum in Oradea, as indicated by the inventory number following the botanical denomination. In naming the species, we considered the received botanical denomination, with the mention of the reference to their first description and of the synonymous denominations. When checking the validity

and accuracy of the information, we have constantly used the data provided by the following sites: Royal Botanic Garden Edinburgh *Flora Europaea*, de *Species Fungorum 2006*. (<http://www.speciesfungorum.org>). *Global Biodiversity Information Facility*. (<http://www.gbif.org>), *Bryatae* (Check List of Norwegian Mosses -[www.nhm.uio.no/botanissk/mose/tax\\_brya.htm](http://www.nhm.uio.no/botanissk/mose/tax_brya.htm)), and *uBio Portal* ([www.ubio.org/portal/-5k](http://www.ubio.org/portal/-5k)), for fungi, algae and bryophytae. When selecting the systematic units, we used V. Ciocarlan's study (2000), for pteridophytae and spermatophytae as it follows the directions of the International Code for Botanic Cataloguing, and the site *Systema naturae 2000* (<http://taxonomicom.taxonomy.nl>) for updating the taxonomic classification. We also indicated the location where the plants had been collected (if it was marked on the label), the locality (when written), the date and the name of the author (when they were mentioned, which, in our case, meant the author who collected and determined the plants, and fixed the herbarium sheet).

*Abbreviations used in our study:* n.= number of inventory; ref.= reference for the firstly mentioned description of the species; leg.= the author who collected and determined the plant; Ord. = the order; Fam.= the family.

## Systematic part

### Domain *Eukaryota*

Kingdom *Protozoa* (Goldfuss, 1818) R. Owen, 1858

Subkingdom *Sarcomastigota*

Phylum *Amebozoa* (Luhe, 1913) Corliss, 1984

Subphylum *Conosa* Cavalier-Smith, 1998

Infraphylum *Mycetoza* de Bary, 1859 (*Myxomycota*)

Clas. *Myxogastrea* (E.M. Fries, 1829) J. Feltgen, 1889

Ord. *Liceales* Jahn, 1928

Fam. *Enteridiidae* (L.) Farr., 1982;

Gen. *Lycogala* Micheli, 1729 ex Adanson

***Lycogala epidendrum* (J. C. Buxb. ex L.) Fr.** – (n. 5882) – ref.: *Lycogala miniatum* Pers. (as *,miniata'*), Neues Mag. Bot. 1 : 87 (1794); *Lycogala epidendrum* (J.C.Buxb. ex L.) Fr. , *Syst. mycol.* (Lundae) 3(1): 80 (1829); sin.: *Lycogala miniatum* Pers. 1794; *Lycogala epidendrum* (L.) Fr.; *Lycoperdon epidendrum* L. 1753 ; *Galoperdon epidendron* (L.) F.H. Wigg. 1780 ; *Reticularia minuta* (Pers.)

Poir. 1804 ; - Slovakia, Presov (Eperjes), Radatice (Radacs), 22.05.1870, no signature.

Obs.: Lado C. (2001), Nomenmyx. A nomenclatural taxa babase of Myxomycetes. *Cuadernos de Trabajo de Flora Micologica Iberica* 16: 221p. Madrid.

**Kingdom *Fungi* T.L. Jahn & F.F. Jahn, 1949 ex R.T. Moore, 1980**  
**Subkingdom *Dikarya* D.S. Hibbett et al., 2007**  
**Phylum *Ascomycota* H.C. Bold, 1957 ex T. Cavalier-Smith, 1998**

Gen. *Exosporium*

***Exosporium tiliae* Link. 1809** - (n. 5886) – ref.: *Magazin Ges. naturf. Freunde, Berlin* 3(1-2): 10 (1809); *Systema Mycologicum* 3(2): 360 (1832); indexfungorum.org: names: 199564;\_sin.: *Helminthosporium tiliae* Fr.- [*Syst. mycol.* (Lundae) 3(2): 360 (1832)]; - Romania, Arad, Arad, 29.08.1871, leg. Simkovics L.

**Subphylum. *Pezizomycotina* O.E. Eriksson & K. Winka, 1997**

**Clas. *Lecanoromycetes* O.E. Eriksson & K. Winka, 1997**

Subclas. *Lecanoromycetyde* P.M.Kirk et al., 2000 ex Miadlikowska et al., in D.S. Hibbett et al., 2007

Ord. *Lecanorales* Nannf., 1932

Subord. *Lecanorineae*

Fam. *Caliciaceae* Chevall, 1826

Gen. *Crateridium* Trevisan de Saint-Leon, 1862

***Crateridium campestre* L.** – (n. 5892) - ref.: *Crateridium* Trevisan, *Flora*, Jena 45: 3 (1862) [(*Flora*, oder *Allgemeine Botanische Zeitung*, Jena, 1862); corect name: *Cyphelium* Ach., *K. svenska Vetensk-Akad. Handl.* 1815: 261 (1815)]; type species: *Crateridium virellum* (Nyl.) Trevis. (1862); - Hungary, Pest, Budapest, no date, leg Simovics L

Fam. *Ophioparmaceae* R.W. Rogers & Hafellner, 1988

Gen. *Ophioparma* Norman

***Ophioparma ventosa* (L.) Norman** – (n. 5867) – ref.: *Nytt Mag. Naturv.* 7:230-231, 1853.); *Ric. auton. lich. cost.*, 1852, p. 33. ; urn: lsid: indexfungorum.org:



names : 386654; sin.: *Gussonea ventosa* (L.) Tornab., *Haematomma ventosum* (L.) Mass.; *Lecania ventosa* (L.) Mull. Arg.; *Lecanora ventosa* (L.) Ach.; *Lepadolemma ventosum* (L.) Trevis.; *Lichen rufescens* With.; *Lichen ventosum* L.; *Parmelia ventosa* (L.) Ach.; *Patellaria ventosa* (L.) DC.; *Rinodina ventosa* (L.) Gray; *Verrucaria ventosa* (L.) Hoffm.; *Zeora ventosa* (L.) Flot.; - Romania, Hunedoara, Hațeg mountains, Aranies (Aranyos), no date, leg. Simkovics L.

Fam. *Parmeliaceae* Zenker, 1827

Gen. *Usnea* Dill. Ex Adams., 1763

***Usnea barbata* (L) Weber ex F.H. Wigg.** – (n. 5868) – ref.: *Brit. Fl.* 1: 206 (1780), basionym.: *Lichen barbatus* L. 1753, Zahlbruckner's Cat. Lich. Univ. 8: 577; 10: 579 | Lamb's Index nom. lich.: 737. ; - Hungary, Csongrad, Eperjes, forest, no date, leg. Simkovics L.

Fam. *Ramalinaceae* C. Agardh. 1821

Gen. *Ramalina* Ach., 1809

***Ramalina carpatica* Korb.** – (n. 5866) – ref.: *Zahlbruckner's Cat. Lich. Univ.* 6: 449; 8: 574. ; urn: Isd: indexfungorum.org: names:403676; Homotypic sinonim: *Fistulariella carpatica* (Körb.) Bowler & Rundel 1977; - Romania, Hunedoara, Hațeg mountains, Zănoaga, no date, leg. Simkovics L.

***Ramalina fraxinea* (L.) Ach.** – (n. 5864) – ref.: *Synopsis methodica lichenorum*: 296 (1814); basionym: *Lichen fraxineus* L. ; Zahlbruckner's Cat. Lich. Univ. 6: 478; 8: 576 | Lamb's Index nom. lich.: 619. ; urn : Isid : indexfungorum.org : names : 486976; *Ramalina fraxinea* (L.) Ach. 1930 ; Name Status: Accepted Name. Latest taxonomic scrutiny: Kirk P.M., 14-Sep-2005.; sin.: *Ramalina calicaris* var.*fraxinea* (Williams, 1889:16; Weber, 1890: 59) Cass, Gage, Lancaster, Saunders; *Lichen fraxineus* L. ; *Ramalina fraxinea* var. *ampliata* (Ach.) Ach. 1810 ; *Ramalina fraxinea* forma *ampliata* (Ach.) Anders; *Ramalina fraxinea* f. *taeniaeformis* (Ach.) Leight.; *Ramalina fraxinea* subsp. *caliciformis* (Nyl.) de Lesd. 1954 ; *Ramalina fraxinea* var. *caliciformis* Nyl. ; *Ramalina fraxinea* var. *calicaris* (L.) Schaer.; *Ramalina fraxinea* var. *yemensis* Ach.; *Ramalina fraxinea* f. *gracilentata*; *Ramalina fraxinea* f. *attenuata*; - Hungary, Csongrad, Eperjes, forest , no date, leg. Simkovics L.

Fam. *Sphaerophoraceae* Fr., 1831

Gen. *Sphaerophorus* Pers.

***Sphaerophorus fragilis* L.** – (n. 5865) – ref.: *Sphaerophorus fragilis* (L.) Pers. 1794  
- Name Status: Accepted Name. Latest taxonomic scrutiny: Kirk P.M., 14-Sep-2005;  
sin.: *Cladonia fragilis* (L.) F.H. Wigg. 1780; *Coralloides fragilis* (L.) Hoffm. 1794;  
*Lecanora fragilis* (Scop.) Zahlbr. 1928; *Lichen caespitosus* Roth 1788; *Lichen fragilis*  
L. 1753; *Sphaerophorus caespitosus* (Roth) DC. 1805; *Sphaerophorus coralloides*  
var. *caespitosus* (Roth) Turner & Borrer 1839; *Sphaerophorus coralloides* var.  
*fragilis* Taylor; *Stereocaulon fragile* (L.) Hoffm. 1796; *Verrucaria fragilis* (L.) Humb.  
1796; - Romania, Hunedoara, mt. Retezat, July 1872, leg. Simkovics L.

Ord. *Peltigerales* W. Watson, 1929

Subord. *Collematineae* Miadlikowska & Lutzoni

Fam. *Collemataceae* Zinker, 1827

Gen. *Collema* F.H. Wigg. 1780

***Collema flaccidum* (Ach.) Ach. 1810** – (n. 5869) – ref.: *Lichenogr. univ.*: 647  
(1810); urn: indexfungorum.org: names 383265; sin.: *Collema rupestre* (Sw.)  
Rabenh. 1845; *Collemis rupestris* (Sw.) Clem.; *Collemodiopsis flaccidum* (Ach.)  
Hav. 1918; *Eucollema flaccidum* (Ach.) Horw. 1912; *Gabura flaccida* (Ach.) Kuntze  
1891; *Lethagrium flaccidum* (Ach.) Gray 1821; *Lethagrium rupestre* (Sw.) A.  
Massal.; *Lethagrium flaccidum* (Ach.) Arnold 1867; *Lethagrium rupestre* (Sw.) A.  
Massal. 1853; *Lichen flaccidus* Ach. 1795; *Lichen rupestris* Sw. 1781; *Parmelia*  
*flaccida* (Ach.) Ach. 1803; *Parmelia rupestris* (Sw.) F. Desp. 1838; *Synechoblastus*  
*flaccidus* (Ach.) Körb. 1855; *Synechoblastus rupestris* (Sw.) Trevisan; - Romania,  
Arad, Radna, August 1871, leg. Simkovics L

**Subclas. *Ostropomycetide* V. Reeb, Lutzoni & C. Roux, 2004**

Ord. *Ostropales* Nannf., 1932

Fam. *Thelotremataceae* (Nyl.) Stizreb., 1862

Gen. *Diploschistes* Norman

***Diploschistes scruposus* (Schreb.) Norman** – (n. 5863) – ref.: *Nytt Mag. Natur.*  
*7*: 232 (1853); *Methodus*: 147 (1803); SF – 384474; sin.: *Lichen scruposus* Schreb.

1771 (basionym); *Diploschistes scruposus* (Schreb.); Norman 1853; *Parmelia scuposa* (Schreb.) Hepp. 1824; *Urceolaria scuposa* (Schreb.) Ach. ; - Hungary, Pest, Budapest, no date, leg. Simkovics L.

**Clas. Pezizomycetes O.E. Eriksson & K. Winka, 1997**

Ord. *Pezizales* J. Schrot., in Engler & Prantl, eds., 1894

Fam. *Pezizaceae* Dumort, 1829

Gen. *Peziza* Dill ex Fries

***Peziza aurea* Sowerby**– (n. 5887) –ref.: *Saccardo's Syll. fung.* VIII: 224, 225; XV: 246.; - Romania, Bihor, Oradea, no specified date, leg. no specified (Simkovics L. writing)

**Clas. Leotiomycetes O.E. Erikson & K. Winka, 1997**

Ord. *Erysiphales* H. Gwynne-Vaugham, 1922

Fam. *Erysiphaceae* Tul & C. Tul, 1861

Gen. *Erysiphe* R. Hedw. Ex DC., 1805

***Erysiphe lampocarpa* Lev (L.)** – (n. 5873) – ref.: *Flore Francaise.*, Troiseme Edition 2: 272 (1805); - Ungaria, Pest, Csepel Island, Szigetujfalu, on leaves of *Leonurus cardiaca* , 10.07.1870, leg. I.A. Tauscher.

Ord. *Helotiales* Nannf., 1932

Fam. *Helotiaceae* Rehm, 1886, nom. cons.

Gen. *Bisporella* Sacc.

***Bisporella citrina* (Batsch) Korf & S.E. Carp ., 1974** – (n. 5883) – ref.: *Mycotaxon* 1(1): 58 (1974); Index of Fungi 4: 302. ; sin.: *Bisporella citrina* (Batsch: Fries) Korf & Carpenter ; *Bisporella claroflava* (Grev.) Lizon & Korf 1995; *Calycella citrina* (Hedw.) Fr.; *Calycella citrina* ([Hedw.] Fr) Boud.; *Helotium citrinum* Hedw.; *Helotium claroflavum*; *Helotium flavum* Klotzsch 1887; *Octospora citrina* Hedw. 1789; *Peziza citrina* Batsch 1789; *Peziza claroflava*; - Romania, Hunedoara, Runca (the river Jiu's pars), no date mentioned, leg. Simkovics L.

Ord. *Rhytismatales* M.E. Barr, 1976 ex Minter, in Hawksworth & Eriksson, 1986

Fam. *Rhytismataceae* Chevall., 1826

Gen. *Colpoma* Wallr.

***Colpoma quercinum* (Pers.) Wallr.** – (n. 5879) – ref.: *Fl. Crypt. Germ.*, Sect. II (Nurnberg) 2 : 423 (1823); sin.: *Cenangella quercina* (Hazsl.) Saac.; *Cenangium quercinum* (Pers.) Fr.; *Cenangium quercinum* Hazsl.; *Clithriss nigra* (Tode) Keissl.; *Clithriss quercina* (Fr.) P. Karst.; *Colpoma nigrum* (Tode) Hohn.; *Hypoderma quercinum* DC.; *Hysterium nigrum* Tode; *Hysterium quercinum* Pers.; *Phaengella quercina* (Hazsl.) Sacc.; *Triblidium quercinum* (Pers.) Pers.; - Hungary, Pest, Budapest, no date mentioned, leg. Simkovics L.

**Clas. Sordariomycetes O.E. Erikson & K. Winka, 1997**

Ord. *Phyllachorales* M.E. Barr, 1983

Fam. *Phyllachoraceae* Theiss. & H. Syd., 1915

Gen. *Poystigma* DC., 1815

***Polystigma rubrum* (Pers.) DC.** – (n. 5871) –ref.: *Flore Francaise, Troisieme Edition* . 6 : 164 (1815); Basionim: *Xyloma rubrum* Pers., *Observator Mycologicae* 2 : 101 (1800) [1799]; *Mémoires du Museum National d’Histoire Naturelle*, Paris 3: 337 (1817); sin.: *Polystigma rubrum* subsp. *rubrum* (Pers.) Fr., 1815; *Polystigma rubrum* (Pers.) Pers. 1817; *Polystigma rubrum* var. *amygdali* Rehm 1906; *Polystigma rubrum* forma *pruni-domesticae* Sacc. 1876; *Polystigma rubrum* forma *pruni-spinosae* Sacc. 1876; *Polystigmia rubra* (Desm.) Sacc. 1884; *Polystigmia rubra* var. *amygdalina* Desm. 1843; *Polystigmia rubra* forma *ramipetiolicola* Sacc. 1903; *Septoria rubra* (Pers.) Desm. 1843; *Sphaeria rubra* (Pers.) Fr. 1815; *Dothidea rubra* (Pers.) Fr. 1823 ; *Guignardia circumscissa* (Sacc.) Traverso 1906; *Laestadia circumscissa* Sacc. 1903; *Libertella rubra* (Pers.) Bonord. 1851; - Hungary, Heves, on plum-tree leaves, pass. 1872, leg. Vrabelyi.

**Subclas. Hypocreomycetidae O.E. Eriksson & Winka, 1997**

Ord. *Hypocreales* Lindau, 1897 in Engler & Prantl, eds., 1897

Fam. *Clavicipitaceae* (Lindau) Earle ex Rogerson, 1971

Gen. *Claviceps* Tul., 1883

***Claviceps purpurea* (Fr.) Tul.** – (n. 5875) – ref.: *Ann. Sci. Nat. Ser.III*, vol. 20, p. 45, 1853; sin.: *Claviceps purpurea* var. *purpurea* (Fr.) Tul. 1883; *Claviceps*

*purpurea* forma *secalis* Krebs{?}; *Claviceps purpurea* var. *spartinae* R.A. Duncan & J.F. White 2002; *Cordyceps purpurea* (Fr.) Berk.; *Sclerotium clavus* DC. 1815; *Sphacelia segetum* Lév. 1827; *Sphaeria purpurea* Fr. 1823; - Hungary, Jasz-Nagykun-Szolnok, Kisujszallas, 1873, leg. Simkovics L.

Fam. *Hypocreaceae* De Not, 1844

Gen. *Hypomyces* (Fr.) Tul., 1860

***Hypomyces chrysospermus* Tul. & C. Tul. 1860** – ( n. 5884) – ref.: *Systema Mycologicum* 3(2) 438 (1832); *Annales Mycologici* 18(4-6): 187 (1920) [1921]; *Annales des Sciences Naturelles, Botanique, 4e Série* 13: 16 (1860).; *Annalen der Botanik* 15: 16 (1795); (Sepedonium spp. Described by Link ex Greville in 1924); sin.: *Apiocrea chrysosperma* (Tul. & C. Tul.) Syd. & P. Syd. 1920; *Mucor chrysospermus* Bull. 1791; *Mycobanche chrysosperma* Bull. 1793; *Reticularia chrysosperma* (Bull.) Fr.; *Sepedonium chrysospermum* (Bull.) Fr. 1832; *Sepedonium mycophilum* (Pers.) Link 1809; *Sporotrichum mycophilum* (Pers.) Spreng. 1827 ; *Trichoderma mycophilum* (Pers.) Schwein. 1822; *Uredo mycophila* Pers. 1795; - Hungary, Szabolcs-Szatmar-Bereg, Nyiregyhaza (upper cemetery), September, 1872, leg. Simkovics L.

Fam. *Nectriaceae* Tul. & C. Tul., 1844

Gen. *Nectria* Fr.

***Nectria cinnabarina* (Tode ex Fr.) Fr.** – (n. 5885) – ref.: *Fung. mecklenb. sel.* (Lüneburg) 1: 18 (1790); *Summa veg. Scand.*, Section Post. (Stockholm): 388 (1849); sin.: *Nectria cinnebarina* (Tode) Fr. 1849.; *Cucurbitaria cinnabarina* (Tode) Grev.; *Knyaria purpurea* (L.) Pound & Clem.; *Knyaria vulgaris* (Tode) Kuntze; *Nectria cinnabarina* var. *Ribis* (Tode) Wolenw.; *Nectria fuscopurpurea* Wakef.; *Nectria ochracea* Grev. & Fr.; *Nectria purpurea* (L.) G.W. Wilson & Seaver; *Nectria ribis* Niessl; *Sphaeria cinnabarina* Tode; *Sphaeria decolorans* Pers.; *Sphaeria fragiformis* Sowerby; *Sphaeria ochracea* Grev., ex Fr.; *Tremella purpurea* L.; *Tubercularia confluens* Pers.; *Tubercularia vulgaris* Tode; - Hungary, Pest, Budapesta, (on bark of *Celtis australis*), no date, leg. Simkovics L.

***Nectria cinnabarina* (Tode) Fr., (1849)** – (n. 5888) – ref.: *Coloured Figures of*

*English Fungi ... 1* (1821); *Summa veg. Scand.*, Section Post. (Stockholm): 388 (1849); sin.: *Nectria cinnebarina* (Tode) Fr. 1849; ; *Cucurbitaria cinnabarina* (Tode) Grev.; *Knyaria purpurea* (L.) Pound & Clem.; *Knyaria vulgaris* (Tode) Kuntze; *Nectria cinnabarina* var. *Ribis* (Tode) Wolenw.; *Nectria fuscopurpurea* Wakef.; *Nectria ochracea* Grev. & Fr.; *Nectria purpurea* (L.) G.W. Wilson & Seaver; *Nectria ribis* Niessl; *Sphaeria cinnabarina* Tode; *Sphaeria decolorans* Pers.; *Sphaeria fragiformis* Sowerby; *Sphaeria ochracea* Grev., ex Fr.; *Tremella purpurea* L.; *Tubercularia confluens* Pers.; *Tubercularia vulgaris* Tode; - Hungary, Szabocs-Satmar-Bereg, Nyiregyhaza, no date, leg. Simkovics L.

**Subclas. Sordariomycetidae O.E. Erikson & K. Winka, 1997**

Ord. *Diaporthales* Nannf., 1932

Fam. *Valsaceae* Tul. & C. Tul., 1861

Gen. *Valsa* E.M. Fries, *man. cons.*

***Valsa quaternata* Fr. Ruth.** – (n. 5880) – ref.: *Observ. mycol.* 1: 64 (1796); *Eutypella quaternata* (Pers.) Rappaz 1987 (accepted name); sin.: *Eutypa quaternata* (Pers.) L.C. Tiffany & J.C. Gilman 1965; *Valsa quaternata* (Pers.) Fr.; *Sphaeria quaternata* Pers.; *Libertella faginea* Desm.; *Quaternaria personii* Tul. & C. Tul.; *Quaternaria quaternata* (Pers.) J. Schrot.; - Ramania, Arad, Radna, on beech, January 1880, leg. Simkovics L.

**Subclas. Xylariomycetidae O.E. Eriksson & K. Winka, 1997**

Ord. *Xylariales* Nannf., 1932

Fam. *Diatrypaceae* Nitschke, 1869

Gen. *Eutypa* Tul. & C. Tul.

*Eutypa lata* (Pers.) Tul. & C. Tul. – (n. 5890) – ref.: *Select. fung. carpol.* (Paris) 2: 56 (1863); *Observ. Mycol.* 1: 66 (1796) : Fr., *Syst. Mycol.* 2: 369. 1823.; sin.: *Sphaeria lata* Pers.; *Nemania lata* (Pers.) S. F. Gray, *Nat. Arr. Brit. Pl.*: 518. 1821.; *Eutypa lata* (Pers.: Fr.) Tul. & C. Tul., *Sel. Fung. Carp.* 2: 56. 1863.; *Valsa lata* (Pers) Nitschke; *Eutypa rhodi* (Nitschke) Fuckel; *Libertella blepharis* A.L. Sm.; *Diatrype lata* (Pers) Fr.; *Cytosporina lata* Hohn.; - Hungary, Csongrad, Eperjes, no date, leg. Simkovics L.

Fam. *Xylariaceae* Tul. & C. Tul.

Gen. *Paronia* (sin. *Hypoxylon* Bull. 1791)

***Paronia punctata* (L.) Fr.** - (n. 5893) – ref.: *Summa veg. Scand.*, Section Post. (Stockolm): 382 (1849); sin.: *Hypoxylon punctatum* (L.) Grev.; *Peziza punctata* L.; *Sphaeria paronia* (L.) Pers.; *Sphaeria truncata* Bolton; *Sphaeria punctata* (L.) Curr.; - Hungary, Pest, Budapest, no date mentioned., leg. Simkovics L.

**Phylum *Basidiomycota* H.C. Bold, 1957 ex R.T. Moore, 1980**

**Subphylum *Agaricomycotina* Dowell, 2001**

**Clas. *Agaricomycetes* Dowell, 2001**

Ord. *Russulales* Kreisel ex P.M. Kirk et al., 2001

Fam. *Herciaceae*

Gen. *Hercium* Pers., 1794

***Hercium erinaceus* (Bull.) Pers.**– (n. 5891) – ref.: *Comment. Fungis Clavaeform:* 27 (1797); Basionym: *Hydnum erinaceus* Bull. 1791; *Herbier de la France* 1: tab.34 (1781) [1780 – 1781]; sin.: *Clavaria erinaceus* (Bull.) Paulet; *Dryodon erinaceus* (Bulliard) P. Karsten, (1882); *Hercium erinaceus* forma *caput medusae* (Bull.) Nicol.; *Hydnum erinaceus* Bull. 1791 ; *Merisma caput medusae* (Bull.) Spreng.; - Romania, Bihor, Salonta (Rîpa), on beech trunk, no date, leg. Simkovics L.

**Subclas. *Agaricomycetidae* Locquin 1984 ex Parmasto, 1986**

Ord. *Agaricales* Underw., 1899

Fam. *Marasmiaceae* Kiihner

Gen. *Lachnella* Fr.

***Lachnella alboviolascens* (Alb. & Schwein.) Fr. 1849** (accepted name) ; - (5870) – ref.: *Ann. Mag. Nat. Hist.* III, 7, 379, 1861.; *Summa Vegetabilium Scandinaviae.*, Sectio Posterior 365 (1849); sin.: *Lachnella alboviolascens* (Alb. & Schwein.) Fr. 1849 (accepted name); *Chaetocypha alboviolascens* (Alb. & Schwein. ex Fr.) Kuntze 1891; *Chaetocypha dochmiospora* (Berk. & Broome) Kuntze 1891; *Chaetocypha stuppea* (Berk. & Broome) Kuntze 1891; *Corticium dubium* Qué.



1878; *Cyphella alboviolascens* (Alb. & Schwein. ex Fr.) P.Karst 1870; *Cyphella curreyi* Berk. & Broome; *Cyphella dochmiospora* Berk. & Broome 1873; *Cyphella stuppea* Berk. & Broome 1878; *Cyphellopsis alboviolascens* (Alb. & Schwein.) Donk 1931; *Peziza alboviolascens* Alb. & Schwein. 1805; *Peziza granuliformis* Nees 1817; *Peziza sclerotium* sensu auct. Non Donk (1959); - Hungary, Pest, Buda (Lipotfold), 29.03.1872, leg. Simkovics L.

Fam. *Nidulariaceae* Fr. 1780

Gen. *Crucibulum* Schumacher, 1817

***Crucibulum vulgare* Tul. & C. Tul.** – (n. 5881) – ref.: Ann. Sci. Nat. 3(1): 90, 1844; - sin.: *Crucibulum laeve* (Huds.) Kambly; - Romania, Bihor, Oradea, January 1880, leg. Simkovics L.

Ord. *Polyporales* Gaum.

Fam. *Polyporaceae* Fr. ex Corda

Gen. *Trametes*

***Trametes hirsuta* (Wulfen) Pilát** – (n. 5878) – ref.: *Atlas des Champignons de l'Europe. Polyporaceae I* (Praha) 3: 265 (1939); *Collectanea Botanica a Barcinonensi Botanica Instituto* 3: 265 (1821) sin.: *Boletus hirsutus* Wulfen; *Polystictus hirsutus* (Wulfen) Fr.; *Polyporus hirsutus* (Wulfen) Fr.; *Coriolus hirsutus* (Wulfen) Pat.; *Microporus hirsutus* (Wulfen) Kuntze; *Polystictoides hirsutus* (Wulfen) Lazaro Ibiza; *Trametes poroides* Lazaro Ibiza; - Hungary, Csongrad, Eperjes, no date, leg. Simkovics L.

**Subphylum *Pucciniomycotina* R. Bauer et al., 2006**

**Clas. *Pucciniomycetes* R. Bauer et al., 2006**

Ord. *Pucciniales* Clem. & Shear, 1931

Fam. *Pucciniaceae*

Gen. *Puccinia* Pers. 1801

***Puccinia graminis* Pers.** – (n. 5874) – ref.: *Roemer's Neues Magazin für die Botanik*: 119 (1794); sin.: *Dicaeoma anthistiriae* (Barclay) Syd. 1922; *Puccinia albigenis*

Mayor 1957; *Puccinia anthistiriae* Barclay 1889; *Puccinia brizae-maximae* T.S. Ramakr. 1954; *Puccinia cerealis* H. Mart; *Puccinia elymina* Miura 1928; *Puccinia favargerii* Mayor 1957; *Puccinia graminis avenae* Erikss. & Henning; *Puccinia graminis* var. *graminis* Pers. 1794; *Puccinia graminis* forma *macrospora* Baudyš ; *Puccinia graminis* subsp. *major* A.L. Guyot, Massenot & Saccas 1946; *Puccinia graminis secalis* Erikss. & Henning; *Puccinia graminis* var. *stakmanii* A.L. Guyot, Massenot & Saccas ex Z. Urb. 1967; *Puccinia graminis* var. *tritici* A.L. Guyot, Massenot & Saccas 1946; *Puccinia graminis tritici* Erikss. & Henning; *Puccinia jubata* Ellis & Barthol. 1896; *Puccinia linearis* Röhl.; *Puccinia megalopotamica* Speg. 1899; *Puccinia secalis* Grove; *Puccinia vilis* Arthur; *Trichobasis linearis*; - Hungary, Csongrad, Eperjes, on leaves *Zea mays*, no date, leg. Hugo.

***Puccinia helianthi* Schw.** – (n. 5876) – ref.: *Schr. naturf. Ges. Leipzig* 1: 73 (1822); sin.: *Dicaeoma helianthii* Kuntze; - Hungary, Fejer, Ercsi, August 1872, leg. Tauscher.

***Puccinia recondita* Dietel & Holw. 1857** – (n. 5872) – ref.: *Bull. Soc. bot. Fr.* 4: 798 (1857); sin.: *Aecidium anchusae* Erikss. & Henning 1895; *Aecidium aquilegiae* Pers. 1803; *Aecidium asperifolii* Pers. 1796; *Puccinia rubigo-vera* (DC.) G. Winter 1881; *Puccinia secalina* Grove 1913; *Puccinia straminis* L.; *Puccinia triticina* Erikss. 1899; *Trichobasis rubigo-vera* (DC.) Lév. 1840; *Uredo rubigo-vera* DC. 1815; - Hungary, Pest, Budapest, August 1873, leg. Simkovics L.

Fam. *Uropyxidaceae* (Arthur) Cummins & Y. Hirats., 1983

Gen. *Ochropsora*

***Ochropsora anemones* (Pers.) Ferd.& Jorgensen** – (n. 5877) – ref.: *Skovtraeernes Sygdomme* 1: 253 (1938); sin: *Aecidium anemones* Hoffm. (1796); *Aecidium anemones* Schumach. (1803); *Aecidium anemones* Pers. (1801).; - Hungary, Csongrad, Eperjes, 1868, leg. Simkovics L.

**Kingdom Plantae** Haeckel, 1866

Subkingdom *Viridiplantae* Cavalier-Smith, 1981

**Phylum Charophyta**

**Clas. Charophyceae**

Ord. *Charales* Lindley, 1836

Fam. *Characeae*

Trib *Chareae*Gen. *Chara* Linnaeus, 1753

***Chara aspera* Deth. ex Willd.** – (n. 5910) – ref.: *Ges. Naturf. Freunde Berlin Mag. Neusten Eutdeck. Gesammten Naturk.* 3: 298 (1809); sin.; *Chara aspera* Dethard. ex Willd. var. *subinermis* Kütz., *Chara aspera* Dethard. ex Willd. var. *capillata* A. Braun, *Chara aspera* Dethard. ex Willd. var. *capillata* A. Braun, *Chara aspera* Dethard. ex Willd. var. *lacustris* H. Groves & J. Groves, *Chara globularis* Thuill var. *aspera*; *Chara delicatula* Desv. in Loisel., *Chara aspera* Dethard. ex Willd. var. *aspera* sensu J. A. Moore, *Chara deliculata* Kutz; *Chara fallax* C. Agardh.; *Chara galioides* C. Agardh, nom. illeg.; *Chara galioides* var. *aspera* (Willdenow) R.D. Wood; *Chara pulchella* var. *delicatula* (Desvaux) Wallroth.; - Germany, Berlin, Krumme Lanke, 28.06.1861, leg. L. Holtz.

***Chara baltica* Bruzelius** – (n. 5909) – ref.: *Observ. Charae* 11 (1824); sin.: *Chara baltica* Bruz. var. *elongate*; *Chara baltica* Bruzelius var. *rigida* J. Groves & Bull.-Webst., *Chara baltica* var. *liljebladii* (Wallman) A. Braun.; *Chara hispida* var. *baltica* (Bruz.) R.D. Wood; *Chara nolteana* A. Braun; *Chara firma* C. Agardh.; - Germany, unidentified location (Badstoder ?), July 1861, leg. Ludwig Holtz.

***Chara canescens* Desv. & Lois** – (n. 5907) – ref.: *Not. Fl. France* 139 (1810); Sowerby's *English Botany* 3<sup>rd</sup> Edition, Vol.12. Cryptogamia, 1886; sin.: *Chara crinita* Wallar. (Weiblich); *Chara crinita* Wallroth 1815; *Chara horridula* Detharding ex Reichenbach 1829; *Chara pusilla* Floerke ex Kützing 1843 p. p.; *Chara horridula* Rabenhorst 1847, nom. illeg., non Detharding ex Reichenbach; *Chara condensata* Wallman 1853, nom. illeg., non Ruprecht 1845 [= *Nitella hyalina* (De Candolle in Lamarck & De Candolle 1815) C. A. Agardh 1824]; - Germany, Baden, 05.12.1869, leg. Ludwig Holtz.

***Chara contraria* A. Br.** – (n. 5906) – ref.: *Phycol. Germ.* 258 (1845); Kützing F.T. (1845), *Phycologia germanica. Pp. x +340.* Nordhausen; sin.: *Chara vulgaris* Linnaeus; *Chara contraria* A. Br. ex Kutz, var. *contraria*; *Chara vulgaris* L. forma *contraria* (A. Braun ex Kütz.) R. D. Wood, *Chara vulgaris* L. var. *contraria* (A. Braun ex Kütz.) J. A. Moore, nom. inval., - Germany, unidentified location (Ostprenfsen ?), leg.: Dr. Sanio, A. Braun.

***Chara globularis* Thuillier 1799** – (n. 5903) – ref.: *Fl. Env. Paris, éd. 2,* 472 (1799);

*Brüchige Armelechteralge, Bruch-Armelechter*; sin.: *Chara gymnophylla* (A. Braun 1834) A. Braun 1835; - Hungary, Pest, Budapesta (Soroksor), 24.09.1873, leg. Simkovics L.

***Chara globularis* Thuill.** – (n. 5905) – ref.: *Fl. Env. Paris, éd. 2*, 472 (1799); Not. France 137 (1810); sin.: *Chara leptosperma* A. Br.; *Chara fragilis* Desv.; *Chara fragilis* Desv. var. *subverucosa* A. Braun; *Chara capillacea* Thuill., *C. pulchella* Wallr., *C. fragilis* Desv. var. *hedwigii*; *C. fragilis* Desv. var. *fulcrata* (Ganterer) Bréb.; *C. fragilis* Desv. var. *capillacea* (Thuill.) H. Groves & J. Groves, *C. fragilis* Desv. var. *sturrockii* H. Groves & J. Groves, *C. globularis* Thuill. var. *capillacea* (Thuill.) Zaneveld, *C. vulgaris* L. forma *sturrockii* (H. Groves & J. Groves) R. D. Wood, *C. sturrockii* (H. Groves & J. Groves) R. D. Wood, nom. inval., *C. globularis* Thuill. var. *hedwigii* (Agardh ex Bruzelius) J. A. Moore, nom. inval., - Hungary, Heves, Hatvan, 21.06.1873, leg. Simkovics L.

***Chara hispida* L.** – (n. 5902) – ref.: *Sp. Pl.* 1156 (1753); sin.: *Chara hispida* forma *major* Hartm. ; *Chara hispida* var. *gymnoteles* A. Braun ; *Chara hispida* var. *macracantha* Kütz. S *Chara horrida* auct. non Nordst. & Wahlst.; *Chara baltica* Bruzelius var. *affinis* H. Groves & J. Groves ; *Chara major* (Hartm.) Ny.; *Chara hispida* var. *major* (Hartm.) R. D.; - Hungary, Pest, Budapest (Bekas Megyer.), 12.06.1873, leg. Simkovics L.

***Chara tenuispina* A. Braun 1835** – (n. 5900) – ref.: *Fl. Env. Paris, éd. 2*, 472 (1799); sin.; *Chara globularis* var. *tenuispina* (A. Braun 1835) R. D. Wood 1962; “*Chara belemnophora*” Schimper, nom. ined. (fide Braun 1867: 7); - Germany, Berlin, Spandau (west of Berlin), no date, leg. A. Braun.

***Chara tomentosa* Wallr.** – (n. 5908) – ref.: *Sp. Pl.* 1156, (1753); sin.: *Chara ceratophylla* Wall. (*Annus. Bot.* 192 (1815); *Chara latifolia* Wild.; *Chara tomentosa* Linnaeus 1753 var. *tomentosa*; *Chara ceratophylla* f. *macroteles* A. Braun 1847; - Germany, Halle, Salzsee bei Halle, salinous place, 1869, A. Braun.

***Chara vulgaris* L. var. *vulgaris* f. *vulgaris***– (n. 5904) – ref.: *Sp. Pl.* 1156 (1753); *Ann. Sci. Nat. Bot. Ser. 2*, 1: 355 (1834); sin.: *Chara foetida* A. Br.; *Chara gymnophylla* auct., non A. Braun, *Flora* 18: 62 (1835); *Chara vulgaris* L. var. *atrovirens* (Lowe) H. Groves & J. Groves,; *Chara vulgaris* var. *papillata* Wallroth 1815; *Chara vulgaris* L. var. *gymnophylla* auct., non (A. Braun) Nyman, *Chara vulgaris* L. var. *refracta* (Kütz.) J. Groves & Bull.-Webst., *Chara polysperma* Kützing

1845, nom. illeg.; *Chara stricta* Kützing 1834; - Hungary, Pest, Budapest (Bekas Megyer), 12.06.1873, leg. Simkovics L

Gen. *Lychnothamnus*

***Lychnothamnus barbatus* (Meyen) Leonhardi.** – (n. 5901) – ref.: *Vergr. 15. 19 Fiff. 12. ...*; Basionym *Chara barbata* Meyen...; Leonhardi, P.C.P. G.H. von (1863). *Ueber die bohmischen Characeen.* Lotos 13: 55-62.; sin.: *Chara barbata* A. Br.; *Chara barbata* Meyen; *Charopsis barbata* (Meyen 1827) Kützing 1843; *Nitella barbata* (Meyen) Rabenhorst 1847; - unidentified location, July 1842, leg. Dr. C. Sanio

Trib *Nitelleae*

Gen. *Nitella* C.A. Agardh, 1824

***Nitella mucronata* (A. Braun) Miq. in H. C. Hall, var. *mucronata*** – (n.5898) – ref.: *Fl. Belg. Sept. 2: 428 (1841)*; sin.: *Nitella mucronata* var. *heteromorpha* A. Br.; *Nitella mucronata* (A. Braun) Miq. var. *heteromorpha* (A. Braun) Kütz.; *N. mucronata* (A. Braun) Miq.; *N. mucronata* var. *mucronata*; *Chara mucronata* (A. Braun); - Ungaria, Jasz-Nagykun-Szolnok, Karcag, Kis Ujszallas, 08.07.1873, leg. Simkovics L.

***Nitella opaca* (C. Agardh ex Bruzelius) C. Agardh,** – (n.5894) – ref.: *Syst. Alg. 124 (1824)*; sin.: *Chara opaca* C. Agardh ex Bruzelius; *Nitella syncarpa* auct. non (Thuill.) Chevall.; *Nitella opaca* var. *attenuata* H. Groves & J. Groves; *Nitella opaca* var. *brachyclema* J. Groves & Bull.-Webst; - Germany, no date, leg. A. Braun.

***Nitella opaca* (Bruz.) Agardh** – (n.5896) – ref.: *Syst. Alg. 124 (1824)*; sin.: *Chara opaca* C. Agardh. ex Bruzelius; *Nitella opaca* C. Agardh; - Germany, 28.05.1869, leg. Ludwig Holtz

***Nitella tenuissima* (Desv.) Kütz.** – (n.5895) – ref.: *Phycol. General. 319 (1843)*; sin.: *Chara tenuissima* Desv.; *Chara flexilis* L. var. *stellata* Wallr; *Chara stelata* (Wallr) Gray; *Nitella tenuissima minor* Desv.; - Germany, no date, leg. A. Braun.

Gen. *Tolypella* (A. Braun) A. Braun, 1857

***Tolypella nidifica* (O.F.Müll.) Leonh.** – (n.5897) – ref.: *Verh. Naturf. Vereins Brünn* 2: 176 (1864); sin.: *Chara nidifica* (O.F.Muller) Bruzelius; *Chara flexilis* var. *nidifica* Fries.; *Nitella flexilis* (L.) C. Agardh var. *nidifica* (O. Müll.) Hartm. ex Wallman; *Nitella nidifica* (Muller) C. Agardh.; *Tolypella nidifica* (O. Müll.) Leonh. var. *nidifica* sensu J. A. Moore.; - Germany, Bavaria, Augsburg, Grabaen, the Botanical Gardens, 05.07.1859, leg. Ludwig Holtz.

**Phylum Anthocerophyta**

Clas. *Anthocerotopsida*

Ord. *Anthocerotales*

Fam. *Anthocerotaceae* Dumort.

Gen. *Anthoceros* L., 1753

***Anthoceros laevis* L.** – (n. 5176) – ref.: *Sp. Pl.* 2: 1139 (1753); *Bull. Torrey Bot. Club.* 78: 347 (1951); Nog. And Inue, *Bull. Nat. Sci. Mus.* 9 (3): 378 (1966); Prophan and Joshi, *Proc. WCB*; 2003; sin.: *Anthoceros curnowii*; *Anthoceros dichotomus* var. *gussonei*; *Anthoceros donnellii*; *A. l.* var. *aquatica*; *A. major*; *A. polymorphus* var. *laevis*; *A. punctatus* var. *laevis*; *A. punctatus* var. *major*; *Carpoceros laevis*; *Phaeoceros laevis* Prosk.; *Phaeoceros laevis* sp. *laevis* (L.) Prosk.; *Phaeoceros miyakeanus* Schiffn; - Hungary, Baranya, Hosszuheteny, July 1874, leg. Simkovics L.

***Anthoceros laevis* L.** – (n. 5201) – ref.: *Sp. Pl.* 2: 1139 (1753); *Bull. Torrey Bot. Club.* 78: 347 (1951); Nog. And Inue, *Bull. Nat. Sci. Mus.* 9 (3): 378 (1966); Prophan and Joshi, *Proc. WCB*; 2003; sin.: *Anthoceros curnowii*; *Anthoceros dichotomus* var. *gussonei*; *Anthoceros donnellii*; *A. l.* var. *aquatica*; *A. major*; *A. polymorphus* var. *laevis*; *A. punctatus* var. *laevis*; *A. punctatus* var. *major*; *Carpoceros laevis*; *Phaeoceros laevis* Prosk.; *Phaeoceros laevis* sp. *laevis* (L.) Prosk.; *Phaeoceros miyakeanus* Schiffn; - Romania, Arad, Săvârşin (Calvaria hills), 22.07.1872, leg. Simkovics L.

**Phylum Marchantiophyta**

Clas. *Marchantiopsida*

Ord. *Marchantales*

Subord. *Marchntiineae*

Fam. *Aytoniaceae*

Gen *Reboulia* Raddi, 1818, nom. cons.

***Reboulia hemisphaerica* (L.) Raddi** – (n. 5197) – ref.: *Opuscoli scientifici d'una Società di professori della Pontifical Università di Bologna* 2(6): 357. 1818.; (basionym: *Marchantia hemisphaerica* L.); *Species Plantarum* 1138. 1753.; sin.: *Asterella hemisphaerica* (L.) P.Beauv.; *Asterella hemisphaerica* var. *fasciata* (Myrin ex Hartm.) Lindb.; *Grimaldia hemisphaerica* (L.) Lindenb.; *Grimaldia ventricosa* Wallr.; *Marchantia crinita* Michx.; *Marchantia crinita* Michx.; *Reboulia fasciata* (Myrin ex Hartm.) Ångstr.; *Rhakiocarpon conspersum* Corda; *Strozzius hemisphaericus* (L.) Gray; - Hungary, Pest, Budapesta, March 1873, leg. Simkovics L.

***Reboulia hemisphaerica* (L.) Raddi** – (n. 5199) – ref.: *Opuscoli scientifici d'una Società di professori della Pontifical Università di Bologna* 2(6): 357. 1818.; (basionym: *Marchantia hemisphaerica* L.); *Species Plantarum* 1138. 1753.; *Opuscoli scientifici d'una Società di professori della Pontifical Università di Bologna* 2: 357. 1818.; sin.: *Asterella hemisphaerica* (L.) P.Beauv.; *Asterella hemisphaerica* var. *fasciata* (Myrin ex Hartm.) Lindb.; *Grimaldia hemisphaerica* (L.) Lindenb.; *Grimaldia ventricosa* Wallr.; *Marchantia crinita* Michx.; *Marchantia crinita* Michx.; *Reboulia fasciata* (Myrin ex Hartm.) Ångstr.; *Rhakiocarpon conspersum* Corda; *Strozzius hemisphaericus* (L.) Gray; - Romania, Arad, Radna, Fortress Şoimuş (Solymosivar), 21.07.1872, leg. Simkovics L.

Family *Marchantiaceae*

Gen. *Marchantia* L. 1753

***Marchantia polymorpha* L.** – (n. 5182) – ref.: *Species Plantarum* 1137. 1753.; ITIS - *Taxonomic serial No.*: 15587; sin.: *Marchantia aquatica* (Nees) Burgaff.; *Marchantia polymorpha* var. *mamillata* I.Hagen; - Hungary, Pest, Budapesta, no date, leg. Simkovics L.

***Marchantia polymorpha* L.** – (n. 5186) – ref.: *Species Plantarum* 1137. 1753.; ITIS - *Taxonomic serial No.*: 15587; sin.: *Marchantia aquatica* (Nees) Burgaff.; *Marchantia polymorpha* var. *mamillata* I.Hagen; - Hungary, Pecs, Mecsek, no date, leg. Simkovics L.

Gen. *Preissia* Corda, 1829



***Preissia quadrata* (Scop.) Nees** – (n. 5008) – ref.: *Opuscoli scientifici d'una Società di professori della Pontifical Università di Bologna* 2(6): 357. 1818. (basonym: *Marchantia hemisphaerica* L.); *Species Plantarum* 1138. 1753.; sin.: *Chomiocarpon commutatus* (Lindenb.) Lindb.; *Chomiocarpon quadratus* (Scop.) Lindb.; *Marchantia commutata* Lindenb.; *Marchantia hemisphaerica* L.; *Marchantia quadrata* Scop.; *Preissia hemisphaerica* (L.) Coq.; *Preissia commutata* (Lindenb.) Nees; *Preissia quadrata* var. *commutata* (Lindenb.) Lindb.; - Hungary, Somogy, Bakony (Transdanubia mountain region), Koroshegy, April 1873, leg. Simkovics L.

Fam. *Concephalaceae*

Gen. *Concephalum* F.H. Wiggers, 1780, nom. cons.

***Conocephalum conicum* (L.) Underw.** – (n. 5174) – ref.: *Conocephalum* Hill, *Gener. Nat. Hist.*, ed. 2, 2: 118. 1773 ('*Conicephala*') (orth. cons.); Typus: *C. conicum* (L.) Dumort. (*Comment. Bot.*: 115. Nov (sero) - Dec (prim.) 1822) ('*Conocephalus conicus*') (*Marchantia conica* L.); sin.: *Asterella kiaerii* Kaal.; *Concephalus conicus* (L.) Dum.; *Concephalus conicus* (L.) Necker.; *Conocephalus conicus* (L.) Sten.; *Fagetalla conica* (L.) Corda; *Fimbriaria kiaerii* (Kaal.) Steph.; - *Hepatica conica* (L.) Lindb.; *Marchantia conica* L.; - Hungary, Baranya, Pecs, 1873, leg. Simkovics L.

Subord. *Ricciineae*

Fam. *Ricciaceae*

Gen. *Riccia* L., 1753

***Riccia cavernosa* Hoffm.** – (n. 4994) – ref.: *Deutschland Flora* 2: 95. 1796.; *Species Plantarum* 1138. 1753.; sin.: *Riccia cavernosa* var. *angustior* (Lindenb. ex Nees); *Riccia crystallina* auct.; *Riccia crystallina* var. *angustior* (Lindenb. ex Nees) Gottsche et al.; *Riccia crystallina* L. f. *angustior*; *Riccia multilamellata* Steph.; *Riccia rautanenii*; *R. suntica*; *R. telinii*; *R. terracianoii*; - Hungary, Fejer, Ercsi (on the Danube river banks), 14.10.1873, leg. Simkovics L.

***Riccia cavernosa* Hoffm.** – (n. 5007) – ref.: *Deutschland Flora* 2: 95. 1796.; *Species Plantarum* 1138. 1753.; sin.: *Riccia crystallina* L.; *Riccia crystallina* (L.) Wemst., 1902; *Riccia negrii* Gola, 1914; *Riccia plana*; - Hungary, Fejer, Ercsi (on the Danube river banks), October 1873, leg. Simkovics L.

***Riccia ciliata* Hoff.** – (n. 4998) – ref.: *Deutschland Flora* 2: 95. 1795 ; sin.: *Riccia ciliata* var. *epilosa* Warnst.; *Riccia ciliata* var. *intumescens* Bisch.; *Riccia dalstrandica* S.W.Arnell; *Riccia intumescens* (Bischn.) Underw.; - Slovakia, Presov (Eperjes Salgo), no date, leg. Harslinski

***Riccia fluitans* L. emend. Lorbeer** – (n. 4997) – ref.: *Riccia fluitans* L., Spec. Pl., 1, 1139 (1753); *Ricciella fluitans* A. Braun, *Flora*, 4, 757 (1821); sin.: *Riccia canaliculata* Hoff.; *Riccia canaliculata* var. *fluitans* (L.) Lindb.; *Riccia eudichotoma* Bischoff; *Riccia fluitans* var. *terrestris* T.Jensen ; *Riccia fluitans* L., 1753; *Riccia franconiae* Lorbeer.; *Ricciella fluitans* A. Braun; *Riccia nodosa* Boucher; *Riccia rhenana* Lorbeer; - Hungary, Pest, Budapest (in clogged waters), March 1873, leg. Simkovics L.

***Riccia fluitans* L. emend. Lorbeer** – (n. 5010) – ref.: *Riccia fluitans* L., Spec. Pl., 1, 1139 (1753); *Ricciella fluitans* A. Braun, *Flora*, 4, 757 (1821); sin.: *Riccia canaliculata* Hoff.; *Riccia canaliculata* var. *fluitans* (L.) Lindb.; *Riccia eudichotoma* Bischoff; *Riccia fluitans* var. *terrestris* T.Jensen ; *Riccia fluitans* L., 1753; *Riccia franconiae* Lorbeer.; *Ricciella fluitans* A. Braun; ; *Riccia nodosa* Boucher; *Riccia rhenana* Lorbeer; - Hungary, Pest, Budapest (in clogged waters), March 1873, leg. Simkovics L.

Gen. *Ricciocarpos* Corda, 1829

***Ricciocarpos natans* (L.) Corda** – (n. 4995) – ref.: *Naturalientausch* 12: 651 (1829); sin.: *Riccia natans* L. (*Systema Naturae, Editio Decima* 2: 1339. 1759); *Riccia capillata* Schmidel; *Riccia velutina* Wilson; *Ricciocarpus vetulinus* Stephani.; - Romania, Sibiu, Roşia (Veresmart = Roşia săsească), end Ficătar (Feketer), Timis; 06.09.1872, leg. Simkovics L.

**Clas. *Jungermanniopsida***

Subclas. *Jungermanniidae*

ORD. *JUNGERMANNIALES*

SUBORDER *PTILIDIINAE*

Fam. *Ptilidiaceae*

Gen. *Ptilidium* Nees., 1833

***Ptilidium ciliare* (L.) Hampe** – (n. 5167) – ref.: Sp. Pl. (ed. 1) 2: 1134. 1753; *Ptilidium ciliare* (L.) Hampe, Prodrum. Fl. Hercyn.: 76. 1836; sin.: *Blepharozia ciliaris* (L.) Dumort.; *Jungermannia ciliaris* L.; *Jungermannia ciliaris* var. *heteromalla* Dumort.; *Jungermannia hoffmannii* Wallr.; *Jungermannia leersii* Roth; *Ptilidium ciliare* var. *ericetorum* (Nees) Gottsche et al.; *Ptilidium ciliare* var. *heteromallum* (Dumort.) Gottsche et al.; *Ptilidium ciliare* var. *inundatum* Schiffn.; - Romania, Hunedoara, M-ții Retezat, Zănoaga, no date, leg. Simkovics L.

Fam. *Trichocoleaceae*

Gen. *Trichocolea* Dumort.

***Trichocolea tomentella* (Ehrh.) Dumort** – (n. 5000) – ref.: *Sylloge Jungermannidearum Europae Indigenarum* 67. 1831.; ITIS Taxonomic Serial Number 14293.; sin.: *Jungermannia tomentella* Ehrh. - Polonia, Lubusz, Zary (Sorau), no date, leg. Baenitz.

Subord. *Lepidoziinae*

Fam. *Lepidoziaceae*

Gen. *Bazzania* S.F. Gray, 1821, nom. cons., orth. cons.

***Bazzania trilobata* (L.) Gray** – (n. 5185) – ref.: *A Natural Arrangement of British Plants* 1: 704. 1821. (basonym: *Jungermannia trilobata* L.); *Species Plantarum* 1133. 1753.; sin.: *Bazzania trilobata* var. *depauperata* (Müll.Frib.) Grolle; *Herpetium trilobatum* (L.) Nees; *Jungermannia tridenticulata* Michx.; *Jungermannia trilobata* L.; *Mastigobryum trilobatum* (L.) Gottsche, Lindenb. & Nees.; *Mastigobryum tridenticulatum* (Michx.) Lindenb.; *Mastigobryum trilobatum* (L.) Nees; *Plagiochila corniculata* Dumort.; *Plagiochila tridenticulata* (Dumort.) Dumort.; *Pleuroschisma trilobatum* (L.) Dumort.; *Pleuroschisma trilobatum* var. *depauperatum* Müll.Frib.; *Radula corniculata* Dumort.; - no location and date, leg. Haslinszky.

***Bazzania tricrenata* (Wahlenb.) Lindb.** – (n. 5187) – ref.: *Memorie del Reale Istituto Lombardo di Scienze e Lettere, Serie 3, Classe di Scienze Matematiche e Naturali* 4: 415. 1877.; ITIS Taxonomic Serial Number 14364.; USDA Plants 2002, cod. VB.PC. 13083, sin.: *Bazzania deflexa* (Mart.) Steph.; *Bazzania triangularis* (Schleich. ex Steud.) Lindb.; *Bazzania tricrenata* var. *deflexa* (Mart.) C.Massal.; *Bazzania tricrenata* var. *intercedens* (Schiffn.) Jørg.; *Bazzania tricrenata* var. *minima* (Hook.) Jørg.; *Bazzania tricrenata* var. *pygmaea* (Nees) Arnell; *Herpetium*

*deflexum* (Mart.) Nees; *Jungermannia deflexa* Mart.; *Jungermannia triangularis* Schleich. ex Steud.; *Jungermannia tricrenata* Wahlenb. (*Flora Carpatorum Principalium* 364. 1814.); *Jungermannia trilobata* var. *minima* Hook.; *Mastigobryum deflexum* L.; *Mastigobryum deflexum* (Mart.) Ångstr.; *Mastigobryum deflexum* var. *pygmaeum* (Nees) Gottsche et al.; *Mastigobryum triangulare* (Schleich. ex Steud.) Steph.; *Mastigobryum tricrenatum* (Wahlenb.) C.Massal.; *Pleuroschisma triangulare* (Schleich. ex Steud.) Loeske; *Pleuroschisma tricrenatum* (Wahlenb.) Dumort.; *Pleuroschisma tricrenatum* var. *implexum* (Hook.) Copp.; - Romania, Hunedoara, Mt. Retezat, Zănoaga, 30.07.1872, leg. Simkovic L.

Gen. *Lepidozia* (Dumortier) Dumortier, 1835

***Lepidozia reptans* (L.) Dumort.** – (n. 5169) – ref.: Fl. E. Himal. 506 (1966).; sin.: *Herpetium reptans* (L.) Nees.; *Jungermannia reptans* L.; *Lepidozia obliqua* Steph.; *Lepidozia reptans* N. et E. ; *Lepidozia reptans* var. *julacea* (Nees) Gottsche et al.; *Lepidozia reptans* var. *laxa* Schiffn.; *Pleuroschisma reptans* (L.) Dumort.; - Romania, Hunedoara, Mt. Retezat, Clopotiva Valley, 30.07.1872, leg. Simkovic L.

Subord. *Cephaloziinae*  
Fam. *Cephaloziaceae*

Gen. *Cephalozia* (Dumortier) Dumortier, 1835

***Cephalozia bicuspidata* (L.) Dumort.** - (n. 5173) – ref.: Sp. Pl. I 1132. 1753; *Recueil d'Observations sur les Jungermanniacées* 18. 1835.; *Recueil d'Observations sur les Jungermanniacées* 18. 1835.; sin.: *Cephalozia alpicola* C.Massal.; - *Cephalozia bicuspidata* var. *alpicola* (C.Massal.) C. Massal. & Carestia; *Cephalozia bicuspidata* var. *conferta* (Nees) Jaap; *Cephalozia bicuspidata* var. *setulosa* Spruce; *Jugermannia bicuspidata* L; *Jungermannia bicuspidata* var. *conferta* Nees; *Trigonanthus bicuspidatus* (L.) Mitt.; - uncertain location (Tilist), July 1864, leg. H. de Klinggraff

Subord. *Geocalycinae*  
Fam. *Geocalycaceae*

Gen. *Chiloscyphus* Corda, 1829, nom. cons.

***Chiloscyphus polyanthus* (L.) Corda** – (n. 5191) – ref.: Naturalientausch 12 [Opiz, Beitr. Naturgesch.]: 651. Sep 1829 (*'Cheilocyphos'*) (orth. cons.); sin.: *Jungermannia polyanthos* L; - Romania, Hunedoara, Mt. Rusca, Luncani, 25.07.1872, leg. Simkovics L.

***Chiloscyphus polyanthus* (L.) Corda** – (n. 5193) – ref.: Naturalientausch 12 [Opiz, Beitr. Naturgesch.]: 651. Sep 1829 (*'Cheilocyphos'*) (orth. cons.); sin.: *Jungermannia polyanthos* L; - Romania, Mehedinți, Orșova, 07.08.1872, leg. Simkovics L.

Subord. *Geocalycinae*

Fam. *Geocalyceae*

Gen. *Chiloscyphus* Corda, 1829, nom. cons.

***Chiloscyphus polyanthus* (L.) Corda** – (n. 5191) – ref.: Naturalientausch 12 [Opiz, Beitr. Naturgesch.]: 651. Sep 1829 (*'Cheilocyphos'*) (orth. cons.); sin.: *Jungermannia polyanthos* L; - Romania, Hunedoara, Mt. Rusca, Luncani, 25.07.1872, leg. Simkovics L.

***Chiloscyphus polyanthus* (L.) Corda** – (n. 5193) – ref.: Naturalientausch 12 [Opiz, Beitr. Naturgesch.]: 651. Sep 1829 (*'Cheilocyphos'*) (orth. cons.); sin.: *Jungermannia polyanthos* L; - Romania, Mehedinți, Orșova, 07.08.1872, leg. Simkovics L.

Gen. *Lophocolea* (Dumort.) Dumort., 1835

***Lophocolea minor* Nees** – (n. 5168) – ref.: *Naturgeschichte der Europäischen Lebermoose* 2: 330. 1836.; ITIS – Taxonomic Serial No: 14556; sin.: *Chiloscyphus minor* (Nees) J.J. Engel & R.M. Schust; *Lophocolea minor* N at E; *Lophocolea bidentata* var. *minor*; *Lophocolea crocata*; *Lophocolea fauriana*; *Lophocolea heterophylla* var. *minor*; *Lophocolea hirafusa*; *Lophocolea minor* var. *erosa*; *Lophocolea setistipa*; - Romania, Mehedinți, Orșova, 07.08.1872, leg. Simkovics L.

Fam. *Plagiochilaceae*

Gen. *Plagiochila* (Dumortier) Dumortier, 1835, *nom. cons.*

***Plagiochila asplenoides* (L.) Dum.** – (n. 5009) – ref.: ITIS Taxonomic Serial Number 14608.; sin.: *Plagiochila major* (Nees) S. Arnell.; - Romania, Arad, Lipova (Lipatfold), 29.03.1872, leg. Simkovics L.

***Plagiochila asplenoides* (L.) Dum.** – (n. 5170) – ref.: ITIS Taxonomic Serial Number 14608.; sin.: *Plagiochila major* (Nees) S. Arnell.; - Romania, Hunedoara, Luncani, Tăul Ursului, 25.07.1872, leg. Simkovics L.

Subord. *Jungermanniiinae*

Fam. *Lophoziaceae*

Gen. *Lophozia* (Dumortier) Dumortier, 1835

***Lophozia excisa* (Dicks.) Dum.** – (n. 5177) – ref.: *Jungermannia* sect. *Lophozia* Dumortier, Syll. 53. 1831; *Lophozia* (Dumort.) Dumort., Rec. Observ. 17. 1835; sin.: *Jungermannia alpestris* var. *latior* Nees; *Jungermannia alpestris* var. *major* C.E.O.Jensen; *Jungermannia arenaria* Nees; *Jungermannia cylindracea* Dumort.; *Jungermannia excisa* Dicks.; *Jungermannia intermedia* Lindb.; *Jungermannia limprichtii* Lindb.; *Jungermannia propagulifera* Gottsche; *Jungermannia socia* Nees; *Lophozia alpestris* var. *major* (C.E.O.Jensen) Müll.Frib.; *Lophozia cylindracea* (Dumort.) Dumort.; *Lophozia excisa* var. *arenaria* (Nees) Schiffn.; *Lophozia excisa* var. *cylindracea* (Dumort.) Müll.Frib.; *Lophozia excisa* var. *jurensis* (Meyl. ex Müll. Frib.) Müll.Frib.; *Lophozia excisa* var. *limprichtii* (Lindb. ex C.Massal. & Carestia) Schiffn.; *Lophozia intermedia* Dumort.; *Lophozia jurensis* Meyl. ex Müll.Frib.; *Lophozia kiaeri* Jørg.; *Lophozia limprichtii* (Lindb. ex C.Massal. & Carestia) Steph.; *Lophozia major* (C.E.O.Jensen) Schljakov; *Lophozia propagulifera* (Gottsche) Steph.; *Lophozia socia* (Nees) Mig.; -Romania, Hunedoara, Mt. Retezat, Clopotiva Valley, 31.07.1872, leg. Simkovics L.

***Lophozia barbata* (Schmidel ex Schreb.) Dumort** – (n. 5179) – ref.: *Spicilegium Florae Lipsicae* 107. 1771.; *Verhandlungen des Botanischen Vereins für die Provinz Brandenburg und die Angrenzenden Länder* 49: 37. 1907.; sin.: *Barbilophozia barbata* (Schreb.) Loeske; *Barbilophozia barbata* var. *amphigastriata* Müll.Frib.; *Jungermannia barbata* var. *Scheberi*; *Jungermannia barbata* Schmidel ex Schreb.; - Romania, Hunedoara, Mt. Retezat, Zănoaga. 30.07.1872, leg. Simkovics L.

Fam. *Gymnomitriaceae*Gen. *Marsupella* Dumortier, 1822

***Marsupella sphacelata* (Gieseke) Dum.** – (n. 5002) – ref.: *Nova Acta Physico-medica Academiae Caesareae Leopoldino-Carolinae Naturae Curiosorum Exhibentia Ephemerides sive Observationes Historias et Experimenta* 14 (Suppl.): 76. 1829.; *Recueil d'Observations sur les Jungermanniacées* 24. 1835.; *Commentationes Botanicae* 114. 1822.; sin.: *Sarcoscyphus sphacelatus* (Gieseke ex Lindenb.) Nees, *Sarcoscyphus sullivantii* De Not., *Marsupella sullivantii* (De Not.) A. Evans, *Marsupella erythrorhiza* Schiffn., *Marsupella joergensenii* Schiffn.; - Romania, Hunedoara, Mt. Retezat, Zănoaga, 30.07.1872, leg. Simkovics L.

***Marsupella funkii* (F. Weber & D. Mohr) Dumort.** – (n. 5003) – ref.: *Botanisches Taschenbuch* 422. 1807.; *Recueil d'Observations sur les Jungermanniacées* 24. 1835.; *Commentationes Botanicae* 114. 1822.; sin.: *Sarcoscyphus funkii* Nees.; *Sarcoscyphus funkii* (F. Weber & D. Mohr) Nees, *S. pygmaeus* Limpr., *Marsupella badensis* Schiffn., *Marsupella ramosa* Müll. Frib., *Marsupella hungarica* Boros & Vajda; - unidentified location, no date, leg. Schentz.

Fam. *Jungermanniaceae*Gen. *Jungermannia* L., 1753

***Jungermannia albicans* L.** - (n. 5172) – ref.: *Recueil Observ. Jungerm.*: 15. 1835 (*Jungermannia* sect. *Diplophyllum* Dumort., *Syll. Jungerm. Europ.*: 44. 1831.); Typus: *Jungermannia albicans* L. (*D. albicans* (L.) Dumort.); LINN 1267.11 *Jungermannia albicans* (Herb Linn); sin.: *Diplophyllum albicans* (L.) Dumort.; *Diplophylleia albicans* (L.) Trevis.; *Diplophylleia albicans* var. *elegans* C.E.O. Jensen; *Diplophyllum albicans* var. *recurvum* (C.E.O. Jensen) Müll. Frib.; *Diplophyllum albicans* var. *secundum* (C.E.O. Jensen) Müll. Frib.; *Jungermannia albicans* L.; *Jungermannia albicans* Hook.; - *Jungermannia falcata* Raddi; *Jungermannia fissidentoidea* Huebener; - Romania, Maramureş, no date, leg. Hazslinszky.

***Jungermannia exsecta* Schmidel** – (n. 5175) – ref.: *Systematische Sammlung Cryptogamischer Gewächse* 2: 5. 1797.; sin.: *Diplophyllum exsectum* (Schmidel ex Schrad.) Thér. & Mong.; *Jungermannia donniana* Hook ex Huebener; *Jungermannia trilobata* Steph. Non L.; *Lophozia exsecta* (Schmidel ex Schrad.)



Dumort.; *Scapania exsecta* (Schmidel ex Schrad.) Aust.; *Sphenolobus exsectus* (Schmidel ex Schrad.) Steph.; *Tritomaria exsecta* (Schrad) Loeske; - Romania, Hunedoara, Luncani, Tăul Ursului, 25.07.1872, leg. Simkovics L.

***Jungermannia leiantha* Grolle** – (n. 5015) – ref.: ITIS – Taxonomic Serial no: 14944; - sin.: *Haplozia lanceolata* auct.; *Liochlaena lanceolata* Nees; *Jungermannia lanceolata* auct.; *Jungermannia lanceolata* L.; *Solenostoma lanceolatum* auct.; - Romania, Arad, Săvârşin, 22.07.1872, leg. Simkovics L.

***Jugermannia quinquedentata* Huds.** – (n. 5178) – ref.: *Flora Anglica* 433. 1762.; sin.: *Barbilophozia quinquedentata* Loeske; *Jugermannia quinquedentata* Huds. ; *Jungermannia barbata* var. *quinquedentata* ; *Jungermannia lyonii*; *Lophozia lyonii*; *Lophozia quinquedentata* (Huds.) Cogniaux; *Tritomaria quinquedentata* (Huds.) Buch. ; - Romania, Hunedoara, Mt. Retezat, 31.07.1872, leg. Simkovics L.

Gen. *Nardia* S.F. Gray, 1821, *nom. cons.*, *orth. cons.*

***Nardia scalaris* Gray** - (n. 5190) – ref.: *A Natural Arrangement of British Plants* 1: 694. 1821.; sin.: *Alicularia scalaris* (Schrad.) Corda in Sturm; *Alicularia rotaeana* De Not.; *Alicularia scalaris* (Gray) Corda; *Jungermannia scalaris* Hook.; *Mesophylla rotaeana* (De Not.) Dumort.; *Mesophylla scalaris* (Gray) Dumort.; *Nardia macrostipa* Kaal. ex Jørg.; *Nardia scalaris* var. *distans* Carrington; *Nardia scalaris* var. *tenera* Jørg.; - Slovakia, the subalpine zone, Mt. Tatra, no date, leg. Behnick.

Gen. *Gymnocolea* (Dumort.) Dumort.

***Gymnocolea inflata* (Huds) Dumort.** – (n. 5180) – ref.: *Rec. d'Obs.* 17. 1835; sin.: *Cephalozia heterostipa* Carrington & Spruce; *Gymnocolea inflata* var. *compacta* (Nees) Jørg.; *Gymnocolea inflata* var. *heterostipa* (Carrington & Spruce) Müll.Frib.; *Gymnocolea inflata* var. *laxa* (Nees) Jørg.; *Gymnocolea inflata* var. *nigricans* (Nees) Jørg.; *Gymnocolea inflata* var. *teres* (Lindb.) Jørg.; *Gymnocolea soerensenii* Kaal.; *Jungermannia inflata* Huds (Fl. Angl. ed. 2. 2: 511. 1778.); *Jungermannia inflata* var. *compacta* Nees ; *Jungermannia inflata* var. *heterostipa* (Carrington & Spruce) Lindb.; *Jungermannia inflata* var. *laxa* Nees; *Jungermannia inflata* var. *nigricans* Nees; *Jungermannia inflata* var. *teres* Lindb.; *Lophozia inflata* (Huds.) M. Howe; - Romania, Caraş-Severin, Voislova, 26.07.1872, leg. Simkovics L.

## Fam. Scapaniaceae

Gen. *Scapania* (Dumortier) Dumortier, 1835, nom. cons.

***Scapania aequiloba* (Schwaegr.) Dumort.** - (n. 4999) – ref.: *Recueil d'Observations sur les Jungermanniacées* 14. 1835.; *Historiae Muscorum Hepaticarum Prodrumus* 24. 1814.; sin.: *Jungermannia aequiloba* Schwägr.; *Jungermannia rupestris* Schleich.; *Jungermannia tyrolensis* Nees; *Martinellia aequiloba* (Schwägr.) Lindb.; *Martinellia rupestris* (Dumort.) Trevis.; *Martinellia tyrolensis* (Nees) Trevis.; *Radula rupestris* Dumort.; *Scapania minuta* Warnst.; *Scapania rupestris* (Dumort.) Dumort.; *Scapania tyrolensis* (Nees) Gottsche et al.; - Poland, Western Pomerania, Kolobrzeg (Kolberg), no date, leg. O. Kun.

***Scapania nemorea* (L.) Grolle** - (n. 5001) – ref.: *Revue Bryologique et Lichénologique* 32: 160. 1963. (basonym: *Jungermannia nemorea* L.); *Systema Naturae, Editio Decima* 2: 1337. 1759.; *Recueil d'Observations sur les Jungermanniacées* 14. 1835.; sin.: *Scapania nemorea* (Grolle); *Jungermannia nemorea* L.; *Jungermannia nemorosa* L.; *Martinellia joergensenii* (Schiffn. ex Müll.Frib.) H.Möller; *Martinellia nemorosa* Lindb.; *Scapania aconiensis* De Not.; *Scapania amurensis* Warnst.; *Scapania austinii* Warnst.; *Scapania jackii* Warnst.; *Scapania joergensenii* Schiffn. ex Müll.Frib.; *Scapania nemorosa* (L.) Dumort.; *Scapania nemorosa* Dumort.; *Scapania nemorosa* var. *alata* Kaal. ex Müll.Frib.; *Scapania nemorosa* var. *joergensenii* (Schiffn. ex Müll.Frib.) Müll.Frib.; *Scapania nemorosa* var. *uliginosa* (C.E.O.Jensen ex Macvicar) Ingham; *Scapania recurvifolia* Warnst.; - Romania, Maramureş (Marmaros), no date, leg. Haslinszky

***Scapania undulata* (L.) Dumort.** - (n. 5004) – ref.: ***Scapania*** (Dumort.) Dumort., *Recueil Observ. Jungerm.*: 14. 1835 (*Radula* sect. *Scapania* Dumort., *Syll. Jungerm. Europ.*: 38. 1831).; Typus: *Radula undulata* (L.) Dumort. (*Jungermannia undulata* L., *S. undulata* (L.) Dumort.) (typ. cons.); sin.: *Jungermannia nemorosa* var. *purpurascens* Hook.; *Jungermannia undulata* L.; *Jungermannia undulata* var. *aequata* Nees; *Jungermannia undulata* var. *purpurascens* Huebener; *Jungermannia undulata* var. *rivularis* Huebener; *Martinellia dentata* (Dumort.) Arnell; *Martinellia purpurascens* (Hook.) Arnell ex C.E.O.Jensen; *Martinellia undulata* (L.) Lindb.; *Radula dentata* Dumort.; *Scapania atrata* Warnst.; *Scapania douinii* Schiffn.; *Scapania heterophylla* M.Howe; *Scapania intermedia* (Husn.) Pearson; *Scapania nemorosa* var. *intermedia* Husn.; *Scapania nemorosa* var. *purpurascens* (Hook.) Gottsche et al.; *Scapania oseensis* Warnst.; *Scapania paludosa* var. *aquatica*

Schiffn.; *Scapania paludosa* var. *natans* Schiffn.; *Scapania purpurascens* (Hook.) Taylor ex Pearson; *Scapania speciosa* (Nees) Lett; *Scapania splendens* Steph.; *Scapania squarrosula* Lindenb.; *Scapania suecica* Warnst.; *Scapania undulata* var. *aequata* (Nees) Gottsche et al.; *Scapania undulata* var. *lepida* Warnst.; *Scapania undulata* var. *purpurascens* (Huebener) Cogn.; *Scapania undulata* var. *rivularis* (Huebener) Rabenh.; *Scapania undulata* var. *subglacialis* Schiffn.; - undesciphable location, no date, leg. Haslinszky.

Subord. *Radulinae*  
Fam. *Radulaceae*

Gen. *Radula* Dumort., 1822

***Radula complanata* (L.) Dumort.** – (n. 5011) – ref.: *Sylloge Jungermannidearum Europae Indigenarum* 38. 1831. (basonym: *Jungermannia complanata* L.); *Species Plantarum* 1133. 1753.; *Commentationes Botanicae* 112. 1822.; sin.: *Jungermannia complanata* L.; *Radula alpestris* Lindenb. ex Berggr.; *Radula complanata* var. *notarisii* (Steph.) Schiffn.; *Radula hyalina* Steph.; *Radula krausei* Steph.; *Radula notarisii* Steph.; - Hungary, Pest, Budapest (Buda - Janos hegy), March 1872, leg. Simkovics L.

Subord. *Porellinae*  
Fam. *Lejeunaceae*

Gen. *Lejeunea*

***Lejeunea patens* Lindb.** – (n. 5005) – ref.: *Fasc. Ctwpt. Brit.* 4: 19. ,1801. (- *Lejeunea patens* Lindb.); sin.: *Eulejeunea serpyllifolia* (Dicks.) Schiffn.; *Jungermannia serpyllifolia* Dicks.; *Lejeunea serpyllifolia* Lib.; - Germany, Nassau Region, (the historical Nassovia), in forest, no date, no signature.

Fam. *Porellaceae*

Gen. *Porella* L.1753

***Porella arboris-vitae* (Dicks.) Grolle** – (n. 5183) – ref.; *Transactions of the British Bryological Society* 5: 770. 1969.; TSN: 15187 sin.: *Jungermannia arboris-vitae* Dicks.; *Jungermannia laevigata* Schrad.; *Madotheca laevigata* (Schrad.) Dumort.;

*Madotheca laevigata* var. *attenuata* (Nees) Gottsche et al.; *Madotheca laevigata* var. *killarniensis* (Pearson) Macvicar; *Madotheca laevigata* var. *obscura* (Nees) Gottsche et al.; *Madotheca laevigata* var. *subintegra* (Kaal.) Schiffn.; *Madotheca laevigata* var. *thuja* (Nees) Gottsche et al.; *Porella laevigata* (Schrad.) Pfeiff.; *Porella laevigata* var. *attenuata* (Nees) Jørg.; *Porella laevigata* var. *killarniensis* Pearson; *Porella laevigata* var. *obscura* (Nees) Arnell; *Porella laevigata* var. *subintegra* Kaal.; *Porella laevigata* var. *thuja* (Nees) Arnell; - Romania, Hunedoara, Rusca, Luncani Valley, 25.07.1872, leg. Simkovics L.

***Porella platyphylla* (L.) Pfeiff.** – (n. 5184) – ref.: *Flora von Niederhessen und Münden* 2: 234. 1855.; sin.: *Jungermannia platyphylla* L.; *Jungermannia platyphylla* var. *major* Hook.; *Madotheca platyphylla* (L.) Dumort.; *Madotheca platyphylla* var. *major* (Hook.) Dumort.; *Madotheca platyphylla* var. *subsquarrosa* Bernet; *Madotheca porella* Nees; *Porella platyphylla* var. *subsquarrosa* Arnell; - Romania, Caraş-Severin, Mehadia, Domogled, 06.08.1872, leg. Simkovics L.

Fam. *Jubulaceae*

Gen. *Frullania* Raddi, 1818

***Frullania dilatata* (L.) Dumort.** – (n. 5192) – ref.: *Recueil d'Observations sur les Jungermanniacées* 13. 1835. (basionym: *Jungermannia dilatata* L.); *Species Plantarum* 1133. 1753.; *Jungermanniografia Etrusca* 9. 1818.; sin.: *Frullania dilatata* N. et E.; *Jungermannia dilatata* L. - Romania, Arad, Săvârşin (Calvaria hills), 22.07.1872, leg. Simkovics L.

***Frullania tamarisci* (L.) Dumort.** – (n. 5189) – ref.: *Recueil d'Observations sur les Jungermanniacées* 13. 1835. (basionym: *Jungermannia tamarisci* L.); *Species Plantarum* 1134. 1753.; *Jungermanniografia Etrusca* 9. 1818. ; sin.: *Frullania major* Raddi; *Frullania maritima* Steph.; *Frullania nervosa* Montin; *Frullania tamarisci* N. et E.; *Jungermannia tamarisci* L.; *Jungermannia tamariscifolia* L.; - Romania, Hunedoara, Luncani, Tăul Ursului Valley, 25.07.1872, leg. Simkovics L.

**Subclas. Metzgeriidae**

Ord. *Metzeriales*

Subord. *Codoniineae*

Fam. *Codoniaceae* Klinggr., 1858

Gen *Fossombronia* Raddi, 1818

***Fossombronia pusilla* (L.) Nees.** – (n. 5195) – ref.: *Recueil d'Observations sur les Jungermanniacées* 11. 1835. (basionym: *Jungermannia pusilla* L.); *Species Plantarum* 1136. 1753.; *Jungermanniografia Etrusca* 29. 1818. ; sin.: *Fossombronia loitlesbergeri*; *F. Maritima*; *F. Perpusilla*, *Jungermannia pusilla*, *Neteroclada perpusilla*; - Hungary, Mt. Matra, Agasvar, no date, leg. Simkovics L.

***Fassombronia pusilla* (L.) Nees.** – (n. 5198 / a) – ref.: *Recueil d'Observations sur les Jungermanniacées* 11. 1835. (basionym: *Jungermannia pusilla* L.); *Species Plantarum* 1136. 1753.; *Jungermanniografia Etrusca* 29. 1818. ; sin.: *Fossombronia loitlesbergeri*; *F. Maritima*; *F. Perpusilla*, *Jungermannia pusilla*, *Neteroclada perpusilla*; - Romania, Caraș-Severin (Banat), Voislova, 26.07.1872, leg. Simkovics L.

***Fossombronia wondraczekii* (Corda) Lindb.** – (n. 5198 / b) – ref.: *Naturgeschichte der Europäischen Lebermoose*, vol.3: 320; sin.: *Codonia wondraczekii* (Corda) Dumort.; *Fossombronia cristata* Lindb.; *Fossombronia cristata* var. *wondraczekii* Lindb.; *Fossombronia mittenii* Tind.; *Fassombronia pusilla* var. *capitata* (Nees).; *Fossombronia wondraczekii* var. *cristata* (Lindb.) S.W.Arnell; *Fossombronia wondraczekii* var. *rubella* Bryhn; *Jungermannia pusilla* var. *capitata* Nees; *Jungermannia wondraczekii* Corda; - Romania, Caraș-Severin (Banat), Voislova, 26.07.1872, leg. Simkovics L.

Subord. *Metzgeriineae*Fam. *Aneuraceae*Gen. *Riccardia* S.F. Gray, 1821, *nom. cons.*, *orth. Cons.*

***Riccardia palmata* (Hedw.) Carruth.** – (n. 5188) – ref.: *Journal of Botany, British and Foreign* 13: 302. 1865. (basionym: *Jungermannia palmata* Hedw); *Theoria Generationis et Fructificationis Plantarum Cryptogamicarum* 87. 1784.; *A Natural Arrangement of British Plants* 1: 679. 1821. ; sin.: *Aneura palmata* (Hedw.) Dumort.; *Blasia palmata* (Hedw.) Fr.; *Aneura palmata* N. et E. ; *Jungermannia multifida* var. *palmata* (Hedw.) Gray; *Jungermannia palmata* Hedw.; *Gymnomitrium palmatum* (Hedw.) Huebener; *Riccardia palmata* (Hedw.) Carruth.; *Roemeria palmata* (Hedw.) Raddi; *Sarcomitrium palmatum* (Hedw.) Corda; - Romania, Hunedoara, Luncani, Tăul Ursului Valley, 24.07.1872, leg. Simkovics L.

***Riccardia multifida* (L.) Gray** – (n. 5200) – ref.: *A Natural Arrangement of British Plants* 1: 684. 1821. (basionym: *Jungermannia multifida* L.); *Species Plantarum* 1136. 1753.; *A Natural Arrangement of British Plants* 1: 679. 1821.; sin.: *Aneura multifida* (L.) Dumort.; *Aneura multifida* var. *ambrosioides* Nees; *Jungermannia multifida* L.; *Riccardia multifida* var. *ambrosioides* (Nees) Carrington & Pearson; - Romania, Arad, Săvârșin (Calvaria hills), 22.07.1872, leg. Simkovics L.

Fam. *Blasiaceae*  
Gen. *Blasia* L., 1753

***Blasia pusilla* Linn.** – (n. 5196 / a, b ) – ref.: *Spec. Plant.* 1138: 1753; sin.: *Blasia pusilla* (Micheli) L.; *Blasia funkii* Corda; *B. germanica* Corda; *B. hookeri* Corda; *B. immersa* Dumort; *B. semilibera* Dumort; *Jungermannia blasia* Hook.; *J. Biloba* Sw.; - Romania, Mehedinți, Orșova, 07.08.1872, leg. Simkovics L.

Fam. *Metzgeriaceae*  
Gen. *Metzgeria* Raddi, 1818

***Metzgeria furcata* (L.) Corda** – (n. 5181) – ref.: *Naturalientausch* 12: 654. 1829. (basionym: *Jungermannia furcata* L.); *Species Plantarum* 1136. 1753.; *Jungermanniografia Etrusca* 34. 1818. ; sin.: *Jungermannia furcata* L.; *Metzgeria furcata* var. *flexipilis* Kaal.; *Metzgeria decipiens* Evans.; *Metzgeria planiscula*; *Metzgeria vitii* Kuwah; - Romania, Hunedoara, Lunca (towards Tomești), 23.07.1872, leg. Simkovics L.

***Metzgeria furcata* (L.) Corda** – (n. 5202) – ref.: *Naturalientausch* 12: 654. 1829. (basionym: *Jungermannia furcata* L.); *Species Plantarum* 1136. 1753.; *Jungermanniografia Etrusca* 34. 1818.; sin.: *Jungermannia furcata* L.; *Metzgeria furcata* var. *flexipilis* Kaal.; *Metzgeria decipiens* Evans.; *Metzgeria planiscula*; *Metzgeria vitii* Kuwah; - Romania, Arad, Radna, August 1871, leg. Simkovics L.

***Metzgeria pubescens* (Schrank) Raddi** – (n. 5166) – ref.: *Revue Bryologique et Lichénologique* 34: 214. 1966. (basionym: *Jungermannia pubescens* Schrank); *Primitae Florae Salisburgensis* 231. 1792.; sin.: *Apometzgeria pubescens* (Schrank) Kuwah. ; *Echinogyna pubescens* (Schrank) Dumort; *Echinomitrium pubescens* (Schrank) Huebener; *Fascicola pubescens* (Schrank) Dumort; *Herverus*

*pubescens* (Schrank) Gray; *Jungermannia pubescens* Schrank); *Jungermannia tomentosa* Hoffm. (non Sw.); *Metzgeria duricosta* Steph; *Metzgeria longifrondis* Gao.; - Romania, Bihor, Tărcăița (Tarkany), Tărcaia, May, leg. Simkovics L.

Fam. *Pelliaceae*

Gen. *Pellia* Raddi, 1818, nom. cons.

***Pellia endiviifolia* (Dicks.) Dumort.**- (n. 5171) – ref.: *Recueil d'Observations sur les Jungermanniacées* 27. 1835. (basionym: *Jungermannia endifolia* Dicks.); *Fasciculus Plantarum Cryptogamicarum Britanniae* 4: 19. 1801.; *Jungermanniografia Etrusca* 38. 1818.; sin.: *Jungermannia calycina* Nees; *Jungermannia endiviifolia* Dicks.; *Jungermannia epiphylla* var. *furcigera* Hook.; *Marsilia endiviifolia* (Dicks.) Lindb.; *Pellia calycina* (Taylor) Nees; *Pellia endiviifolia* var. *furcigera* (Hook.) Heeg; *Pellia fabbroniana* auct.; *Pellia furcigera*; - Hungary, Pest, Budapest, no date, leg. Simkovics L.

***Pellia epiphylla* (L.) Corda.** – (n. 5006) – ref.: *Pellia* Raddi, *Jungermanniogr. Etrusca*: 38. 1818.; Typus: *Pellia fabroniana* Raddi, nom. illeg. (*Jungermannia epiphylla* L., *Pellia epiphylla* (L.) Corda.); sin.: *Jungermannia epiphylla* L.; *Marsilia epiphylla* (L.) Lindb., *Pellia epiphylla* var. *undulata* (Nees) Gottsche et al.; *Pellia fabbroniana* Raddi; - Hungary, Baranya, Nadajd, no date, leg. Simkovics L.

***Pellia epiphylla* (L.) Corda.** – (n. 5203) – ref.: *Pellia* Raddi, *Jungermanniogr. Etrusca*: 38. 1818.; Typus: *Pellia fabroniana* Raddi, nom. illeg. (*Jungermannia epiphylla* L., *Pellia epiphylla* (L.) Corda.); sin.: *Blasia epiphylla* (L) Fr.; *Gymnomitron epiphyllon* (L) Huebener; *Jungermannia epiphylla* L.; *Marsilia epiphylla* (L.) Lindb., *Pellia borealis* Lorbeer; *Pellia epiphylla* var. *undulata* (Nees) Gottsche et al.; *Pellia fabbroniana* Raddi; *Scopulina epiphylla* (L.) Dumort.; - Hungary, Baranya, Orfii, no date, no signature (probably Simkovics L.).

**Phylum Bryophyta A. Braun, in Ascherson, 1860**

**Clas. Sphagnopsida**

Subclas. *Sphagnidae*

Ord. *Sphagnales*

Fam. *Sphagnaceae* Dum.



Gen. *Sphagnum* L., 1753

***Sphagnum capillifolium* (Ehrh.) Hedw.** – (n. 5858) – ref.: Sp. Pl. 1106, 1753; Fundam. 2: 86. 1782; ITIS Taxonomic Serial Number 15729.; sin.: *Sphagnum acutifolium* Ehrh. ex Schrad.; *Sphagnum acutifolium* var. *capillifolium* (Ehrh.) Funck; *Sphagnum acutifolium* var. *densum* Warnst.; *Sphagnum acutifolium* var. *flavescens* Warnst.; *Sphagnum acutifolium* var. *leptocladum* Limpr.; *Sphagnum acutifolium* var. *pallescens* Warnst.; *Sphagnum acutifolium* var. *robustum* Blandow ex Nees & Hornsch.; *Sphagnum acutifolium* var. *roseum* Warnst.; *Sphagnum acutifolium* var. *schimperi* Warnst.; *Sphagnum acutifolium* var. *schliephackeanum* Warnst.; *Sphagnum acutifolium* var. *viride* Warnst.; *Sphagnum capillaceum* (Weiss) Schrank; *Sphagnum intermedium* Hoffm.; *Sphagnum margaritae* H.A. Crum; *Sphagnum nemoreum* Scop.; *Sphagnum palustre* var. *capillaceum* Weiss; *Sphagnum palustre* var. *capillifolium* Ehrh.; *Sphagnum schimperi* (Warnst.) Röhl; *Sphagnum schliephackeanum* (Warnst.) Röhl; - unidentified location, no date, leg. Bobeny.

***Sphagnum capillifolium* (Ehrh.) Hedw.** – (n. 5861) – ref.: Sp. Pl. 1106, 1753; Fundam. 2: 86. 1782; ITIS Taxonomic Serial Number 15729.; sin.: *Sphagnum acutifolium* Ehrh. ex Schrad.; *Sphagnum acutifolium* var. *capillifolium* (Ehrh.) Funck; *Sphagnum acutifolium* var. *densum* Warnst.; *Sphagnum acutifolium* var. *flavescens* Warnst.; *Sphagnum acutifolium* var. *leptocladum* Limpr.; *Sphagnum acutifolium* var. *pallescens* Warnst.; *Sphagnum acutifolium* var. *robustum* Blandow ex Nees & Hornsch.; *Sphagnum acutifolium* var. *roseum* Warnst.; *Sphagnum acutifolium* var. *schimperi* Warnst.; *Sphagnum acutifolium* var. *schliephackeanum* Warnst.; *Sphagnum acutifolium* var. *viride* Warnst.; *Sphagnum capillaceum* (Weiss) Schrank; *Sphagnum intermedium* Hoffm.; *Sphagnum margaritae* H.A. Crum; *Sphagnum nemoreum* Scop.; *Sphagnum palustre* var. *capillaceum* Weiss; *Sphagnum palustre* var. *capillifolium* Ehrh.; *Sphagnum schimperi* (Warnst.) Röhl; *Sphagnum schliephackeanum* (Warnst.) Röhl; - Hungary, Heves, Eger, in the lake, 10.05. 1868, leg. Borbas Vince.

***Sphagnum compactum* DC. ex Lam. & DC.** – (n. 5859) – ref.: Sp. Pl. 2: 1106. 1753; Gen. Pl. ed. 5, 487. 1754.; Hedwigia 30: 144, t.14, fig.8, t.21. fig.1 (1891); sin.: *Sphagnum compactum* var. *imbricatum* Warnst.; *Sphagnum compactum* var. *rigidum* Nees & Hornsch.; *Sphagnum compactum* var. *squarrosum* (Russow) Warnst.; *Sphagnum compactum* var. *subsquarrosum* Warnst.; *Sphagnum rigidum* Schimp; *Sphagnum rigidum* (Nees & Hornsch.) Schimp.; *Sphagnum rigidum* var.

*squarrosulum* Russow; - Romania, Hunedoara, Mt. Retezat, Zănoaga, 30.07.1872, leg. Simkovics L.

***Sphagnum fimbriatum* Wilson** – (n. 5862 /a) – ref.: Bot. Antract. Voy. 1: 398. 1847.; sin.: *Sphagnum fimbriatum* var. *tenue* Grav. ex Röhl; *Sphagnum fimbriatum* var. *validus* Cardot; - Slovakia, Mt. Tatra, no date mentioned, leg. Simkovics L.

***Sphagnum girgensohnii* Russow** - (n. 5862 /b) – ref.: Beitr. Torfm. 46. 1865; sin.: *Sphagnum acutifolium* var. *robustum* Dixon; *Sphagnum girgensohnii* var. *cristatum* Russow; *Sphagnum girgensohnii* var. *gracilescens* Grav. ex Warnst.; *Sphagnum girgensohnii* var. *leptostachys* Russow; *Sphagnum girgensohnii* var. *microcephalum* Warnst.; *Sphagnum girgensohnii* var. *molle* Russow ex Warnst.; *Sphagnum girgensohnii* var. *robustum* Warnst.; *Sphagnum girgensohnii* var. *squarrosulum* Russow; *Sphagnum girgensohnii* var. *stachyodes* Russow; *Sphagnum girgensohnii* var. *xerophilum* Russow ex C.E.O.Jensen; *Sphagnum mehneri* Warnstorf; - *Sphagnum strictum* Lindb.; - Slovakia, Mt. Tatra, no date mentioned, leg. Simkovics L.

***Sphagnum palustre* L.** – (n. 5857) – ref.: Sp. Pl. 1106, 1753; ITIS Taxonomic Serial Number 15692.; sin.: *Sphagnum cymbifolium* (Ehrh.) Hedw.; *Sphagnum cymbifolium* var. *flavescens* Warnst.; *Sphagnum cymbifolium* var. *fuscescens* (Warnst.) Warnst.; *Sphagnum cymbifolium* var. *glaucescens* C.E.O.Jensen; *Sphagnum cymbifolium* var. *laeve* Warnst.; *Sphagnum cymbifolium* var. *rubescens* Warnst.; *Sphagnum latifolium* Hedw.; *Sphagnum subbicolor* Hampe; - Romania, Hunedoara, Mt. Retezat, Zănoaga, 30.07.1872, leg. Simkovics L.

***Sphagnum subsecundum* Nees** – (n. 5860) – ref.: Deuts. Fl. Crypt. 2(17): species 3. 1819; sin.: *Sphagnum cavifolium* Warnst.; *Sphagnum crispum* R.E.Andrus; *Sphagnum subsecundum* var. *fuscescens* (C.E.O.Jensen) Cardot; *Sphagnum subsecundum* var. *intermedium* (Warnst.) Warnst.; *Sphagnum subsecundum* var. *mesophyllum* Röhl; *Sphagnum subsecundum* var. *tenellum* Schlieph. ex Röhl; *Sphagnum subsecundum* var. *tenellum* Warnst.; - Romania, Banat, Mt. Rusca, 24.07.1872, leg. Simkovics L.

**Clas. *Andreaeopsida***

Subclas. *Andreaeidae*

Ord. *Andreaeales*

Fam. *Andreaeaceae*

Gen. *Andreaea* J. Hedwig, 1801

***Andreaea alpestris* (Thed.) Schimp.** – (n. 5831) – ref.: ITIS Taxonomic Serial Number 547526.; sin.: *Andreaea alpestris* W.P.Sch. ; *Andreaea alpestris* (Thed.) B.S.G.; *Andreaea fauriei* Besch.; *Andreaea filiformis* Müll.Hal.; *Andreaea petrophila* ssp. *alpestris* (Thed.) Lindb.; *Andreaea petrophila* var. *alpestris* Thed.; *Andreaea petrophylla* v. *alpestris* Hedw.; *Andreaea petrophila* Fumr.; *Andreaea petrophila* var. *rupestris* (Hedw.) Wallr.; *Andreaea rupestris* Hedw.; *Andreaea rupestris* ssp. *alpestris* (Thed.) C.E.O.Jensen; *Andreaea rupestris* var. *alpestris* (Thed.) Sharp; - Romania, Hunedoara, Mt. Retezat, Zănoaga, 31.07.1872., leg. Simkovics L.

***Andreaea rothii* F.Web. & D.Mohr** – (n. 5092) – ref.: *Botanisches Taschenbuch* 386. pl. 11: f. 7--8. 1807.; *Species Muscorum Frondosorum* 47. 1801.; sin.: *Andreaea rupestris* G.Roth; *Atrichium rupestris* (Hedw.) Schwaegr.; - Austria (upper) – no date and signature.

***Andreaea rupestris* Hedw. var. *rupestris*** – (n. 5094) – ref.: *Spec. Musc.* 47. 1801 ; sin.: *Andreaea parvifolia* Mull., Hal.; *Andreaea petrophila* Ehrh, ex Funrr.; - Romania, Mt. Făgăraș, Negoiu, on the rocks, August 1871, leg. Barth.

### Clas. *Polytrichopsida*

Ord. *Polytrichiales*

Fam. *Polytrichiaceae* Schwaegr. in Willd.:

Gen. *Atrichum* P. Beauv., nom cons.,

***Atrichum tenellum* (Rohl.) Bruch. & Schimp.** – (n. 5090) – ref.: *Bryologia Europaea* 4: 237 (fasc. 21--22 Monogr. 9). 1844.; basionym: *Catharinea tenella* Rohl., *Annalen der Wetterauischen Gesellschaft für die Gesammte Naturkunde* 3(2): 234. 1814.; ITIS Taxonomic Serial Number 15786.; sin.: *Atrichum crispum* (James) Sull. var. *molle*; *Mnium orthorrhynchum* Brid.; - France, Lorena, Noselle, Bitche, damp sands, 18.08.1853, leg. F. Schultz.

***Atrichum undulatum* P. Beauv.** – (n. 5830) - ref.: *Prodrome des Cinquième et Sixième Familles de l'Aéthéogamie* 42. 1805. Basionym: *Polytrichum undulatum* Hedw., *Species Muscorum Frondosorum* 98. 1801.; ITIS Taxonomic Serial Number 15780.; sin.: *Atrichum undulatum* (Hedw.) P. Beauv.; *Catharinea callibryon* Hampe; *C. ehrhartii* Voit; *C. flavilimbata*. Warnst; - Romania, Arad, Săvârșin (Calvaria

hills), 22.07.1872, leg. Simkovics L.

***Atrichum undulatum* P.Beauv.** – (n. 5833) - ref.: *Prodrome des Cinquième et Sixième Familles de l'Aéthéogamie* 42. 1805. Basionym: *Polytrichum undulatum* Hedw., *Species Muscorum Frondosorum* 98. 1801.; ITIS Taxonomic Serial Number 15780.; sin.: *Atrichum undulatum* (Hedw.) P.Beauv.; *Catharinea callibryon* Hampe; *C. ehrhartii* Voit; *C flavilimbata*. Warnst ; - Switzerland, St. Gallen, (Marboder Wald), no date, no signature.

Gen. *Oligotrichum* A. P. de Candolle

***Oligotrichum hercynicum* (Hedw.) Lam. & DC.**– (n. 5049) – ref.: *Fl. Franç.* ed. 3. 2: 492. 1805. ; sin: *Bryum incurvum* Brid.; *Catharinea hercynica* (Hedw.) F.Web. & D.Mohr; *Oligotrichum hercynicum* L. ; *Oligotrichum hercynicum* (Hedwig) Lamarck & de Candolle ; *Oligotrichum hercynicum* var. *ambiguum* (Bryhn) G.Roth ; *Oligotrichum hercynicum* var. *brevifolium* I.Hagen; *Oligotrichum hercynicum* var. *molle* (E.Nyman) C.E.O.Jensen; *Polytrichum hercynicum* Hedwig, (Sp. Musc. Frond., 94. 1801 ) ; *Oligotrichum incurvum* (Bridel) Lindberg ; *Oligotrichum incurvum* var. *ambiguum* Bryhn; *Oligotrichum incurvum* var. *brevifolium* (I.Hagen) I.Hagen; *Oligotrichum incurvum* var. *molle* E.Nyman ; - Switzerland, Rauparg bei Obergot, September 1872, leg. Dr. Pall.

Gen. *Pogonatum* P. Beauv.

***Pogonatum aloides* (Hedw.) P. Beauv.** –(n. 5102)–ref.: *Prodrome des Cinquième et Sixième Familles de l'Aéthéogamie* 84. 1805. ; basionym: *Polytrichum aloides* Hedw.; *Species Muscorum Frondosorum* 96. 1801.; *Magasin Encyclopédique* 5: 329. 1804.; sin.: *Pogonatum aloides* Pal. Beauv; *Pogonatum aloides* var. *dicksonii* (Turner) Brid.; *Pogonatum aloides* var. *minimum* (Crome) Molendo; *Pogonatum aloides* var. *obtusifolium* J.J.Amann; *Pogonatum mnioides* I.Hagen; *Pogonatum nanum* var. *longisetum* Hampe ex. Bruch & Schimp.; *Polytrichum aloides* Hedw.; *Polytrichum dicksonii* Turner; *Polytrichum nanum* Weiss ex Lindb.; *Polytrichum nanum* var. *dicksonii* (Turner) Béhéré; *Polytrichum nanum* var. *longisetum* (Hampe ex Bruch & Schimp.) Müll.Hal.; *Polytrichum nanum* var. *minimum* (Crome) Lindb.; *Polytrichum aloide* Lindb; - Romania, Alba, Valea Lungă (Langenthal), April 1872, leg. Barth.

***Pogonatum nanum* (Schreb. ex Hedw.) P.Beauv.** – (n. 5108) – ref.: *Prodrome des Cinquième et Sixième Familles de l'Aethéogamie* 84. 1805. , basionym: *Polytrichum nanum* Schreb. ex Hedw.; *Species Muscorum Frondosorum* 95. 1801.; *Magasin Encyclopédique* 5: 329. 1804. ; sin.: *Mnium polytrichoides* Balb.; *Pogonatum polytrichoides* (Balbis) P.Beauv.; *Polytrichum nanum* Schreb. ex Hedw.; *Pogonatum nanum* (Bridel) Bridel, 1827; *Polytrichum subrotundum* Menzies ex Brid.; - Romania, Caraş-Severin, Voislova, 26.07.1872, leg. Simkovics L.

***Pogonatum urnigerum* (L. ex Hedw.) P.Beauv.** – (n. 5097) – ref.: *Prodrome des Cinquième et Sixième Familles de l'Aethéogamie* 84. 1805.; basionym: *Polytrichum unigerum* Hedw.; *Species Muscorum Frondosorum* 100. pl. 22: f. 5--7. 1801.; sin.: *Pogonatum himalayanum* Mitt.; *Pogonatum urnigerum* Brid.; *Pogonatum urnigerum* var. *humile* (Wahlenb.) Brid.; *Pogonatum urnigerum* var. *subintegrifolium* (Arnell & C.E.O.Jensen) H.Möller; *Polytrichum urnigerum* L. ex Hedw.; *Polytrichum urnigerum* var. *humile* Wahlenb.; *Polytrichum urnigerum* var. *subintegrifolium* Arnell & C.E.O.Jensen; - Romania, Hunedoara, Luncani, Tăul Ursului, 21.07.1872, leg. Simkovics L.

Gen. *Polytrichum* Hedw.

***Polytrichum commune* Hedw.** – (n. 5098) – ref.: *Species Muscorum Frondosorum* 88. 1801.; sin. *Polytrichum communae* L.; *Polytrichum commune* ssp. *cubicum* Lindb.; *Polytrichum commune* var. *cubicum* (Lindb.) I.Hagen; *Polytrichum commune* var. *humile* Sw.; *Polytrichum commune* var. *minus* Brid.; *Polytrichum commune* var. *minus* Weiss ex De Not.; *Polytrichum commune* var. *uliginosum* Wallr.; *Polytrichum commune* var. *uliginosum* Wallr.; - no location, date and signature.

***Polytrichum juniperum* Hedw.** – (n. 5101) – ref.: *Species Muscorum Frondosorum* 89. pl. 18: f. 6--10. 1801.; sin.: *Polytrichum apiculatum* Kindb.; *Polytrichum juniperum* var. *waghornei* Kindb.; - no location, date and signature.

***Polytrichum longisetum* Sw. ex Brid.** – (n.5104) – ref.: *Journal für die Botanik* 1800(1): 286. 1801 [Apr.]; *Species Muscorum Frondosorum* 88. 1801.; sin.: *Catharinea dixonii* Braithw.; *Oligotrichum sibiricum* Bard.; *Polytrichum gracile* Menz.; *Polytrichastrum longisetum* (Sw. ex Brid.) G.L.Sm.; *Polytrichastrum longisetum* (Brid.) G. L. Sm.; *Polytrichum anomalum* (Milde) Milde; *Polytrichum aurantiacum* Hoppe ex Brid.; *Polytrichum formosum* var. *aurantiacum* (Hoppe ex Brid.) Hartm.; *Polytrichum gracile* Dicks.; *Polytrichum gracile* Smith.; *Polytrichum*

*gracile* Bryhn ; *Polytrichum gracile* var. *anomalum* (Milde) Hag.; *Polytrichum gracile* var. *aquaticum* Bryhn ; *Polytrichum gracile* var. *longisetum* (Sw. ex Brid.) Wüstnei; *Polytrichum longisetum* var. *anomalum* (Milde) Hag.; *Polytrichum longisetum* var. *aurantiacum* (Hoppe ex Brid.); *Polytrichum gracile* var. *parvirete* I.Hagen ; - Germany, Renania-Palatinat, Winden (Palatinat Baviere), 04.05.1857, leg. F. Schultz. (F. Schultz et. Winter – herbarium normale).

***Polytrichum piliferum* Schreb. ex Hedw.** – (n. 5789) – ref.: *Species Muscorum Frondosorum* 90. 1801.; sin.: *Polytrichum hoppei* Hornsch.; *Polytrichum piliferum* var. *fastigiatum* (Lindb.) Bom. & Broth.; *Polytrichum piliferum* var. *hoppei* (Hornsch.) Haller; *Polytrichum pilosum* Neck. ex Lindb.; *Polytrichum pilosum* var. *fastigiatum* Lindb.; *Polytrichum pilosum* var. *hoppei* (Hornsch.) Lindb.; *Polytrichum pilosum* var. *pusillum* H.Möller; - Kalinigrad Oblast, Exclave of the Russian Federation at the Baltic Sea (between Poland and Lithuania), Königsberg (Kalinigrad), 04.05.1873, leg. Dr. C. Baenitz.

***Polytrichum strictum* Menzies ex Brid.** – (n.5107) – ref.: *Journal für die Botanik* 1800(1): 286. 1801.; *Species Muscorum Frondosorum* 88. 1801; sin.: *Polytrichum affine* Funck; *Polytrichum alpestre* Hoppe; *Polytrichum juniperinum* ssp. *strictum* (Menzies ex Brid.) Nyl. & Saelán; *Polytrichum juniperinum* var. *affine* (Funck) Brid.; *Polytrichum juniperinum* var. *alpestre* (Hoppe) Röhl.; *Polytrichum juniperinum* var. *gracilius* Wahlenb.; *Polytrichum strictum* Menz.; *Polytrichum strictum* var. *alpestre* (Hoppe) Rabenh.; - France, Hoste Vienue, Beaumont, 04.05.1871, leg. E. Lamy. - (F.Schultz et.F. Winter – herbarium normale).

Ord. *Tetraphidales*

Fam. *Buxbaumiaceae* Schimp. in Willd.:

Gen. *Buxbaumia* Hedw.

***Buxbaumia viridis* Moug. & Nestl.** – (n. 5820) – ref.; *Bryologia Universa* 1: 331. 1826. ; *Species Muscorum Frondosorum* 166. 1801.; sin.: *Buxbaumia aphylla* var. *indusiata* (Brid.) Wahlenb.; *Buxbaumia aphylla* var. *viridis* DC.; *Buxbaumia indusiata* Brid. ; - Sibneberg, July 1873, leg.Zirkendrath.

Fam. *Tetraphidaceae* Schimp.:



Gen. *Tetrodontium* Schwaegr.

***Tetrodontium brownianum* (Dicks.) Schwaegr.** – (n. 5058) – ref.: *Species Muscorum Frondosorum, Suppl. Sec. 2: 102, 1824*; basionym: *Bryum brownianum* Dicks. – *Fasc. Plant. Crypt. Brit.* 4: 7, 10 f. 16, 1801; *The Bryologist* 88: 118-119. Malta, N. 1927. ; **sin.:** *Bryum brownianum* Dicks.; *Georgia browniana* (Dicks.) Müll. Hal.; *Georgia brownii* Lindb.; *Tetraphis browniana* (Dicks.) Grev.; *Georgia brownii* Lindb.; - Romania, Hunedoara, Hațeg, July-August 1879, leg. Simkovic L.

Gen. *Tetraphis* Hedw.

***Tetraphis pellucida* Hedwig** – (n. 5056) – ref.: *Species Muscorum Frondosorum* 43. 7 f. 1 a–f. 1801.; ITIS Taxonomic Serial Number 15791.; **sin.:** *Georgia pellucida* (Hedw.) Rabenh.; *Georgia trachypoda* Kindb.; *Tetraphis oblonga* Turner; *Tetraphis trachypoda* (Kindb.) Paris; *Tetraphis oblonga* Turner; - no location, date and signature.

### Clas. *Bryopsida*

Gen. *Camptothecium* Schimp., in Bruch et al., 1853

***Camptothecium lutescens* (Philip in Husnot) Breidler** – ( n. 5027) – ref.: *Bryologia Europaea* 6: 36. 558 (fasc. 52--56 Mon. 6. 1). 1853. Basionym: *Hypnum lutescens* Hedw.; *Species Muscorum Frondosorum* 274. 1801. **sin.:** *Homalothecium lotescens* (Hedw.) H. Rob.; *Homalothecium lotescens*; *Camptothecium lutescens* (Hedw.) Schimp. ; - Germany, Hohlwegen, Lovenberg, April 18., leg. Dresler.

- Obs.: Previous classification: *Bryophyta, Bryopsida, Bryidae, Hypnanae, Hypnales, Brachytheciaceae, Camptothecium.*

### Subclas. *Diphysciidae*

Ord. *Diphysciales*

Fam. *Diphysciaceae* M. Fleisch.

Gen. *Diphyscium* Mohr, 1803

***Diphyscium foliosum* (Hedw.) D. Mohr** - (n. 4988) – ref.: *Index Musei Plantarum Cryptogamarum* [3]. 1803. Basionym: *Buxbaumia foliosa* Hedw.; *Species*



*Muscorum Frondosorum* 166. 1801.; *Observationes Botanicae* 34. 1803.; sin.: *Buxbaumia foliosa* L. ex Hedw.; *Diphyscium foliosum* var. *acutifolium* Bruch & Schimp.; *Diphyscium foliosum* var. *acutifolium* Ther.; *Diphyscium sessile* Lindb.; *Webera sessilis* Lindb.; *Mollia heggartii* Stirt.; - Slovakia, Presov (Eperjes), no date, leg. Haslinski.

**Subclas. Funariidae**

Ord. *Encalyptales*

Fam. *Encalyptaceae* Schimp.:

Gen. *Encalypta* Hedw.

***Encalypta lanceolata* Hedw.** – (n. 5834) – ref.: *Bryol. Germ.* 2(2): 141. Jul-Oct 1831 ; sin.: *Anacalypta lanceolata* Dick. *Anacalypta lanceolata* (Hedw.) Nees & Hornsch.; *A. lanceolata* (Hedw.) Röhl. ex Nees & Hornsch.; - Slovakia, Podhrad, aprilie 1871, leg. Holuby.

***Encalypta streptocarpa* Hedw.**– (n. 5801) – ref.: *Species Muscorum Frondosorum* 62. pl. 10: f. 10--15. 1801. ; sin.: *Leersia contorta* Lindb.; *Streptocarpus syntrichioides* Poech.; - Romania, Hunedoara, Luncani, Valea Ursului, 25.07.1872, leg. Simkovic L.

***Encalypta vulgaris* Hedw.** – (5095) – ref.: *Sp. Musc. Frond.* 60. 1801.; sin.: *Encalypta extinctoria* Sw. ex Lindb.; *Encalypta vulgaris* (Hedw.) Hofm.; *Encalypta vulgaris* var. *mutica* Brid.; - Romania, Transylvania, Valea Lungă (Langenthal), April 1872, leg. Barth.

Ord. *Funariales*

Fam. *Funariaceae* Schwaegr.

Subfam. *Funarioideae*

Gen. *Entosthodon* Schwagr.

***Entostodon fascicularis* Schimp.** – (n. 5803 /b) – ref.: *Synopsis Muscorum Frondosorum omnium hucusque Cognitorum* 1: 120. 1848.; basionym: *Gymnostomum fasciculare* Hedw.; *Entosthodon* Schwagr. - *Species Muscorum Frondosorum, Supplementum Secundum* 1: 44. 1823.; *Bryum* Dicks. Fasc. Crypt. 3.p.3. t. 7; sin.: *Funaria fascicularis* (Hedw.) Lindb.; *Funaria fascicularis* P. Schimp.;

*Gymnostomum fasciculare* Hedw.; - Germany, Zusaetze u. Berich , 20.03.1864, leg. F. Schultz.

***Entosthodon obtusus* (Hedw.) Lindb.** – (n. 5803 /a) – ref.: *Öfversigt af Förhandlingar: Kongl. Svenska Vetenskaps-Akademiens* 21: 221. 1865.; basionym; *Gymnostomum obtusum* Hedw.; *Species Muscorum Frondosorum* 34. 2 f. 1--3. 1801.; *Entosthodon* Schwagr. - *Species Muscorum Frondosorum, Supplementum Secundum* 1: 44. 1823.; *Gymnostomum*. - Balsamo et de Notar. pugill. n. 27; *Funaria* Hedw., 507; sin.: *Entosthodon ericetorum* Schimp (Syn. musc. eur. 306.); sin.: *Funaria ericetorum* (de Not.) Dixon ; - Germany, Zusaetze u. Berich, 20.03.1864, leg. F. Schultz.

Gen. *Physcomitrella* Bruch & W.P. Schimper, in Bruch et al., 1849

***Physcomitrella patens* (Hedw.) Bruch & Schimp.** – (n. 4964) – ref.: *Bryologia Europaea* 1: 13. pl. 3: patens (fasc. 42. Monogr. 1. pl. 2: patens). 1849.; basionym: *Phascum patens* Hedw.; *Species Muscorum Frondosorum* 20. 1801.; sin.: - *Aphanorhegma patens* (Hedw.) Lindb.; *Ephemerum patens* (Hedw.) Hampe; *Phascum megapolitanum* Schultz; *Phascum patens* Hedw.; *Physcomitrella patens* var. *megapolitana* (Schultz) Bruch & Schimp.; *Phascum punctatum* Knaf ex Opiz.; - Hungary , Soroksar (on the Danube riverbank), 05.12.1872, leg. Simkovics L.

Gen. *Physcomitrium* (S.E. Bridel, 1827) S.E. Bridel

***Physcomitrium eurystomum* Sendtner** – (n. 5791) – ref.: *Denkschriften der Bayer. Botanischen Gesellschaft in Regensburg* 3: 142. 1841.; *Physcomitrium* - *Bryologia Universa* 2: 815. 1827.; sin.: *Physcomitrium acuminatum* Bruch & Schimp.; *Physcomitrium eurystoma* Sendtn.; *Physcomitrium gonoii* Broth. ex Cardot; *Physcomitrium higoense* Sakurai; - Austria, Aspera (on the Danube riverbank, close to Vienna), 20.10.1872, leg. C. Zirkentroth.

***Physcomitrium pyriforme* (Hedw.) Hampe** – (n. 5799) – ref.: *Linnaea* 11: 80. 1837. Basionym: *Gymnostomum pyriforme* Hedw.; *Species Muscorum Frondosorum* 38. 1801.; *Physcomitrium* - *Bryologia Universa* 2: 815. 1827.; sin.: *Gymnostomum pyriforme* Hedw.; - no date.

### Subclas. *Dicranidae*

Ord. *Dicranales*

Fam. *Dicranaceae* Schimp.

Gen. *Campylopus* Brid., 1818

***Campylopus flexuosus* (Hedw.) Brid.** - (n. 4972) – ref.: *Muscologia Recentiorum Supplementum* 4: 71. 1819[1818]. Basionym: *Dicranum flexuosum* Hedwig; *Species Muscorum Frondosorum* 145. 38 f. 1--4. 1801.; sin: *Campylopus flexuosus* Hedwig; *Campylopus paradoxus* Wilson; *Dicranum flexuosum* Hedwig; - Germany, Bonn, Vemsberg, May 1870, leg. A. Wigener

Gen. *Dicranella* (C. Müll.) Schimp., 1856

***Dicranella heteromalla* (Hedw.) Schimp.** – (n. 4975) – ref.: *Corollarium Bryologiae Europaeae* 13. 1856. Basionym: *Dicranum heteromallum* Hedw.; *Species Muscorum Frondosorum* 128. 1801.; sin.: *Aongostroemia asperula* Hampe; *Aongostroemia banatica* Hampe; - Romania, Harghita, (on soil), July 1869, leg. Barth.

***Dicranella palustris* (Dicks.) Crundw. ex Warb.** – (n. 4981) – ref.: ITIS Taxonomic Serial Number 16813.; sin.: *Anisothecium palustre* (Dicks.) I. Hagen; *Anisothecium squarrosus* (Schrad.) Lindb.; *Anisothecium squarrosus* (Starke) Lindb.; *Dicranella squarrosa* (Stark.) Schimp; *Dicranum squarrosa* Schrad.; - uncertain location (Fichtelgeb?), no date, leg. C. Gujlannal.

***Dicranella rufescens* (With.) Schimp.** – (n. 4990) – ref.: *Coroll. Bryol. Eur.* 13. 1856; ITIS Taxonomic Serial Number 16818.; sin.: *Anisothecium rufescens* (Dicks.) Lindb.; *Bryum rufescens* Withering (Syst. Arr.Brit. ed. 4, 3 : 801. 1801); *Dicranella hutchinsonii* Krajina; *Dicranum rufescens* (Dicks.) Turner; - Germany, the Kusel district (in Rhineland-Palatinate), Valle du Glon pres de Waldmohr (Palatinat), 20.11.1866, leg. Ney (F. Schultz, Herbarium normale).

***Dicranella subulata* (Hedw.) Schimp.** – (n. 4976) – ref.: *Corollarium Bryologiae Europaeae* 13. 1856. Basionym: *Dicranum subulatum* Hedw.; *Species Muscorum Frondosorum* 128. 34 f. 1--5. 1801. sin.: *Dicranella curvata* (Hedw.) Schimp.; *Dicranella secunda* Lindb.; *Dicranella subulata* var. *curvata* (Hedw.) Rabenh.; *Dicranum curvatum* Hedw.; *Dicranum subulatum* Hedw.; - Romania, Hunedoara, at the lape of the Retezat Montains, no date, leg. Simkovics L.

***Dicranella subulata* (Hedw.) Schimp.** – (n. 4978) – ref.: *Corollarium Bryologiae Europaeae* 13. 1856. Basionym: *Dicranum subulatum* Hedw.; *Species Muscorum Frondosorum* 128. 34 f. 1--5. 1801.; sin.: *Dicranella curvata* (Hedw.) Schimp.; *Dicranella secunda* Lindb.; *Dicranella subulata* var. *curvata* (Hedw.) Rabenh.; *Dicranum curvatum* Hedw.; *Dicranum subulatum* Hedw.; - Romania, Caraș-Severin, Voislova, 26.07.1872, leg. Simkovics L.

***Dicranella varia* (Hedw.) Schimp.** – (n. 4989) – ref.: *Corollarium Bryologiae Europaeae* 13. 1856. Basionym: *Dicranum varium* Hedw.; *Species Muscorum Frondosorum* 133. 1801.; sin.: *Anisothecium rubrum* Lindb.; *Anisothecium varium* (Hedw.) Mitt.; *Dicranella rubra* Lindb.; - Switzerland, St. Gallen, Altittoten, October 1861, leg. Zollikofer.

Gen. *Dicranodontium* Bruch & Schimp., in Bruch et al., 1847

***Dicranodontium denudatum* (Brid.) E. Britton** – (n. 4987) – ref.: *North American Flora* 15: 151. 1913. Basionym: *Dicranum denudatum* Brid.; *Muscologia Recentiorum Supplementum* 1: 184. 1806.; sin.: *Campylopus alpinum* Schimp.; *Campylopus longirostre* (F.Web. & D.Mohr) Spruce; *Dicranodontium alpinum* (Schimp.) Giac; *Dicranodontium denudatum* var. *alpinum* (Schimp.) I.Hagen; *Dicranodontium longirostre* (Web. & Mohr) B.S.G.; *Dicranodontium longirostre* Br. ; *Dicranum denudatum* Brid.; *Didymodon denudatus* (Brid.) Opiz; *Didymodon longirostre* F.Web. & D.Mohr; *Trichostomum longirostre* (F.Web. & D.Mohr) Hartm.; - Germany, Dresda, no date, leg. Holl.

Gen. *Dicranum* Hedw., 1801

***Dicranum spurium* Hedw.** – (n. 4974) - ref.: *Species Muscorum Frondosorum* 141. 1801.; sin.: *Cecalyphum longirostrum* P. Beuv.; *Dicranum brachycaulon* Kindb.; *Dicranum fragile* Brid.; - Germany, Rhon, (the Rhon, in Central Germany, in the Hesse lands, Bavaria and Turingia), 1870, leg. A. Geheeb (Ex herbaria A. Viegner).

***Dicranum scoparium* Hedw.** – (n. 4980) – ref.: *Species Muscorum Frondosorum* 126. 1801. ; sin.: *Cecalyphum condensatum* (Hedw.) P. Beuv.; *Dicranoloma otii* Sakurai; *Dicranum alatum* (Barnes) Cardot & Ther.; *Dicranum angustifolium* Kindb.; *Dicranum bonjeanii* var. *alatum* Barnes; - Romania, Hunedoara, Mt. Retezat, Clopotiva Valley, 30.07.1872, leg. Simkovics L.

***Dicranum scoparium* Hedw.** – (n. 4983) – ref.: *Species Muscorum Frondosorum* 126. 1801.; sin.: *Dicranum recurvatum* Schultz; *Dicranum scoparium* var. *alpestre* Hüb.; *Dicranum scoparium* var. *curvulum* Brid.; *Dicranum scoparium* var. *orthophyllum* (Brid.) Moenkem.; *Dicranum scoparium* var. *recurvatum* (Schultz) Brid.; - Romania, Hunedoara, Mt. Retezat, Zănoaga, 30. 07.1872, leg. Simkovics L.

***Dicranum polysetum* Sw. ex Anon.** – (n. 4985) – ref.: *Journal für die Botanik* 1800(2): 294. 1801. ; *Species Muscorum Frondosorum* 126. 1801.; sin.: *Dicranum undulatum* Ehrh. ex F. Web. & D. Mohr; *Dicranum undulatum* var. *falcatum* Loeske; - Slovakia, Podhragi (the historical county of Trencin), 1866, leg. Holuby.

***Dicranum viride* (Sull. & Lesq.) Lindb.** -- (n. 4986) – ref.: *Hedwigia* 2: 70. 1863.; Basionym: *Campylopus viridis* Sull. & Lesq; *The Musci and Hepaticae of the United States, reprint* 103. 1856.; *Species Muscorum Frondosorum* 126. 1801.; sin.: - *Campylopus viridis* Sull. & Lesq.; - *Dicranum fulvum* var. *viride* (Sull. & Lesq.) Frye; - *Paraleucobryum viride* (Sull. & Lesq.) Podp; - Germany (Flora das Tauns), Wicobaden, Buchen, 1871, leg. Ernst Zirkendrath.

***Dicranum muehlenbeckii* Bruch & Schimkp.** – (n. 4992) – ref.: *Bryologia Europaea* 1: 142. 78 (fasc. 37--40 Mon. 38. 30). 1847.; *Species Muscorum Frondosorum* 126. 1801.; sin.: *Dicranum convolutum* Hampe; *Dicranum rauei* Austin; - Austria, Trifken des Schnunberges, 09.09.1872, leg. Zirkendrath.

***Dicranum fuscescens* Sm.** – (n. 4993) – ref.: *Muscologiae Hibernicae Spicilegium* 70. 1804. sin.: *Dicranum congestum* Brid.; *Dicranum congestum* var. *angustifolium* Lorentz; *Dicranum fuscescens* Turn.; *Dicranum fuscescens* var. *angustifolium* Arnell & C.E.O.Jensen; *Dicranum fuscescens* var. *congestum* (Brid.) Husn.; *Dicranum fuscescens* var. *falcifolium* Braithw.; *Dicranum montanum* var. *flaccidum* Wulfsb.; *Dicranum rupestre* Brid.; *Dicranum scoparium* var. *fuscescens* (Sm.) F.Web. & D.Mohr; - Romania, Hunedoara, Mt. Retezat, Zănoaga, 29.07.1872, leg. Simkovics L.

#### Gen. *Kiaeria* I. Hagen

***Kiaeria starkei* (F. Weber & D. Mohr) I. Hagen** – (n. 4982) – ref.: *Det K. Norske Videnskabers Selskabs Skrifter* 1914(1): 114. 1915. , Basionym: *Dicranum starkei* F.Web. & D.Mohr; *Botanisches Taschenbuch* 189. 1807.; sin.: *Arctoa starkei*

(F.Web. & D.Mohr) Loeske; *Dicranum starkei* F. Web. & D. Mohr; *Dicranum starkei* var. *glaciale* J.E.Zett.; *Dicranella stricta* Schimp; *Dicranoweisia subcompacta* Cardot & Ther.; *Kiaeria starkei* var. *glacialis* (J. E. Zett.) I.Hagen; *Oncophorus starkei* (F.Web. & D.Mohr) Brid.; -Romania, Harghita, Frumoasa, August 1871, leg. Barth.

Fam. *Rhabdoweisiaceae* Limpr.

Gen. *Cynodontium* Schimp., nom. cons.

***Cynodontium gracilescens* (F. Weber & D. Mohr) Schimp.** – (n. 5031) – ref.: *Corollarium Bryologiae Europaeae* 12. 1856. Basionym: *Dicranum gracilescens* F. Weber & D. Mohr; *Botanisches Taschenbuch* 184. 1807.; *Botanisches Taschenbuch* 184. 1807.; sin.: *Dicranum alpestre* Wahl.; *Dicranum gracilescens* (F. Weber & D. Mohr) Mitt; *Dicranum mixtum* De Not.; - Romania, Hunedoara, Mt. Retezat, Zănoaga, 30.07.1872, leg. Simkovics L.

Gen. *Dichodontium* Schimp.

***Dichodontium pellucidum* (Hedw.) Schimp.** – (n. 4991) – ref.: *Corollarium Bryologiae Europaeae* 12. 1856. Basionym: *Dicranum pellucidum* Hedw.; *Species Muscorum Frondosorum* 142. 1801.sin.: *Dichodontium pellucidum* var. *fagimontanum* (Brid.) Schimp.; *Dicranum pellucidum* Hedw.; *Dicranum pellucidum* var. *fagimontanum* Brid.; - Romania, Hunedoara, Mt. Retezat, Clopotiva Valley, 29.07.1872, leg. Simkovics L.

Gen. *Dicranoweisia* Lindb. ex Milde

***Dicranoweisia crispula* (Hedw.) Milde** – (n. 5073) – ref.: *Bryologia Silesiaca* 49. 1869. Basionym: *Weisia crispula* Hdw.; *Species Muscorum Frondosorum* 68. pl. 12, f. 1--6. 1801. sin.: *Blindia subinclinata* Müll. Hal.; *Dicranoweisia crispula* var. *atrata* (Nees & Hornsch.) Molendo; *Dicranoweisia crispula* var. *intermedia* (J. J. Amann) Podp.; *Dicranoweisia intermedia* J.J.Amann; *Grimmia crispula* (Hedw.) Turner; *Weisia crispula* Hdw.; *Weissia crispula* var. *atrata* Nees & Hornsch.; - Romania, Sibiu, Cristian (Grossau), on soil, June, 1871, leg. Barth.

***Dicranoweisia crispula* (Hedw.) Lindb. ex Milde** - (n. 5080) - ref.: *Bryologia Silesiaca* 49. 1869. Basionym: *Weissia crispula* Hedw.; *Species Muscorum*

*Frondosorum* 68. pl. 12, f. 1--6. 1801.; sin.: *Dicranoweisia crispula* var. *atrata* (Nees & Hornsch.) Molendo; *Dicranoweisia crispula* var. *intermedia* (J. J. Amann) Podp.; *Dicranoweisia intermedia* J.J.Amann; *Grimmia crispula* (Hedw.) Turner; *Weissia crispula* Hedw.; *Weissia crispula* var. *atrata* Nees & Hornsch.; – Romania, Hunedoara, Mt. Retezat, Zănoaga, 31.07.1872, leg. Simkovics L.

***Dicranoweisia cirrata* (Hedw.) Lindb. ex Milde** – (n. 5077) – ref.: *Bryologia Silesiaca* 49. 1869. Basionym: *Weissia cirrata* Hedw.; *Species Muscorum Frondosorum* 69. Pl. 12, f. 7-12. 1801.; sin.: *Dicranum cirratum* (Hedw.) Timm ex Gaertn. et al.; *Grimmia cirrata* (Hedw.) Feb. & Dohr; *Weissia cirrata* Hedw.; - Switzerland, Agen bei Goplan, April 1872, leg. Nestor Bertram.

Fam. *Bruchiaceae*

Gen. *Trematodon* Michx.

***Trematodon ambiguus* (Hedw.) Hornsch.** – (n. 5084) – ref.: *Flora* 2: 88. 1819. Basionym: *Dicranum ambiguum* Hedw.; *Species Muscorum Frondosorum* 150. 1801.; *Flora Boreali-Americana* 2: 289. 1803.; sin.: *Dicranum ambiguum* Hedw.; *Mnium setaceum* Jolycl.; *Trematodon acicularis* Kindb.; - Germany, Bonn, 1869, leg. Dr. Drecse (Ex herbario A. Viegener).

Fam. *Ditrichaceae* Limpr. in Rabenh.:

Gen. *Ceratodon* Brid.

***Ceratodon purpureus* (Hedw.) Brid.** – (n. 5028) – ref.: *Bryologia Universa* 1: 480. 1826. Basionym: *Dicranum purpureum* Hedw.; *Species Muscorum Frondosorum* 136. 36. 1801.; sin.: *Bryum purpureum* Huds.; *Ceratodon purpureus* (Hedw.) Jenn.; *Didymodon purpureus* (Hedw.) Hook. & Taylor; *Dicranum purpureum* Hedw.; *Trichostomum purpureum* (Hedw.) De Not.; - Hungary, Pest, Budapesta, 1871, no signed.

***Ceratodon purpureus* (Hedw.) Brid.** – (n. 5030) – ref.: *Bryologia Universa* 1: 480. 1826. Basionym: *Dicranum purpureum* Hedw.; *Species Muscorum Frondosorum* 136. 36. 1801.; sin.: *Bryum purpureum* Huds.; *Ceratodon purpureus* (Hedw.) Jenn.; *Didymodon purpureus* (Hedw.) Hook. & Taylor; *Dicranum purpureum* Hedw.;



*Trichostomum purpureum* (Hedw.) De Not.; - Hungary, Pest, 1891, no signed.

Gen. *Cleistocarpidium* Ochyra & H. Bednarek-Ochyra

***Cleistocarpidium palustre* (Bruch & Schimper) Ochyra & H. Bednarek-Ochyra** – (n. 4965) – ref.: *Fragmenta Floristica et Geobotanica* 41: 1035. 1996. Basionym: *Pleuridium palustre* Bruch & Schimper; *Mémoires de la Société d'Histoire Naturelle de Strasbourg* 2: 2. A. 1835.; sin.: *Phascum palustre* Bruch & Schimper; *Astomum palustre* (Bruch & Schimper) Hampe; *Bruchia palustris* (Bruch & Schimper) J. K. A. Müller; *Pleuridium palustre* (Bruch & Schimper) Bruch & Schimper; *Sporledera palustris* (Bruch & Schimp.) Schimp.; - France, Bitche (Noselle), December 1833, leg. F. Schultz.

Gen. *Distichium* Bruch & Schip. in Bruch et al., 1846, nom. cons.

***Distichium capillaceum* (Hedw.) Bruch & Schimp.** – (n. 4973) – ref.: *Bryologia Europaea* 2: 156 (fasc. 29–31. Monogr. 4). 1846. Basionym: *Cynontodium capillaceum* Hedw.; *Species Muscorum Frondosorum* 57. 1801; sin.: *Cynontodium capillaceum* Hedw.; *Cynodontium capillaceum* (Hedw.) Brid.; *Didymodon capillaceus* (Hedw.) F. Web. & D. Mohr; *Distichium montanum* I. Hagen; *Swartzia capillacea* (Hedw.) Brid.; *Trichostomum capillaceum* (Hedw.) Sm.; - Switzerland, Grisons (Canton Graubunden), Hinterrhein, Rongellen, Via Mala (Viamala), 1869, leg. E. Zirkendrath.

Gen. *Ditrichum* G.E. Hampe, 1867, nom. cons.

***Ditrichum flexicaule* (Schwägr.) Hampe** – (n. 5057) – ref.: *Flora* 50: 182. 1867. Basionym: *Cynodontium flexicaule* Schwägr.; *Species Muscorum Frondosorum, Supplementum Primum* 1: 113. pl. 29. 1811.; sin.: *Cynodon flexicaulis* (Schwägr.) Steud.; *Cynodontium flexicaule* Schwägr.; *Didymodon flexicaulis* (Schwägr.) Röhl.; *Ditrichum flexicaule* var. *brevifolium* (Kindb.) Barnes; *Leptotrichum flexicaule* (Schwägr.) Hampe; *Leptotrichum flexicaule* ssp. *brevifolium* Kindb.; *Trichostomum flexicaule* (Schwägr.) Bruch & Schimp.; - Germany, Turingia, no date, leg. no signature.

***Ditrichum heteromallum* (Hedw.) Britton** – (n. 5114) – ref.: *North American Flora* 15: 64. 1913. Basionym: *Weissia heteromalla* Hedw.; *Species Muscorum Frondosorum* 71. 1801.; sin.: *Didymodon heteromallus* (Hedw.) Hook. & Taylor ;

*Diaphanophyllum homomallum* (Hedw.) Lindb.; *Dicranum homomallum* (Hedw.) Hassk.; *Didymodon homomallus* Hedw.; *Didymodon homomallum* (Hedw.) Hampe; *Grimmia homomalla* (Hedw.) Sm.; *Leptotrichum heteromallum* (Hedw.) Mitt.; *Leptotrichum homomallum* (Hedw.) Hampe; *Trichostomum heteromallum* Lindb. ex Aust.; *Trichostomum homomallum* (Hedw.) Br. et Sch.; *Weissia heteromalla* Hedw.; – Romania, Hunedoara, Mt. Retezat, Clopotiva Valley, 20.07.1872, leg. Simkovics L.

Gen. *Pleuridium* Rabenh., nom. cons.

***Pleuridium subulatum* (Hedw.) Rabenh.** – (n. 4966) – ref.: *Deutschlands Kryptogamen-Flora* 2(3): 79. 1848. Basionym: *Phascum subulatum* Hedwig; *Species Muscorum Frondosorum* 19. 1801. sin.: *Astomum subulatum* (Hedw.) Hampe; *Phascum subulatum* Hedwig; *Pleuridium alternifolium* sensu Andrews; *Pleuridium alternifolium* (Kaulf.) Rabenh.; *Pleuridium alternifolium* var. *lancastricense* Sullivant & Lesquereux; *Pleuridium alternifolium* var. *robustum* Sullivant & Lesquereux; - Romania, Braşov, Dăişoara (Longenthal), April 1871, leg. Barth.

***Pleuridium subulatum* (Hedw.) Rabenh.** – (n. 4967) – ref.: *Deutschlands Kryptogamen-Flora* 2(3): 79. 1848. Basionym: *Phascum subulatum* Hedwig; *Species Muscorum Frondosorum* 19. 1801. sin.: *Astomum subulatum* (Hedw.) Hampe; *Phascum subulatum* Hedwig; *Pleuridium alternifolium* sensu Andrews; *Pleuridium alternifolium* var. *lancastricense* Sullivant & Lesquereux; *Pleuridium alternifolium* var. *robustum* Sullivant & Lesquereux; - unidentified location (Loeconberg?), 1876, leg. Dresler.

Gen. *Saelania* Lindb.

***Saelania glaucescens* (Hedw.) Broth.** – (n. 5111) – ref.: *Herbarium Musei Fennici, Editio Secunda*, Musci 53. 1894. Basionym: *Trichostomum glaucescens* Hedw.; *Species Muscorum Frondosorum* 112. 1801.; Utkast till en Naturlig Gruppering af Europas Bladmossor 35. 1878.; sin.: *Bryum caesium* P. Beauv.; *Didymodon glaucescens* (Hedw.) F. Web. & D. Mohr; *Ditrichum glaucescens* (Hedw.) Hampe; *Ditrichum glaucescens* (Hedw.) Hampe; *Leptotrichum glaucescens* Hedw.; *Leptotrichum glaucescens* (Hedw.) Hampe; *Saelania caesia* (P. Beauv.) Lindb.; *Trichostomum glaucescens* Hedw.; - Romania, Arad, Săvârşin (Calvaria hills), 22.07.1872, leg. Simkovics L.

Ord. *Grimmiales*  
Fam. *Grimmiaceae* Armott

Gen. *Grimmia* Hedwig, 1801

***Grimmia affinis* Hoppe & Hornsch. ex Hornsch.** – (n. 5041) – ref.: *Flora* 2: 85. 1819 [Feb].; .ITIS- Taxonomic Srial No.: 16981; sin.: *Grimmia ovata* F. Web. & D.Mohr; *Grimmia ovata* var. *igantean* (Nees & Hornsch.) Huebener; *Grimmia ovata* var. *gigante* (Hornsch.) Huebener; *Grimmia ovalis* auct.; - Romania, Transylvania, May 1871, leg. Barth.

***Grimmia crinita* Brid.** – (n. 5043) – ref.: *Muscologia Recentiorum Supplementum* 1: 95. 1806.; *Species Muscorum Frondosorum* 75. 1801; sin.: *Gasterogrimmia crinita* (Brid.) Buyss; *Guembelia crinita* (Brid.) Hampe; *Weissia crinita* (Brid.) Poir ex Brid.; - Germany, Bieberich (the Slosmaer castle), Nassau, 29.05.1870, leg. Zirkendrath, A. Wiegener.

***Grimmia donniana* Sm.** – (n. 5040) – ref.: *English Botany* 18: 1259. 1804.; *Species Muscorum Frondosorum* 75. 1801.; sin.: *Dryptodon donnianus* (Sm.) Hartm.; *Dryptodon obtusus* Hartm.; *Grimmia obtusa* Schwägr.; *Grimmia orbicularis* Bruch; *Grimmia sudetica* Spreng. ex Schkuhr; *Grimmia triformis* Carestia & De Not.; *Grimmia ungeri* Jur.; *Guembelia donniana* (Sm.) Loeske; - Germany, Milseburg (pe Rhon), October 1872, leg. Geheeb (Leipziger Bot. Tausch-Verein.).

***Grimmia funalis* (Schwagr.) Bruch. & Schimp.** – (n.5826) – ref.: *Bryologia Europaea* 3: 119. 247 (fasc. 25–28 Mon. 17. 11). 1845. basionym: *Trichostomum funale* Schwagr.; *Species Muscorum Frondosorum, Supplementum Primum* 1: 150. pl. 37. 1811.; sin.: *Campylopus funalis* (Schwaegr.) Brid.; *Dryoptodon funalis* (Schwagr.) Brid.; *Dryoptodon spiralis* Brid.; *Grimmia bauri* C. Mull.; *Grimmia calvescens* Kindb.; *Grimmia cernua* Nees & Hornsch.; *Grimmia funalis* var. *calvescens* (Kindb.) H. Moller; *Grimmia funalis* var. *epilifera* (J.E.Zett.) Broth. & Saelán; *Grimmia funalis* var. *epilosa* Milde; *Grimmia funalis* var. *ryanii* (Limpr. ex Bryhn) Loeske; *Grimmia hornii* Stirt.; *Grimmia spiralis* Hook. & Tayl.; *Grimmia spiralis* var. *epilifera* J.E.Zett.; *Grimmia ryanii* Limpr. Ex Bryhn; - Switzerland, St. Gallen, dec. 1858, no signature.

***Grimmia gigantea* Schpr.** – (n. 5044) – sin.: *Didymodon giganteus* (Funck) Jur.; *Geheebia gigantea* (Funck) Boul.; *Grimmia gigantea* (Funck) Schimp.; - Germany,

Turingia, Sonneberg, 09.09.1872, leg. Zickendrath.

***Grimmia laevigata* (Brid.) Brid.** – (n. 5034) – ref.: *Bryologia Universa* 1: 183. 1826. Basionym: *Campylopus laevigatus* Brid.; *Muscologia Recentiorum Supplementum* 4: 76. 1819 [1818].; *Species Muscorum Frondosorum* 75. 1801.; sin.: *Campylopus laevigatus* Brid.; *Grimmia albida* Spreng.; *Grimmia leucophea* Grév.; - Germany, Kleinosteim (a / Main), 06.04.1866, leg. Kastropp.

***Grimmia muhlenbeckii* Schimp.** – (n. 5032) – ref.: *Studien zur Vergleichenden Morphologie und Phylogenetischen Systematik der Laubmoose* 111. 1910. Basionym: *Grimmia muhlenbeckii* Schimp.; *Synopsis Muscorum Europaeorum* 212. 1860.; sin.: *Campylopus pulvinatus* var. *tenuis* Wahlenb.; *Dryptodon muehlenbeckii* (Schimp.) Loeske ; *Grimmia trichophylla* ssp. *muehlenbeckii* (Schimp.) Boulay; *Grimmia trichophylla* var. *muehlenbeckii* (Schimp.) Husn.; *Grimmia trichophylla* var. *tenuis* (Wahlenb.) Wijk & Margad; - Romania, Alba, Jidvei, Feisa (Fussen), July 1869, leg. Barth.

***Grimmia orbicularis* Bruch.** – (n. 5033) – ref.: *English Botany Suppl.* 4 4: 2888. 1844.; *Species Muscorum Frondosorum* 75. 1801.; sin.: *Grimmia mammillaris* Poech.; *Grimmia obovata* R. Br. Bis; - France, Alsace, Weissenburg, 29.02. – 03.03.1872, leg. F. Winter, F. Schultz.

***Grimmia ovalis* (Hedw.) Lindb.** – (n. 5038) – ref.: *Acta Societatis Scientiarum Fennicae* 10: 75. 1871.; *Muscologia Germanica* 185. 1833.; sin.: *Dicranum ovale* Hedw.; *Grimmia commutate* Hubner; *Grimmia igantean* Huebener; *Grimmia caucasica* (Müll.Hal.) A.Jaeger; *Grimmia ovata* Weber & Mohr; *Grimmia ovataeformis* Kindb.; *Grimmia patens* Hornsch.; *Guembelia caucasica* Müll.Hal.; *Guembelia igantean* Rabenh.; *Guembelia ovalis* (Hedw.) Müll.Hal; *Trichostomum ovale* (Hedw.) Röhl.; - Romania, Caraș-Severin, Mehadia (the Starsoc hills), 05.08.1872, leg. Simkovics L.

***Grimmia pulvinata* (Timm ex Hedw.) Sm.** . – (n. 5036) – ref.: *English Botany* 24: 1728. 1807. Basionym: *Fissidens pulvinatus* Hedw.; *Species Muscorum Frondosorum* 158. pl. 40: f. 1–3. 1801.; *Species Muscorum Frondosorum* 75. 1801.; sin.: *Campylopus pulvinatus* (Hedw.) Brid.; *Dryptodon pulvinatus* (Timm ex Hedw.) Brid.; *Fissidens pulvinatus* Timm ex Hedw.; *Grimmia pulvinata* var. *cana* (Hartm.) Hartm.; *Trichostomum pulvinatum* (Timm ex Hedw.) F. Web. & D. Mohr; - Romania, Arad, Săvârșin (the Tular hills), 22.07.1872, leg. Simkovics L.

***Grimmia pulvinata* (Timm ex Hedw.) Sm.** – (n. 5037) – ref.: *English Botany* 24: 1728. 1807. Basionym: *Fissidens pulvinatus* Hedw.; *Species Muscorum Frondosorum* 158. pl. 40: f. 1–3. 1801.; *Species Muscorum Frondosorum* 75. 1801.; sin.: *Campylopus pulvinatus* (Hedw.) Brid.; *Dryptodon pulvinatus* (Timm ex Hedw.) Brid.; *Fissidens pulvinatus* Timm ex Hedw.; *Grimmia pulvinata* var. *cana* (Hartm.) Hartm.; *Trichostomum pulvinatum* (Timm ex Hedw.) F.Web. & D.Mohr;; - Romania, Arad, Săvârșin (the Calvaria hills), 22.07.1872, leg. Simkovics L.

Gen *Schistidium* Bruch & Schimp., 1845

***Schistidium apocarpum* (Hedw.) Bruch & Schimp.** – (n. 5039) – ref.: *Bryologia Europaea* 3: 99 (fasc. 25–28. Monogr. 7). 1845. Basionym: *Grimmia apocarpa* Hedw.; *Species Muscorum Frondosorum* 76. 1801.; sin.: *Grimmia apocarpa* Hedw.; *Grimmia apocarpa* var. *ambigua* (Sull.) G. Jones in Grout; *Grimmia apocarpa* var. *atrofusca* (Scimp.) Husn.; *Grimmia apocarpa* var. *brunnescens* (Limpr.) Monk.; *Grimmia apocarpa* var. *conferta* (Funck.) Spreng; *Grimmia apocarpa* Hedw. V. *gracilis*; *Grimmia apocarpa* var. *gracilis* Web.&Mohr ex Nees et al.; *Grimmia alpicola* var. *dupretii* (Ther.) Crum.; *Grimmia apocarpa* Hedw.; *Grimmia atricha* Mull.&Kindb.; *Grimmia coloradensis* Aust.; *Grimmia drupetii* Ther.; *Grimmia stricta* Turn; *Schistidium gracile* (Web.&Mohr) Schleich. – Romania, Hunedoara, Luncani (Tăul Ursului Valley), 25.07.1872, leg. Simkovics L.

***Schistidium apocarpum* (Hedw.) Bruch & Schimp.** – (n. 5035) – ref.: *Bryologia Europaea* 3: 99 (fasc. 25–28. Monogr. 7). 1845. Basionym: *Grimmia apocarpa* Hedw.; *Species Muscorum Frondosorum* 76. 1801.; sin.: *Grimmia alpicola* var. *dupretii* (Ther.) Crum.; *Grimmia apocarpa* Hedw.; *Grimmia dupretii* Ther.; *Schistidium ambiguum* Sull.; *Schistidium alpicola* var. *dupretii* (Ther.) Crum.; *Schistidium apocarpum* var. *dupretii* (Ther.) Wijk.&Marg.; *Schistidium apocarpum* var. *ambiguum* (Sull.) G. Jones; *Schistidium apocarpum* var. *atrofuscum* (Schimp.) G. Jones; *Schistidium apocarpum* var. *brunnescens* (Limpr.) Herz.; *Schistidium apocarpum* var. *gracile* (Web.&Mohr.) Bruch.&Scimp; *Schistidium atrofuscum* (Schimp.) Limpr. ; *Schistidium brunnescens* Limpr.; *Schistidium gracile* (Web.&Mohr.) Bruch.&Scimp ; *Schistidium strictum* (Turn.) T. Kop.&Isov.; - Switzerland, Mainburg, December 1866, leg. Zollikofer.

Ord. *Seligeriales*

Fam. *Seligeriaceae* Schimp.

Gen. *Blindia* Bruch & Schimp., 1846

***Blindia acuta* (Hedw.) Bruch & Schimp.** – (n. 5814) - ref.: *Bryologia Europaea* 2: 19 (fasc. 33--36. Monogr. 3). 1846. Basionym: *Weissia acuta* Hedw; *Species Muscorum Frondosorum* 71. 1801.; sin.: *Blindia acuta* Dils.; *Blindia acuta* var. *brevisetata* Bruch & Schimp.; *Grimmia acuta* (Hedw.) F.Web. & D.Mohr; *Seligeria acuta* (Hedw.) De Not.; *Weissia acuta* Hedw.; - Romania, Maramureş (Marmoros), no date, leg. Horzhenfssse

Ord. *Pottiales*Fam. *Cinclidotaceae* K. SaitoGen. *Cinclidotus* P. Beauv.

***Cinclidotus aquiticus* Br. et Sch.** – (n. 4968) – ref.: *Bryol. Eur.* 3: 170. 1842; - Switzerland, Erms, Urach Schwab., Jura, August 1872, leg. E. Kolb.

***Cinclidotus fontinaloides* (Hedw.) P.Beauv.** – (n. 4969) – ref.: *Prodrome des Cinquième et Sixième Familles de l'Aéthéogamie* 52. 1805. Basionym: *Trichostomum fontinaloides* Hedw.; *Species Muscorum Frondosorum* 114. 1801.; *Magasin Encyclopédique* 5: 319. 1804.; sin.: *Cinclidotus minor* Lindb.; *Guembelia fontinaloides* (Hedw.) Müll.Hal.; *Racomitrium fontinaloides* (Hedw.) Brid.; *Sekra minor* Lindb.; *Trichostomum fontinaloides* Hedw. – Germany, Hesse, the Rhongebirge range, (on basalt), 1871, leg. A. Geheeb (Ex. Herbarium A. Vigener).

***Cinclidotus riparius* (Host ex Brid.) Arn.** – (n. 4971) – ref.: *Mémoires de la Société Linnéenne de Paris* 7: 247. 1827. Basionym: *Gymnostomum riparium* Host ex Brid.; *Journal für die Botanik* 1800(1): 274. 1801.; sin.: *Cinclidotus riparius* Brid.; *Cinclidotus riparius* (Brid.) Amott; *Cinclidotus nigricans* (Brid) Wijk. & Margad.; *Recomitrium riparium* (Host. ex Brid.) Brid.; *Trichostomum nigricans* Brid.; - Austria, Tirol, Ineran, 1864, leg. P. Drechsel.

Fam. *Pottiaceae* Schimp.Gen *Acaulon* C. Müller Hal, 1847

***Acaulon triquetrum* (Spruce) Mull. Hal** - (n. 4963) - ref.: *Botanische Zeitung*.



Berlin 5: 100. 1847. Basionym: *Phascum triquetrum* Spruce.; *London Journal of Botany* 4: 189. 1845.; sin.: *Acaulon triquetrum* (Spruce) Mull. Hal.; *Phascum triquetrum* Spruce.; *Spharæangium triquetrum* (Spruce) Schimp.; - Hungary, Pest, Budaors (Mt. Lucenberg), 16.02.1873, leg. Simkovics L.

Gen. *Aloina* Kindb., 1882, nom. cons. \_

***Aloina rigida* (Hedw.) Limpr.** – (n. 5016) – ref.: *Die Laubmoose Deutschlands, Oesterreichs und der Schweiz* 1: 637. 1888. Basionym: *Barbula rigida* Hedw.; *Species Muscorum Frondosorum* 115. 1801.; sin.: *Aloina rigida* var. *obtusa* (Jur.) Limpr.; *Aloina stellata* Kindb.; *Barbula rigida* Hedw.; *Barbula rigida* Schz. ; *Tortula rigida* (Hedw.) Schrad. ex Turner; *Tortula rigida* var. *obtusa* Jur.; *Tortula stellata* Lindb.; - Austria, Vienna, 20.10.1872, leg. E. Zirckendrath.

***Aloina rigida* var. *ambigua* (Bruch & Schimp.) E.J. Craig** – (n. 5017) – ref.: *Bryologia Europaea* 2: 76. 139 (fasc. 13--15 Mon. 14. 2). 1842.; sin. *Barbula ambigua* Bruch & Schimp.; - Germany, Deidesheim, on Rin, 18.12.1868, leg. F. Schultz.

Gen *Anoetangium* Schwägrchen, 1811, nom. cons.

***Anoetangium aestivum* (Hedw.) Mitt.** – (n. 5093) – ref.: *Journal of the Linnean Society, Botany* 12: 175. 1869. Basionym: *Gymnostomum aestivum* Hedw.; *Species Muscorum Frondosorum* 32. 2 f. 4--7. 1801.; *Species Muscorum Frondosorum, Supplementum Primum* 1: 33. 1811.; sin.: *Anoetangium angustifolium* Mitt.; *Anoetangium aestivum* var. *brevifolium* (Jur. ex Milde) C.E.O.Jensen; *Anoetangium aestivum* var. *glaciale* (Lorentz & Molendo) Wijk & Margad.; *Anoetangium aestivum* var. *pellucidum* Wilson ex Braithw.; *Anoetangium compactum* Schwägr.; *Anoetangium compactum* var. *brevifolium* Jur. ex Milde; *Anoetangium compactum* var. *glaciale* Lorentz & Molendo; *Anoetangium compactum* var. *pellucidum* (Wilson ex Braithw.) Dixon; *Anoetangium euchloron* (Schwägr.) Mitt.; *Gymnostomum aestivum* Hedw.; *Gymnostomum compactum* Schleich.; *Gymnostomum euchloron* Schwägr.; *Pleurozygodon aestivus* (Hedw.) Lindb.; - hort. Hoti.; leg. Salub.

Gen *Barbula* Hedw., 1801, nom. cons. \_

***Barbula convoluta* Hdw.** – (n. 5816) – ref.: *Species Muscorum Frondosorum*



120. 1801.; sin.; *Barbula commutata* Jur.; *Barbula convoluta* var. *filiformis* I.Hagen; *Barbula sulcata* Geh.; *Streblotrichum convolutum* (Hedw.) P.Beauv.; *Tortula convoluta* (Hedw.) Gaertn. et al.; - Germany, Turingia, Ilm-Kreis , Arnstadt, 1871, leg. O. Uhlvorm. (?)

***Barbula enderesii* Garov.** – (n..5013) – ref.: *Bryologia Austriaca Excursoria* 37. 1840.; *Species Muscorum Frondosorum* 115. 1801; sin.: *Barbula flavipes* Bruch & Schimp.; *Streblotrichum enderesii* (Gro.v.) Loeske; *Streblotrichum flavipes* (Bruch & Schimp.) J.J. Amann.; - Germany, Bavaria, Eichstaedt, 29.07.1864, leg. F. Arnand. (F. Schultz – Herbarium normale).

***Barbula unguiculata* Hedw.** – (n. 5025) – ref.: *Sp.Musc. Frond.* 118. 1801; sin.: *Barbula apiculata* Hedw.; *Barbula cuspidata* Schultz; *Barbula fastigiata* Schultz ; *Barbula lanceolata* Hedw.; *Barbula microcarpa* Schultz; *Barbula unguiculata* Hedw. forma *apiculata*; *Barbula unguiculata* var. *apiculata* (Hedwig) Bruch, W.P. Schimper & W.T. Gumbell; *Barbula unguiculata* var. *cuspidata* (Schultz) Brid.; *Barbula unguiculata* var. *fastigiata* (Schultz) Huebener; *Barbula unguiculata* var. *lanceolata* (Hedw.) Dixon; *Barbula unguiculata* var. *microcarpa* (Schultz) Huebener; *Barbula unguiculata* var. *robusta* Lindb. ex I. Hagen; *Bryum aristatum* Dicks.; *Tortula unguiculata* (Hedw.) Roth ex P. Beauv.; - Romania, Hunedoara Luncani, Tăul Ursului, 25.07.1872, leg. Simkovics L.

Gen. *Bryoerythrophyllum* P.C. Chen., 1941\_

***Bryoerythrophyllum recurvirostrum* (Hedw.) P.C.Chen** – (n. 4977) – ref.: *Hedwigia* 80: 5. 1941. Basionym: *Weissia recurvirostris* Hedw.; *Species Muscorum Frondosorum* 71. 1801.; sin.: *Anacalypta rubella* Huebener; *Barbula recurvirostra* (Hedw.) Dixon; *Barbula rubella* (Huebener) Mitt.; *Bryoerythrophyllum recurvirostrum* var. *brevifolium* (Lindb. & Arnell) Podp.; *Bryum lacustre* Brid.; *Didymodon rubellus* Bruch & Schimp.; *Didymodon rubellus* var. *brevifolius* (Lindb. & Arnell) Paris; *Didymodon rubellus* var. *intermedius* Limpr.; *Didymodon rubellus* var. *pallens* Ryan; *Didymodon rubellus* var. *serratus* Schimp.; *Erythrophyllum recurvirostrum* (Hedw.) Loeske; *Erythrophyllum rubellum* (Huebener) Hilp.; *Grimmia recurvirostris* (Hedw.) Turner; *Trichostomum recurvirostre* (Hedw.) Lindb.; *Trichostomum rubellum* Rabenh.; *Weissia curvirostris* Lam. & DC.; *Weissia recurvirostris* Hedw.; - Romania, Transylvania, Valea Lungă (Langenthal), September 1872, leg. Barth.

Subfam. *Trichostomoideae*Gen *Didymodon* j. Hedwig, 1801

***Didymodon falax* (Hedw.) R.H. Zander.** – (n. 5022) – sin.: *Barbula adriatica* Baumg.; *Barbula fallax* Hedw.; *Barbula fallax* var. *adriatica* (Baumg.) Giacom.; *Didymodon fallax* var. *adriatica* (Baumg.) Düll ; *Tortula fallax* (Hedw.) Schrad. ex Turner; *Tortula imberbis* Sm.; – Romania, Caraș-Severin, Voislova, 26.07.1872, leg. Simkovics L.

***Didymodon rigidulus* Hedw.** – (n. 5012) – ref.: *Species Muscorum Frondosorum* 104. 1801.; sin.: *Barbula rigidula* (Hedw.) Milde; *Barbula rigidula* ssp. *andreaeoides* (Limpr.) Culm.; *Barbula rigidula* var. *excurrens* (I.Hagen) Weim.; *Didymodon rigidulum* Hedw.; *Didymodon rigidulus* ssp. *andreaeoides* (Limpr.) Wijk & Margad.; *Didymodon rigidulus* var. *excurrens* I.Hagen; *Grimmia andreaeoides* Limpr.; *Tortula rigidula* (Hedw.) Lindb.; *Trichostomum rigidulum* (Hedw.) Turner; *Trichostomum rigidulum* var. *densum* Bruch & Schimp.; - Romania, Transylvania, Engheder Schludit, May 1871, leg. Barth.

Subfam. *Pleuroweisioidae*Gen. *Hymenostylium* Brid., 1827

***Hymenostylium recurvirostrum* (Hedw.) Dixon** - (n. 5045) – ref.: *Journal of the Proceedings of the Linnean Society, Botany, Supplement* 1: 32. 1859.; *Bryologia Universa* 2: 81. 1827.; sin.: *Barbula curvirostris* Lindb.; *Eucladium curvirostre* C.E.O.Jensen; *Barbula curvirostris* var. *laeviuscula* (Lindb.) Lindb. & Arnell; *Gymnostomum commutatum* (Mitt.) Lorentz; *Gymnostomum curvirostre* Hedw. ex Brid.; *Gymnostomum microcarpon* Nees & Hornsch.; *Gymnostomum recurvirostrum* Hedw.; *Gymnostomum recurvirostrum* var. *commutatum* (Mitt.) Grout; *Hymenostylium commutatum* Mitt.; *Hymenostylium curvirostre* Mitt.; *Hymenostylium curvirostre* var. *latifolium* I.Hagen; *Hymenostylium curvirostre* var. *scabrum* (Lindb.) Limpr.; *Hymenostylium recurvirostrum* var. *latifolium* (J.E.Zett.) Wijk & Margad.; *Hymenostylium recurvirostrum* var. *scabrum* (Lindb.) Podp.; *Hymenostylium scabrum* (Lindb.) Loeske; *Weissia curvirostris* Müll.Hal.; *Weissia recurvirostra* (Hedw.) Dixon; - Switzerland, Kanton Graubunden (Grisons), Via Mala (Viamala), 03.08.1869, leg. Zirkendrath.

Gen *Microbryum* Schimp.

***Microbryum curvicolle* (Ehrh. ex Hedw.) R.H.Zander** – (n. 4961) - ref.: *Bulletin of the Buffalo Society of Natural Sciences* 32: 240. 1993. Basionym: *Phascum curvicolle* Hedw.; *Species Muscorum Frondosorum* 21. 1801.; sin.: *Phascum curvicollum* Hedw.; *Phascum curvicolle* Ehrh. ex Hedw.; *Phascum crispum* Hedw.; *Phascum piptocarpum* Durieu & Mont.; *Pottia curvicolla* (Ehrh. ex Hedw.) Mitt.; *Pottiella curvicolla* (Ehrh. ex Hedw.) Gams; - Hungary, Pest, Budaors (Mt. Lucenberg), 16.02.1873, leg. Simkovics L.

***Microbryum curvicolle* (Ehrh. ex Hedw.) R.H. Zander** – (n. 4962) - ref.: *Bulletin of the Buffalo Society of Natural Sciences* 32: 240. 1993. Basionym: *Phascum curvicolle* Hedw.; *Species Muscorum Frondosorum* 21. 1801.; sin.: *Phascum curvicollum* Hedw.; *Phascum curvicolle* Ehrh. ex Hedw.; *Phascum crispum* Hedw.; *Phascum piptocarpum* Durieu & Mont.; *Pottia curvicolla* (Ehrh. ex Hedw.) Mitt.; *Pottiella curvicolla* (Ehrh. ex Hedw.) Gams; - Hungary, Pest, Budaors (Mt. Lucenberg), 16.02.1873, leg. Simkovics L.

***Microbryum floerkeanum* (Web & Mohr) Schimp.** - (n. 4960) - ref.: *Synopsis Muscorum Europaeorum* 11. 1860. Basionym: *Phascum floerkeanum* Web.& Mohr. ; *Botanisches Taschenbuch* 70, 451. 1807.; *Synopsis Muscorum Europaeorum* 10. 1860.; sin.: *Phascum floerkeanum* Web.& Mohr.; - Hungary, Pest, Budaors (Mt. Lucenberg)), 16.02.1873, leg. Simkovics L.

Gen *Tortella* (Lindb.) Limpr., 1888, nom. cons.

***Tortella tortuosa* (Hedw.) Limpr.** – (n. 5019) - ref.: *Index Musei Plantarum Cryptogamarum* [2]. 1803. Basionym: *Tortula tortuosa* Hedw.; *Species Muscorum Frondosorum* 124. 1801.; *Species Muscorum Frondosorum* 115. 1801.; sin.: *Barbula tortuosa* (Ehrh. ex Hedw.) F.Web. & D.Mohr ; *Tortula tortuosa* Hedw.; *Tortella tortuosa* (Ehrh. ex Hedw.) Limpr.; - Romania, Hunedoara, Luncani, Tăul Ursului Valley, 25.07.1872, leg. Simkovics L.

Gen *Pleurochaete* Lindb., 1864.

***Pleurochaete squarrosa* (Brid.) Lindb.** – (n. 5024) – ref.: *Öfversigt af Förhandlingar: Kongl. Svenska Vetenskaps-Akademien* 21: 253. 1864. Basionym: *Barbula squarrosa* Brid.; *Bryologia Universa* 1: 833. 1827.; sin.: *Barbula squarrosa*

Brid.; *Barbula squarrosa* de Not.; *Barbula riebeckii* Mull. Hal.; *Pleurochaete luteola* (Besch.) Ther.; *Tortella squarrosa* (Brid.) Limpr.; - Germany, Mainz, June 1871, leg. E. Zirkendrath.

Gen *Pottia* (Reichenb.) Furrn., 1829, nom. cons.

***Pottia bryoides* (Dicks) Mitt.** - (n. 4957) - ref.: *Ann. Mag. Nat. Hist.* 8: 311. 1851- [67]; *Pl. Crypt. Brit.* 4: 3. 1801; sin.; *Phascum bryoides* Dickson; *Tortula protobryoides* R.H. Zander; - Hungary, Pest, Buda (Bekas-Negyér), 23.03.1873, leg. Simkovics L.

***Pottia bryoides* (Dicks) Mitt.** - (n. 4959) - ref.: *Ann. Mag. Nat. Hist.* 8: 311. 1851- [67]; *Pl. Crypt. Brit.* 4: 3. 1801; sin.; *Phascum bryoides* Dickson; *Tortula protobryoides* R.H. Zander; - Hungary, Pest, Buda (Bekas-Negyér), 23.03.1873, leg. Simkovics L.

***Pottia cavifolia* var. *barbuloides* Durieu ex Schimp.** - (n. 5106) – ref.: *Corollarium Bryologiae Europaeae* 24. 1856.; Next Higher Taxon: *Pottia cavifolia* Ehrh. ex Furrn.; *Flora* 12(2) Ergänzungsblätter: 13. 1829.; sin.: *Pottia cavifolia* Ehrh. ex Furrn.; - Hungary, Pest, Buda-Eors, forest, 16.02.1873, leg. Simkovics L.

***Pottia cavifolia* var. *barbuloides* Durieu ex Schimp.** - (n. 5795) – ref.: *Corollarium Bryologiae Europaeae* 24. 1856.; Next Higher Taxon: *Pottia cavifolia* Ehrh. ex Furrn.; *Flora* 12(2) Ergänzungsblätter: 13. 1829.; sin.: *Pottia cavifolia* Ehrh. ex Furrn.; - Poland, Low Silezia, Wroclaw (Breslau), Broike, 04.04.1867, leg. undecipherable (Uhlworm?).

***Pottia truncata* (Hedw.) Bruch. & Schimp.** - (n. 5105) – ref.: *Bryol. Eur.* 2: 37. 1843; sin.: *Pottia truncata* Hedw.; *Pottia truncata* (Hedw.) Furrn.; - Hungary, Pest, Buda-Eors, forest, 16.02.1873, leg. Simkovics L.

Gen *Syntrichia* S.E. Bridel, 1801

***Syntrichia intermedia* Brid.** – (n. 5023) – ref.: *Bryologia Universa* 1: 586. 1826.; *Species Muscorum Frondosorum* 115. 1801.; sin.: *Barbula intermedia* (Brid.) A.W.H.Walther & Molendo; *Barbula intermedia* Wils. var. *rupestris*; *Barbula intermedia* var. *rupestris* Milde; *Barbula intermedia* var. *calva* (Durieu & Sagot) Milde; *Syntrichia intermedia* Brid.; *Tortula intermedia* (Brid.) De Not.; *Tortula*

*intermedia* var. *calva* (Durieu & Sagot) Wijk & Margad.; - Germany, Taunus, Hohenstein, 06.08.1870, leg. Zirkendrath – A. Digener.

***Syntrichia latifolia* (Bruch ex Hartm.) Huebener** – (n. 5018) – ref.: *Muscologia Germanica* 342. 1833. Basionym: *Tortula latifolia* Bruch ex Hartm.; *Handbok i Skandinaviens Flora, Andra Upplagen* 322. 1832.; *Journal für die Botanik* 1800(2): 299. 1801.; sin.: *Tortula latifolia* Bruch ex Hartm.; *Tortula latifolia* (Bruch.) Hartm. ; - Pofresladt, July 1864, leg. A. Gronwall.

Gen *Timmiella* (De Not.) Limpr., 1888

***Timmiella anomala* (Bruch & Schimp.) Limpr.** – (n. 5055) – ref.: *Die Laubmoose Deutschlands, Oesterreichs und der Schweiz* 1: 592. 1888. Basionym: *Barbula anomala* Bruch & Scimp.; *Bryologia Europaea* 2: 107. 169 (fasc. 13--15 Mon. 45. 29). 1842.; sin.: *Trichostomum anomalum* (Bruch & Schimp.) Schimp.; - Italy, Trentino-Alto/Sudtirolo, Merano (Meran), no date, leg. Prof. Dr. Milte (ex herbario A. Vigener).

Gen *Tortula* Hedw., 1801

***Tortula acaulon* (L. ex With.) R.H.Zander** – (n. 4956) - ref.: *Bulletin of the Buffalo Society of Natural Sciences* 32: 378. 1993. Basionym: *Phascum acaulon* With.; *A Systematic Arrangement of British Plants, Fourth Edition* 3: 768. 1801.; *Species Muscorum Frondosorum* 122. 1801.; sin.: *Phascum acaulon* With ; *Phascum cuspidatum* Hedw. (Sp. Musc. Frond.: 22, 1801); *Tortula atherodes* R. H. Zander; - Hungary, Pest, Budaors ( Kamara forest), 16.02.1873, leg. Simkovics L.

***Tortula acaulon* (L. ex With.) R. H. Zander** - (n. 4958) - ref.: *Bulletin of the Buffalo Society of Natural Sciences* 32: 378. 1993. Basionym: *Phascum acaulon* With.; *A Systematic Arrangement of British Plants, Fourth Edition* 3: 768. 1801.; *Species Muscorum Frondosorum* 122. 1801.; sin.: *Phascum acaulon* With ; *Phascum cuspidatum* Hedw. ( Sp. Musc. Frond.: 22, 1801); *Tortula atherodes* R.H.Zander; - Hungary, Pest, Buda (Farkasvolgy), 29.11.1873, leg. Simkovics L.

***Tortula eucalyptrata* Lindb.** – (n. 4979) – ref.: *Botaniska Notiser* 1886: 100. 1886. ; sin.: *Desmatodon latifolius* (Hedw.) Brid. (*Muscologia Recentiorum Supplementum* 4: 86. 1819 [1818].); *Desmatodon latifolius* var. *muticus* (Brid.) Brid.; *Desmatodon glacialis* Funck ex Brid.; *Dicranum latifolium* Hedw.; *Tortula euryphylla* R.H. Zander;

- Romania, Hunedoara, Mt. Retezat, July 1872, leg. Simkovics L.

***Tortula muralis* Hedw.** – (n. 5020) – ref.: *Species Muscorum Frondosorum* 123. 1801.; sin.: *Barbula muralis* Hedw.; *Barbula muralis* (Hedw.) Crome; *Barbula muralis* var. *incana* Bruch & Schimp.; *Barbula muralis* var. *rupestris* Schultz; *Tortula muralis* var. *incana* (Bruch & Schimp.) Wilson; *Tortula muralis* var. *rupestris* A.Chev.; - Switzerland, St. Gallen, Rehstem, December 1863, leg. Zollikofer.

***Tortula ruralis* (Hedw.) Gaert.** – (n. 5021) – ref.: *Oekonomisch-Technische Flora der Wetterau* 3(2): 91. 1802. Basionym: *Barbula ruralis* Hedw.; *Species Muscorum Frondosorum* 121. 1801; sin.: *Barbula ruralis* Hedw.; *Tortula intermedia* (Brid.) De Not.; *Tortula ruralis* (Hedw.) Gaert.; *Tortula ruraliformis* (Besch) Ingham; *Syntrichia intermedia* Brid.; *Syntrichia ruralis* (Hedw.) Weber & Mohr; - Switzerland, St. Gallen, Wartan, December 1863, leg. Zollikofer.

***Tortula subulata* Hedw.** – (n. 5014) – ref.: *Species Muscorum Frondosorum* 122. pl. 27: f. 1--3. 1801.; sin.: *Barbula arcuata* Griff.; *Barbula subulata* (Hedw.) P.Beauv.; *Barbula subulata* Broth.; *Barbula subulata* var. *mutica* Schimp.; *Barbula subulata* var. *angustata* (Schimp.) Lindb.; *Syntrichia subulata* (Hedw.) F.Web. & D.Mohr; *Tortula angustata* Lindb.; *Tortula subulata* var. *mutica* (Schimp.) Limpr.; - Switzerland, Cant. Appenzall, 02.08.1871, leg. Zollikofer.

***Tortula subulata* Hedw.** – (n. 5026) – ref.: *Species Muscorum Frondosorum* 122. pl. 27: f. 1--3. 1801. ; sin.: *Barbula arcuata* Griff., *Babula subulata* Broth.; *Barbula subulata* (Hedw.) P. Beauv.; *Barbula subulata* var. *mutica* Schimp.; *Syntrichia subulata* (Hedw.) F. Web. & D. Mohr; *Tortula subulata* var. *mutica* (Schimp.) Limpr.; - Romania, Arad, Săvârșin (Calvaria hills), 22.07.1872, leg. Simkovics L.

Gen. Weissa J. Hedwig, 1801

***Weissia condensa* (Voit.) Lindb.** – (n. 5042) – ref.: *Oefv. Foerh. Kongl. Svenska Vetensk-Akad.* 21: 230, 1863; Basionym: *Gymnostomum condensum* Voit; *Deutschlands Flora, Abtheilung II, Cryptogamie* 11: [ 7] ic.. 1811.; sin. *Gymnostomum tortile* Schawgr.; *Hymenostomum tortilis* (Schw.) Bruch. & Schimp.; *Weissia euteiches* R. H. Zander; *Weissia tortilis* (Schawaegr.) C. Mull; - Romania, Transylvania, on limestones, May 1871, leg. Barth.

***Weissia controversa* Hedw.** – (n. 5076) – ref.: *Spec. Musc. Frond.* : 67. 1801; sin.:

*Mollia viridula* Lindb.; *Simophyllum viridulum* Lindb.; *Tortella viridula* C.E.O.Jensen; *Weissia amblyodon* Brid.; *Weissia controversa* var. *amblyodon* (Brid.) Sendtn.; *Weissia controversa* var. *crispata* (Nees & Hornsch.) Nyholm; *Weissia controversa* var. *densifolia* (Bruch & Schimp.) Demaret; *Weissia crispata* (Nees & Hornsch.) Müll.Hal.; *Weissia crispula* var. *humilis* (Brid.) Huebener; *Weissia fallax* Sehm.; *Weissia graeca* Schiffn.; *Weissia humilis* Brid.; *Weissia microstoma* Hornsch. ex Nees & Hornsch.; *Weissia viridula* Hedw. ex Brid.; *Weissia viridula* var. *densifolia* Bruch & Schimp.; *Weissia viridula* var. *microdus* Brid. ; - Romania, Caraș-Severin, Orșova, 07.08.1872, leg. Simkovics L.

**Subclas. Bryidae**

**Superord. Bryanae**

Ord. Bryales

Fam. Aulacomniaceae Schimp.:

Gen. *Aulacomnium* Schwaegr., nom. cons.

***Aulacomnium palustre* (Hedw.) Schwägr.** – (n. 5091) – ref.: *Species Muscorum Frondosorum, Supplementum Tertium* 1(1): 216. 1827.; ITIS Taxonomic Serial Number 547555.; sin.: *Aulacomnium palustre* var. *fasciculare* (Funck ex Brid.) Bruch & Schimp.; *Aulacomnium palustre* var. *imbricatum* Bruch & Schimp.; *Aulacomnium palustre* var. *laxum* Hollick; *Aulacomnium palustre* var. *polycephalum* (Brid.) Huebener; *Aulacomnium palustre* var. *ramosum* Lindb.; *Bryum palustre* (Hedw.) Turner; *Gymnocybe palustris* (Hedw.) Fr.; *Gymnocybe palustris* var. *fascicularis* (Funck ex Brid.) Lindb.; *Gymnocybe palustris* var. *imbricata* (Bruch & Schimp.) Lindb.; *Gymnocybe palustris* var. *polycephalum* (Brid.) Delogne; *Hypnum elodes* F.Web. & D.Mohr; *Hypnum palustre* (Hedw.) F.Web. & D.Mohr; *Mnium fasciculare* Funck ex Brid.; *Mnium palustre* Hedw.; *Mnium polycephalum* Brid.; *Orthopyxis palustris* (Hedw.) P. Beauv.; *Sphaerocephalus palustris* (Hedw.) Lindb.; *Sphaerocephalus palustris* var. *imbricatus* (Bruch & Schimp.) H.Möller; *Sphaerocephalus palustris* var. *ramosus* (Lindb.) Lindb.; - unidentified location, no date, leg. Lojka.

Fam. Bartramiaceae Schwaegr. in Willd.:

Gen. *Bartramia* Hedw., nom. cons.



***Bartramia ithyphylla* Brid.** – (n. 5818) – ref.: *Muscologia Recentiorum* 2(3): 132. 1 f. 6. 1803.; *Species Muscorum Frondosorum* 164. 1801.; sin.: *Bartramia decidueaefolia* Broth. & M.Yasuda; - Romania, Hunedoara (Mt. Retezat), Clopotiva (Clopotiva Valley), 29.07.1872, leg. Simkovics L.

***Bartramia halleriana* Hedw.** – (n. 5819) – ref.: *Species Muscorum Frondosorum* 164. 1801.; ITIS Taxonomic Serial Number 547563; sin.: *Bartramia lateralis* Della Torre & Sarnth; *Bartramia halleri* Gray; *Bartramia norvegica* Lindb.; - Romania, Hunedoara (Mt. Retezat), Zănoaga, 30.07.1872, leg. Simkovics L.

***Bartramia pomiformis* Hedw.** – (n. 5825) – ref.: *Species Muscorum Frondosorum* 164. 1801.; sin.: *Bartramia circinnulata* C. Müll. & Kindb. in Mac. & Kindb.; *Bartramia crispa* Brid.; *Bartramia crispa* var. *pomiformis* (Hedw.) Lindb.; *Bartramia glaucoviridis* C. Müll & Kindb. in Mac. & Kindb.; *Bartramia pomiformis* var. *crispa* (Brid.) Bruch & Schimp. in B.S.G.; *Bartramia pomiformis* var. *elongata* Turn.; *Leptodontium norvegicum* Kaal. - Germany, Westfalia, Attendorn, 1867, leg. A. Vigener.

Gen. *Plagiopus* Bridel, 1826

***Plagiopus oederianus* (Sw.) H.A. Crum & L.E. Andeson** – (n. 5822) – ref.: *Mosses of Eastern North America* 1: 636. 1981.; basionym: *Batramia oederiana* Sw. (; *Journal für die Botanik* 1800(1&2): 180. 1800 [1802].); *Muscologia Recentiorum* 2(3): 135. pl. 2: f. 9. 1803.; ITIS Taxonomic Serial Number 16095; sin.: *Bartramia oederi* Sw.; *Bartramia oederi* Brid.; *Plagiopus oederi* (Brid.) Limpr.; *Plagiopus oederi* var. *alpina* (Schwaegr.) Torre & Sarnth. - Romania, Transylvania, Alba, Rimetea (Torocko), on limestone, July 1871, leg. Barth.

Gen. *Philonotis* Bridel, 1827

***Philonotis calcarea* (Bruch & Schimp.) Schimp.** - (n. 5099) – ref.: *Corollarium Bryologiae Europaeae* 86. 1856. basionym: *Bartramia calcarea* Bruch & Schimp.; *Bryologia Universa* 2: 15. 1827.; sin.: *Bartramia calcarea* Bruch & Schimp.; *Philonotis calcarea* ssp. *mollis* (Venturi) Kindb.; *Philonotis calcarea* var. *mollis* Venturi; *Philonotis calcarea* var. *seriatifolia* Schiffrn.; *Philonotis fontana* ssp. *calcarea* (Bruch & Schimp.) Boulay; *Philonotis fontana* var. *falcata* (Hook.) Brid.; *Philonotis mollis* Venturi; - no location, date and signature.

***Philonotis fontana* (L. ex Hedw.) Brid.** – (n. 5100) – ref.: *Bryologia Universa* 2: 18. 1827. ; Basionym: *Mnium fontanum* Hedw., *Species Muscorum Frondosorum* 195. 1801.; *Philonotis fontana* (Hedw.) Brid., (*Bryologia Universa* 2: 18. 1827.); sin.: *Bartramia fontana* (L. ex Hedw.) Turner; *Bartramia fontana* var. *alpina* (Brid.) P.Beauv.; *Bartramia fontana* var. *falcata* (Hook.) Bruch & Schimp.; *Bartramia fontana* var. *minor* Bals.-Criv. & De Not.; *Bartramia parvula* Norrl.; *Mnium fontanum* L. ex Hedw.; *Mnium fontanum* var. *alpinum* Brid.; *Philonotis adpressa* Fergusson; *Philonotis alpicola* var. *borealis* (I. Hagen) Podp.; *Philonotis borealis* (I.Hagen) Limpr.; *Philonotis fontana* var. *adpressa* (Fergusson) Limpr.; *Philonotis fontana* Brid. ; *Philonotis fontana* var. *capillaris* (Lindb.) Lindb.; *Philonotis fontana* var. *compacta* Schimp.; *Philonotis fontana* var. *parvula* (Norrl.) Lindb.; *Philonotis parvula* (Norrl.) Lindb. ex H.Philib.; *Philonotis seriata* var. *adpressa* (Fergusson) Bryhn; *Philonotis seriata* var. *compacta* (Schimp.) J. J. Amann; *Philonotis seriata* var. *mollis* (Schimp.) Loeske; *Philonotis tomentella* var. *borealis* (I.Hagen) Loeske; - Slovakia, Podhragy (the historic Hungary, Podhragy im Tranciner Komitat) , May 1868, leg. J. L. Holuby.

- Obs.: *Lebermoose der Flora von Ns.- Podhragy im Tranciner Komitat*, in “Plant Systematics and Evolution”, Springer, Wien, ISSN 0378-2697 (Print) 1615-6110 (Online), pg. 238-241.

Fam. *Bryaceae* Schwaegr. in Willd

Gen. *Bryum* Hedw.

***Bryum alpinum* With.** – (n. 5065) – ref.: *A Systematic Arrangment of British Plants, Fourth Edition* 3: 824. 1801.; sin.: *Bryum alpinum* ssp. *moldavicum* Podp.; *Bryum alpinum* ssp. *rivulare* (Arnell) Podp.; *Bryum alpinum* var. *meridionale* Schimp.; *Bryum alpinum* var. *moldavicum* (Podp.) Podp.; *Bryum alpinum* var. *virescens* Breidl.; *Bryum alpinum* var. *viride* Husn.; *Bryum geheebii* Müll.Hal.; *Bryum rivulare* Arnell; - Switzerland, Wallis, Oberwald, August 1873, leg. Bertram (Herbarium Bertram)

***Bryum atropurpureum* Wahlenb.** – (n. 5061) – ref.: *Flora* 12(2) Ergänzungsblätter: 56. 1829. ; basionym: *Bryum pulchellum* var. *atropurpureum* Wahleb.; *Flora Lapponica* 360. 1812.; sin.: *Bryum atropurpureum* x *murales* Zodda; *Bryum atropurpureum* for. *macrothecium* Besch. ; *Bryum atropurpureum* for. *tenellum*

Besch.; *Bryum atropurpureum* ssp. *arenarium* (Husn.) Kindb.; *Bryum atropurpureum* ssp. *murale* J.J. Amann; - Slovakia, Brezno District, Bystra. (Rolfaumzlen, Bhrista, - m. Gunar), May 1887, leg. G. Herpell.

***Bryum argenteum* Hedw.** – (n. 5062) – ref.: *Species Muscorum Frondosorum* 181. 1801.; sin.: *Bryum argenteum* var. *lanatum* (P.Beauv.) Hampe; *Bryum argenteum* var. *majus* Schwägr.; *Bryum lanatum* (P.Beauv.) Brid.; *Mnium argenteum* (Hedw.) Hoffm. ex P.Beauv.; *Mnium lanatum* P.Beauv.; - uncertain location (Robiwald an Storksens ?), no date and signature.

***Bryum caespiticium* L.** – (n. 5066) – ref.: *Spec. Musc. Frond.* 180., 1801; sin.: *Bryum arenicola* Cardot; *Bryum bakonyense* Latzel; *Bryum caespiticium* ssp. *culmannii* (Limpr.) Giacom.; *Bryum caespiticium* var. *macrocarpum* G.Roth; *Bryum caespiticium* var. *rupestre* Brid.; *Bryum caespiticium* var. *typicum* Podp.; *Bryum culmannii* Limpr.; *Bryum mosquense* Warnst.; *Bryum pseudokunzei* Limpr.; *Bryum radianii* Podp.; *Mnium caespiticium* (Hedw.) With.; - The Czech Republic, Karlovarsky kraj, Nova Role (Neurohlau, Neu Rohlau), 20.05.1866, leg. Alex. Marcus.

***Bryum capillare* Hedw.** – (n. 5063) – ref.: *Species Muscorum Frondosorum* 182. 1801.; sin.: *Bryum capillare* var. *barbatum* (C.E.O.Jensen) Podp.; *Bryum capillare* var. *carinthiacum* Bruch & Schimp.; *Bryum capillare* var. *cochlearifolium* Brid.; *Bryum capillare* var. *macrocarpum* Huebener; *Bryum capillare* var. *meridionale* Schimp.; *Bryum capillare* var. *norvegicum* (Kaurin & Arnell) I.Hagen; *Bryum capillare* var. *platyloma* (Schwägr.) Schimp.; *Bryum capillare* var. *rufifolium* (Dixon) Podp.; *Bryum capillare* var. *rufifolium* (Dixon) Podp.; *Bryum capillare* var. *tectorum* Warnst.; *Bryum capillare* var. *ustulatum* G.Roth; *Bryum carinthiacum* (Bruch & Schimp.) Kindb.; *Bryum cochlearifolium* (Brid.) Hartm.; *Bryum elegans* var. *barbatum* C.E.O.Jensen; *Bryum elegans* var. *norvegicum* Kaurin & Arnell; *Bryum kaernbachii* Müll.Hal.; *Bryum platyloma* Schwägr.; *Bryum rufifolium* Dixon; *Bryum validicostatum* Cardot & Dixon; *Mnium capillare* (Hedw.) With.; - Slovakia, Podhragy (the historic Hungary, Podhragy im Tranciner Komitat), no date, leg. J. L. Holuby.

***Bryum pallens* Sw. ex Anon.** – (n.5060) – ref.: *Montly Rev.* 34. 538. 1801; sin.: *Bryum betulinum* Kaurin; *Bryum dilatatum* Jørg.; *Bryum fallaciosum* Limpr.; *Bryum fallax* Milde; *Bryum finmarckianum* Kaurin; *Bryum lindbergii* Kaurin; *Bryum lundstroemii* Arnell; *Bryum lutescens* Bom.; *Bryum pallens* ssp. *betulinum* (Kaurin) Podp.; *Bryum pallens* ssp. *lindbergii* (Kaurin) Podp.; *Bryum pallens* ssp.

*pycnodermum* (Limpr.) Podp.; *Bryum pallens* var. *alpinum* (Bruch & Schimp.) Podp.; *Bryum pallens* var. *brevisetum* Lindb. & Arnell; *Bryum pallens* var. *fallax* Jur.; *Bryum pallens* var. *lutescens* (Broth.) C.E.O.Jensen; *Bryum pallens* var. *oenodes* Limpr.; *Bryum pycnodermum* Limpr.; *Bryum sinuosum* Ryan; *Bryum versisporum* Bom.; *Mnium pallens* (Sw. ex Anon.) P.Beauv.; *Pohlia pallens* (Sw. ex Anon.) J.J.Amann; *Plagiobryum pallens* (Sw. ex Anon.) Pedersen; - Danemark, Kajana, 1871, leg. Emfis Rackestrom.

***Bryum pallescens* Schleich.** – (n. 5064) – ref.: *Spec. Musc. Frond. Suppl.* 1: 107. 1816; sin.: *Bryum alandicum* Bom.; *Bryum arenarium* Müll.Hal.; *Plagiobryum pallescens* (Schleich. ex Schwägr.) Pedersen; *Bryum baenitzii* Müll.Hal.; *Bryum boreale* (F.Web. & D.Mohr) Funck; *Bryum calcicola* Arnell; *Bryum cirrhatum* Hoppe & Hornsch.; *Bryum crispulum* Hampe; *Bryum flexisetum* Lindb. & Arnell; *Bryum nigricans* Kaurin; *Bryum pumilum* Ryan; *Bryum saxatile* I.Hagen; *Bryum sulcatum* (Jørg.) J.J.Amann; *Bryum umbratum* I.Hagen; *Hypnum boreale* F.Web. & D.Mohr; - Switzerland, Grisons, Davos, 1857, leg. Cismas.

Gen *Rhodobryum* (Schimp.) Limpr.

***Rhodobryum roseum* (Hedw.) Limpr.** – (n. 5067) – ref.: *Die Laubmoose Deutschlands, Oesterreichs und der Schweiz* 2(20): 445. 1892.; basionym: *Mnium roseum* Hedw.; *Species Muscorum Frondosorum* 194. 1801.; (*Bryum* subg. *Rhodobryum* Schimp., *Syn. Musc. Eur.*: 381. Mar-Apr 1860). *Rhodobryum roseum*, *Fl. Uplandica* 1:86; sin.; *Bryum roseum* (Hedw.) Crome; *Bryum roseum* (Weis) Schreb.; *Mnium spathulatum* Horn.; *Mnium roseum* Hedw.; - unidentified location, no date and signature.

Fam. *Mniaceae* Schwaegr. in Willd.

Gen *Mnium* Hedw., 1801, nom. cons.

***Mnium cuspidatum* Hedw.** - (n. 5070) – ref.: *Species Muscorum Frondosorum* 192. pl. 45: f. 5--6. 1801. ; sin.: *Astrophyllum silvaticum* Lindb.; - Switzerland, St. Gallen, Altstätten, Juny 1863, leg. Zollikofer.

***Mnium cuspidatum* Hedw.** - (n. 5071) – ref.: *Species Muscorum Frondosorum* 192. pl. 45: f. 5--6. 1801.; sin.: *Astrophyllum silvaticum* Lindb.; – Romania, Alba, Valea Lungă (Langenthal), April 1871, leg. Barth.

***Mnium stellare* Hedw.** – (n. 5072) – ref.: *Spec. Musc. Frond.* 191., pl. 45: f. 1-4. 1801; sin.: *Mnium nipponense* Sakurai; *Mnium stellare* var. *brachycarpum* Myrn.; *Mnium stellare* var. *integerrimum* Corb.; *Mnium stellare* var. *lineare* Zmuda - Romania, Alba, Valea Lungă (Langenthal), May 1872, leg. Barth.

Gen *Pohlia* Hedw. 1801

***Pohlia cruda* (Hedw.) Lindb.** – (n. 5074) – ref.: *Musci Scandinavici* 18. 1879., basionym: *Mnium crudum* Hedw, *Species Muscorum Frondosorum* 189. 1801.; *Species Muscorum Frondosorum* 171. 1801.; sin.: *Bryum austrocrudum* Mull, *Bryum canadense* Kindb.; Hal.; *Bryum crudum* (L. ex Hedw.) Turner; *Bryum nitescens* Kindb.; *Hypnum crudum* (L. ex Hedw.) F. Web. & D.Mohr; *Mnium crudum* L. ex Hedw.; *Pohlia cruda* var. *alpina* (I.Hagen) H. Möller; *Pohlia cruda* var. *minor* (Bruch & Schimp.) Broth. & Saelán; *Pohlia cruda* var. *seriata* Arnell & C.E.O.Jensen; *Polla cruda* (L. ex Hedw.) Brid.; *Webera cruda* Hedw.; *Webera cruda* (L. ex Hedw.) Fümnr.; *Webera cruda* var. *alpina* I.Hagen; *Webera cruda* var. *minor* (Bruch & Schimp.) Schimp.; *Webera cruda* var. *seriata* (Arnell & C.E.O.Jensen) C.E.O.Jensen; *Webera cruda* var. *subglobosa* Schimp.; - no mention of location, date and signature.

***Pohlia nutans* (Hedw.) Lindb.** - (n. 5075) – ref. *Musci Scandinavici* 18. 1879., basionym: *Webera nutans* Hedw., *Species Muscorum Frondosorum* 168. 1801.; sin.: *Bryum afronutans* Mull, Hal.; *Bryum austronutans* Mull, Hal.; *Bryum basalticum* Warnst. & Geh.; *Bryum becarii* Mull, Hal; *Bryum compactum* Austin; *Webera nutans* Hedw.; *Webera montana* (Mull, Hel.) Paris; *W. pendula* Homs.; *W. longifolia* Jaeger; *W. eclonii* Mull, Hal.; - Slovenia, the Pivoli forest, no date and signature.

***Pohlia melanodon* (Brid.) A.J.Shaw** - (n. 5078) – ref. *Bryologist* 805.: 506. 1981; (Modern name: *Pohlia melanodon*), basionym: *Bryum melanodon* Brid; *Bryologia Universa* 1: 845. 1827.; *Species Muscorum Frondosorum* 171. 1801.; sin.: *Bryum carneum* L. ex Schimp.; *Bryum delicatulum* Hedw.; *Bryum melanodon* Brid.; *Hypnum carneum* F.Web. & D.Mohr; *Kaurinia carnea* Lindb.; *Mniobryum carneum* (L. ex Schimp.) Limpr.; *Mniobryum delicatulum* (Hedw.) Dixon; *Pohlia carnea* (L. ex Schimp.) Lindb.; *Pohlia delicatula* (Hedw.) Grout; *Webera carnea* (L.) Schimp.; *Webera carnea* L. ex Schimp.; *Webera delicatula* (Hedw.) C.E.O.Jensen; - Hungary, Baranya, Villany, 02.04.1873, leg. Simkovics L.

***Pohlia melanodon* (Brid.) A.J.Shaw** - (n. 5079) – ref.: (Modern name: *Pohlia melanodon*), *Bryologist* 805.: 506. 1981; basionym: *Bryum melanodon* Brid; *Bryologia Universa* 1: 845. 1827.; *Species Muscorum Frondosorum* 171. 1801.; sin.: *Bryum carneum* L. ex Schimp.; *Bryum delicatulum* Hedw.; *Bryum melanodon* Brid.; *Hypnum carneum* F.Web. & D.Mohr; *Kaurinia carnea* Lindb.; *Mniobryum carneum* (L. ex Schimp.) Limpr.; *Mniobryum delicatulum* (Hedw.) Dixon; *Pohlia carnea* (L. ex Schimp.) Lindb.; *Pohlia delicatula* (Hedw.) Grout; *Webera carnea* L. ex Schimp.; *Webera delicatula* (Hedw.) C.E.O.Jensen; - Hungary, Baranya, Villany, 02.04.1873, leg. Simkovics L.

***Pohlia ludwigii* (Spreng. ex Schwägr.) Broth.** - (n. 5085) – ref.: *Acta Soc. Sci. Fen*, 19: 27. 1892; basionym; *Bryum ludwigii* Spreng ex Scheagr., *Species Muscorum Frondosorum, Supplementum Primum* 2: 95. pl. 68. 1816.; *Species Muscorum Frondosorum* 171. 1801.; sin.: *Bryum ludwigii* Spreng. ex Schwägr.; *Bryum sudeticum* C.F.Ludw.; *Pohlia ludwigii* (Schwaegr.) Broth.; *Pohlia ludwigii* var. *latifolia* (Schimp.) Braithw.; *Pohlia sudetica* Podp.; *Mniobryum ludwigii* (Schwaegr.) Loeske; *Mniobryum sudeticum* Podp.; *Webera breidleri* Jur.; *Webera ludwigii* Schimp.; *Webera ludwigii* (Schwaegr.) Fumr.; *Webera ludwigii* var. *latifolia* Schimp.; *Webera sudetica* Giacom.; - Romania, Sibiu, Cărtișoara, August 1872, leg. Barth.

***Pohlia nutans* (Hedw.) Lindb.** – (n. 5088) – ref.: *Musci Scandinavici* 18. 1879. Basionym: *Webera nutans* Hedw.; *Species Muscorum Frondosorum* 168. 1801.; Fl. Flenn. 3: 84. 1886; sin.: *Bryum austrocrudum* Mull, *Bryum canadense* Kindb.; Hal.; *Bryum crudum* (L. ex Hedw.) Turner; *Bryum nitescens* Kindb.; *Hypnum crudum* (L. ex Hedw.) F. Web. & D.Mohr; *Mnium crudum* L. ex Hedw.; *Pohlia cruda* var. *alpina* (I.Hagen) H. Möller; *Pohlia cruda* var. *minor* (Bruch & Schimp.) Broth. & Saelán; *Pohlia cruda* var. *seriata* Arnell & C.E.O.Jensen; *Polla cruda* (L. ex Hedw.) Brid.; *Webera cruda* (L. ex Hedw.) Füllr.; *Webera cruda* var. *alpina* I.Hagen; *Webera cruda* var. *minor* (Bruch & Schimp.) Schimp.; *Webera cruda* var. *seriata* (Arnell & C.E.O.Jensen) C.E.O.Jensen; *Webera cruda* var. *subglobosa* Schimp.; *Webera nutans* var. *bicolor* (Hoppe & Hornsch.) Füllr.; - Romania, Hunedoara, Mt. Retezat, Zănoaga, 31.07.1872, leg. Simkovics L.

- Obs.: the label is not signed; the handwriting, date and location reveal the autor, that is, Simkovics L.



***Pohlia longicollis* (Hedw.) Lindb.** – (n. 5089) – ref.: ITIS Taxonomic Serial Number 16004.; sin.; *Bryum elongatum* ssp. *longicolle* (Hedw.) Kindb.; *Bryum elongatum* var. *alpinum* (Hoppe & Hornsch.) Bruch & Schimp.; *Bryum elongatum* var. *longicolle* (Hedw.) Hook. & Taylor; *Bryum longicollum* (Hedw.) Sm.; *Hypnum longicolle* (Hedw.) F.Web. & D.Mohr; *Webera alpina* Hoppe & Hornsch.; *Webera elongata* var. *alpina* (Hoppe & Hornsch.) Héríb.; *Webera longicollis* Hedw.; - Romania, Hunedoara, Mt. Retezat, Zănoaga, 30.07.1872, leg. Simkovics L.

Gen *Rhizomnium* (Broth.) T.J. Koponen, 1968

***Rhizomnium punctatum* (Hedw.) T. Kop.** – (n. 5069) – ref.: *Annales Botanici Fennici* 5: 143. 1968. ; basionym: *Mnium punctatum* Hedw., *Species Muscorum Frondosorum* 193. 1801.; sin.: *Mnium glabrescens* ssp. *chlorophyllosum* Kindb.; *Mnium punctatum* Hedw.; *Mnium punctatum* (Schreb.) Hedw.; *Rhizomnium punctatum* ssp. *chlorophyllosum* (Kindb.) T. Kop.; - Romania, Hunedoara, Luncani, Tăul Ursului Valley, 25.07.1872, leg. Simkovics L.

Ord. *Splachnales*

Fam. *Meesiaceae* Schimp.

Gen *Meesia* J. Hedwig, 1801

***Meesia uliginosa* Hedw.** – (n. 5068) /a, b)– ref.: *Species Muscorum Frondosorum* 173. 1801.; sin.: *Bryum trichodes* L. ex Sm.; *Ceratodon kinggeorgicus* Kanda; *Funaria obtusifolia* Weinm.; *Hypnum trichodes* F.Web.; *Meesia trichodes* Spruce ; *Meesia stricta* Brid.; *Meesia hymenostoma* Cardot & Broth.; *Meesia uliginosa* var. *alpina* (Funck ex Bruch) Hampe; – Austria, Schneeberg, (*Schneeberg* is a mountain belonging to the range of Northern Limestone Alps of Niederösterreich.); 09.09.1872, leg. Zirkendrath.

Fam. *Splachnaceae* Grev. & Arnott:

Gen. *Tetraplodon* Bruch & Scimp., in Bruch et al., 1844

***Tetraplodon urceolatus* (Hedw.) Bruch & Schimp.** – (n. 5054) – ref.: *Bryologia Europaea* 3: 217 (fasc. 23--24. Monogr. 7). 1844. Basionym: *Splachnum urceolatum* Hedw.; *Species Muscorum Frondosorum* 52. 1801.sin.: *Splachnum urceolatum* Hedw.; *Splachnum urceolatum* var. *fastigiatum* Wahlenb.; *Tetraplodon mnioides*



var. *cavifolius* Schimp; *Tetraplodon urceolatus* Bruch & Schimp. ; - Austria, Tirol, 25.07.1869, leg. undecipherable.

Ord. *Orthotrichales*

Fam. *Orthotrichaceae* Arnott

Subfam. *Orthotrichoideae*

Gen. *Orthotrichum* Hedw.

***Orthotrichum stramineum* Hornsch.** – (n. 5046) – ref.: *Bryologia Universa* 1: 789. 1827. ; *Species Muscorum Frondosorum* 162. 1801.; sin.: *Dorcadion stramineum* (Hornsch. ex Brid.) Lindb; *Orthotrichum callistomum* Fisch.- Oost. ex Bruch & Schimp.; *Orthotrichum praenubilum* Stirt; *Orthotrichum umbonatum* Brid.; - Romania, Transylvania, Valea Lungă (Langenthal), on the trees in the forest, June 1871, leg. Barth.

***Orthotrichum speciosum* Nees** – (n. 5047) – ref.: *Deutschlands Flora, Abtheilung II, Cryptogamie* 17: [ 5 ] ic??. 1819. ; *Species Muscorum Frondosorum* 162. 1801.; sin.: *Orthotrichum killasii* (Mull. Hal) Lindb; *Orthotrichum speciosum* ( Nees ) Lindb.; *Orthotrichum platyblepharis* Müll.Hal.; - Romania, Arad, Săvârșin (Calvaria hills), 22.07.1872, leg. Simkovics L.

***Orthotrichum affine* Schrad. ex Brid.** – (n. 5048) – ref.: *Muscologia Recentiorum* 2(2): 22. 1801. ; *Species Muscorum Frondosorum* 162. 1801.; sin.: *Orthotrichum affine* Brid. ; *Bryum affine* J.F. Gmel. ex Brid.; *Bryum semivacuum* Brid.; *Dorcadion affine* (Brid.) Lindb.; *Orthotrichum affine* Schwägr.; *Orthotrichum neglectum* Venturi ; *Orthotrichum octoblephare* Brid.; - Romania, Carș-Severin, Mehadia, 05.08.1872, leg. Simkovics L.

***Orthotrichum diaphanum* Brid.** – (n. 5050) – ref.: *Muscologia Recentiorum* 2(2): 29. 1801. ; *Species Muscorum Frondosorum* 162. 1801.; sin.: *Orthotrichum garrettii* Grout & Flow. in Grout; - Romania, Transylvania, Valea Lungă (Langenthal), March 1872, leg. Barth.

***Orthotrichum anomalum* Hedw.** – (n. 5052) – ref.: *Species Muscorum Frondosorum* 162. 1801. ; sin.: *Dorcadion anomalum* (Hedw.) Lindb.; *Orthotrichum anomalum* var. *americanum* Vent. in Mac. & Kindb.; *Orthotrichum anomalum* var. *saxatile* Milde; *Orthotrichum saxatile* Brid.; - Romania, Caraș Severin, Băile

Herculane, 03.08.1874, leg. Simkovics L.

***Orthotrichum striatum* Hedw.** – (n. 5053) – ref.: *Species Muscorum Frondosorum* 163. 1801.; sin.: *Dorcadion striatum* (Hedw.) Lindb.; *Orthotrichum leiocarpum* Bruch & Schimp.; *Orthotrichum leiocarpum* var. *rotae* De Not.; *Orthotrichum shawii* Wilson ex Schimp.; *Orthotrichum speciosum* var. *striatum* Grönvall; *Orthotrichum striatum* var. *rotae* (De Not.) I.Hagen; - Romania, Caraş-Severin, Mehadia, Domogled. 06.08.1871, leg. Not signed (Simkovics L. is handwriting)

Gen. *Ulota* Mohr

***Ulota crispa* (Hedw.) Brid.** – (n. 5083) – ref.: *Muscologia Recentiorum Supplementum* 4: 112. 1819 [1818]. Basionym: *Orthotrichum crispum* Hedw.; *Species Muscorum Frondosorum* 162. 1801.; sin.: *Orthotrichum crispulum* (Bruch) Hornsch. ex Bruch & Schimp.; *Orthotrichum crispum* Hedw.; *Orthotrichum intermedium* (Schimp.) Kindb. ex Paris; *Orthotrichum nicholsonii* (Culm.) Culm.; *Orthotrichum ulophyllum* Kindb.; *Ulota crispa* ssp. *crispula* (Bruch) Héríb.; *Ulota crispa* ssp. *intermedia* (Schimp.) Héríb.; *Ulota crispula* Bruch; *Ulota intermedia* Schimp.; *Ulota nicholsonii* Culm.; *Ulota ulophylla* Broth.; *Weissia crispula* (Bruch) Lindb.; - Poland, Low Silesia, Wroclav (Breslau), November 1865, leg. Dhernic et Reisnberg.

Subfam. *Zygodontoideae*

Gen. *Zygodon* Hook. & Tayl.

***Zygodon viridissimus* (Dicks.) Brid.** – (n. 5081) – ref.: *Bryologia Universa* 1: 592. 1826. Basionym: *Bryum viridissimum* Dicks.; *Fasciculus Plantarum Cryptogamicarum Britanniae* 4: 9. 10 f. 18. 1801; *Muscologia Britannica* 70. 1818.; sin.: *Bryum viridissimum* Dicks.; *Zygodon stirtonii* Schimp.; *Zygodon viridissimus* ssp. *dentatus* (Breidl. ex Limpr.) J.J.Amann; *Zygodon viridissimus* ssp. *euviridissimus* Malta; *Zygodon viridissimus* ssp. *stirtonii* (Schimp.) Dixon; - Germany, Wesbaden, Baden, 30.07.1874, leg. Ernst Zirkendrath.

**Superord. Hypnanae** W.R. Buck & B. Goffnet, 2000 ex W.R. Buck et al., 2005

Ord. *Hookeriales*

Fam. *Hookeriaceae* Schimp.

Gen *Hookeria* J. E. Sm., nom. cons.

***Hookeria lucens* (Hedw.) Sm.** – (n. 5103) – ref.: *Transactions of the Linnean Society of London* 9: 275. 1808. Basionym: *Hypnum lucens* Hedw., *Species Muscorum Frondosorum* 243. 1801.; *Transactions of the Linnean Society of London* 9: 275. 1808. ; sin.: *Hypnum lucens* Hedw.; *Pterygophyllum lucens* (Hedw.) Brid.; - Austria, Salsburg, no date, leg. Zwanziger.

Ord. *Hypnales*

Fam *Amblystegiaceae* G. Roth

Gen *Amblystegium* W.P. Schimper, in Bruch et al., 1853.

***Amblystegium serpens* (Hedw.) Schimp.** – (n. 5812) – ref.: *Bryologia Europaea* 6: 53. pl. 564 (fasc. 55–56 Monogr. 9. pl. 3). 1853. Basionym: *Hypnum serpens* Hedw.; *Species Muscorum Frondosorum* 268. 1801. sin.: *Amblystegiella yuennanensis* Broth.; *Amblystegium serpens* L.; *Amblystegium serpens* ssp. *versirete* (I.Hagen) C.E.O.Jensen ; *Amblystegium serpens* var. *majus* Buyss.; *Amblystegium serpens* var. *versirete* (I.Hagen) Gams; *Amblystegium versirete* I.Hagen; *Hypnum serpens* L. ex Hedw.; *Stereodon serpens* (L. ex Hedw.) Brid.; - Hungary, Szabolcs-Szatmar-Bereg, Nyiregyhaza, no date, leg. Simkovics L.

***Amblystegium irriguum* (Hook. & Wilson) Schimp** – (n. 5829) – ref.: *Bryologia Europaea* 6: 63 (fasc. 62–64. Monogr. Suppl. 1). 1855. Basionym: *Hypnum irriguum* Hook & Wilson; *Bryologia Britannicae* 361. 25p. 1855.; sin.: *Amblystegium irrigunsa* Schimp. ; *Amblystegium tenax* (Hedw.) C.E.O. Jensen; *Hygroamblystegium tenax* (Hedw.) Jenn.; - Romania, Hunedoara, Luncani, Tăul Ursului Valley, 25.07.1872, leg. Simkovics L.

Gen. *Leptodictyum* (Schimp.) Warnstorf, 1906

***Leptodictyum riparium* (Hedw.) Warnst.** – (n. 5808) - ref.: *Kryptogamenflora der Mark Brandenburg, Laubmoose* 878. 1906. Basionym: *Hypnum riparium* Hedw.; *Species Muscorum Frondosorum* 241. 1801. sin.: *Amblystegium brachipeltatum* Mull. Hal.; *Amblystegium leptophyllum* Schimp.; *Amblystegium riparium* (L. ex Hedw.) Schimp.; *Amblystegium riparium* var. *elongatum* Schimp.; *Amblystegium*

*riparium* var. *inundatum* Schimp.; *Amblystegium riparium* var. *longifolium* (Schultz) Schimp.; *Amblystegium riparium* var. *subsecundum* Schimp.; *Amblystegium riparium* (Hedw.) Schimp. var. *tenue*; *Amblystegium tenuifolium* (Warnst.) Broth.; *Amblystegium tenuisetum* Lindb; *Hypnum longifolium* Schultz; *Hypnum riparium* L. ex Hedw.; *Hypnum vacillans* (Sull.) Lesq. & James; *Leptodictyum riparium* var. *inundatum* (Schimp.) Warnst.; *Leptodictyum riparium* var. *longifolium* (Schultz) Warnst.; *Leptodictyum riparium* var. *subsecundum* (Schimp.) Warnst.; *Leptodictyum riparium* var. *vacillans* (Sull.) Podp.; *Stereodon riparius* (L. ex Hedw.) Mitt.; - Romania, Transylvania, Alba, Blaj (Blasendorf), May 1872, leg. Barth.

Fam. *Anomodontaceae* Kindb.

Gen *Anomodon* Hooker & Taylor, 1818

***Anomodon attenuatus* (Hedw.) Huebener** – (n. 5807) – ref.: *Muscologia Germanica* 562. 1833. Basionym: *Leskea attenuata* Hedw., *Species Muscorum Frondosorum* 230. 1801.; *Muscologia Britannica* 79. 1818.; sin.: *Anomodon attenuatus* Hartm.; *Anomodon attenuatus* var. *immersus* Ryan & I.Hagen; *Hypnum attenuatum* (Hedw.) Sm.; *Leskea attenuata* Hedw.; *Neckera attenuata* (Hedw.) Myrin; - Romania, Banat, Orșova, 07,08.1872, leg. Simkovics L.

***Anomodon longifolius* L.** – (n. 5810) – ref.: *Handbok i Skandinaviens Flora, Tredje Upplagen* 2: 300. 1838. ; - Basionim: *Pterigynandrum longifolium* Schleich. Ex Brid. (*Muscologia Recentiorum Supplementum* 4: 128. 1819 [1818].); sin.: *Anomodon armatus* Broth.; - Slovakia, the historical Hungary - Trancsiner Komitat, Podhragy, no date, leg. Holuby.

- Obs.: *Lebermoose der Flora von Ns. – Podhragy im Trancsiner Komitat*, in "Plant Systematic and Evolution", Springer Wien, ISSN 0378-2697 (Print) 1615-6110 (Online), pg. 238-241.

***Anomodon rostratus* (Hedw.) Schimp** – (n. 5809) – ref.: *Synopsis Muscorum Europaeorum* 488. 1860. Basionym: *Leskea rostrata* Hedw.; *Muscologia Britannica* 79. 1818.; sin.: *Anomodon rostratus* Schmp.; *Hypnum longifolium* (Brid.) Müll.Hal.; *Leskea longifolia* (Brid.) Spruce; *Pterigynandrum longifolium* Brid.; - Romania, Mt. Retezat, Clopotiva Valley, 29.07.1872, leg. Simkovics L.

***Anomodon viticulosus* (Hedw.) Hook. & Taylor** – (n. 5811) – ref.: *Muscologia*

*Britannica* 79. 1818. Basionym: *Neckera viticulosa* Hedw.; *Species Muscorum Frondosorum* 209. 48 f. 4--5. 1801.; *Muscologia Britannica* 79. 1818.; sin.: *Anomodon viticulosus* L.; *Hypnum viticulosum* (Hedw.) L. ex With.; *Leskea viticulosa* (Hedw.) Spruce; *Neckera viticulosa* Hedw.; -Hungary, Pest, Buda (Ianoshegy), on dolomites, 03.03.1872, leg. Simkovics L.

Fam. *Brachytheciaceae* G. Roth

Gen. *Brachythecium* Schimp., 1853

***Brachythecium campestre* (Müll. Hal.) Schimp.** – (n. 5821) – ref.: *Bryologia Europaea* 6: 16. 545 (fasc. 52--56 Monogr. 12. 11). 1853. Basionym: *Hypnum rutabulum* var. *campestre* Müll.Hal., *Synopsis Muscorum Frondosorum omnium hucusque Cognitorum* 2: 368. 1851.; *Bryologia Europaea* 6: 5 (fasc. 52--56. Mon. 1.). 1853. ; sin.: *Brachythecium arnoldiarum* Molendo; *Brachythecium campestre* Br. & Schimp.; *Brachythecium schimperi* h. Kingr.; *Brachythecium subalbicans* De Not.; *Chamberlainia campestris* (Müll.Hal.) H.Rob.; *Hypnum affine* Bruch; *Hypnum campestre* (Müll.Hal.) Mitt.; *Hypnum rutabulum* var. *campestre* Müll.Hal.; -Hungary, Szabolcs-Szatmar-Bereg, Nyiregyhaza, on dry sands, wood paths, 25.04.1874, leg. Simkovics L.

***Brachythecium glareosum* (Bruch ex Spruce) Schimp.** – (n. 5817) – ref.: *Bryologia Europaea* 6: 23. 552 (fasc. 52--56 Mon. 19. 18). 1853. Basionym: *Hypnum glareosum* Bruch ex Spruce; *Musci Pyrenaici* 29. 1847.; *Bryologia Europaea* 6: 5 (fasc. 52--56. Mon. 1.). 1853. ; sin.: *Brachythecium albicans* var. *alpinum* De Not.; *Brachythecium alpinum* (De Not.) Anzi ; *Brachythecium glareosum* var. *alpinum* (De Not.) Limpr.; *Brachythecium glareosum* var. *rugulosum* (Pfeff.) Lindb.; *Brachythecium tauriscorum* Molendo ; *Brachythecium tauriscorum* var. *rugulosum* Pfeff.; *Hypnum glareosum* Bruch ex Spruce; - Romania, Hunedoara, Mt. Rusca, 24.07.1872, leg. Simkovics L.

***Brachythecium populeum* (Hedw.) Schimp.** – (n. 5813) – ref.: *Bryologia Europaea* 6: 7. 535 (fasc. 52--56 Mon. 3. 1). 1853. Basionym: *Hypnum populeum* Hedw., *Species Muscorum Frondosorum* 270. 70 f. 1--6. 1801.; sin.: *Brachythecium amoenum* Milde; *Brachythecium populeum* var. *amoenum* (Milde) Limpr.; *Brachythecium populeum* var. *majus* Schimp. in B.S.G.; *Brachythecium populeum* var. *ovatum* Grout; *Brachythecium populeum* var. *rufescens* Schimp. in B.S.G.; *Brachythecium viride* Brockm.; *Hypnum populeum* Hedw.; *Hypnum populeum* var.

*majus* Hartm.; *Hypnum viride* Lam. ex Boucher; - Switzerland, St. Gallen, October 1864, leg. Zollikofer.

***Brachythecium rutabulum* (Hedw.) Schimp.** – (n. 5824) – ref.: *Bryologia Europaea* 6: 15. pl. 543 (fasc. 52--56 Monogr. 11. pl. 9). 1853. Basionym: *Hypnum rutabulum* Hedw., *Species Muscorum Frondosorum* 276. 1801.; *Bryologia Europaea* 6: 5 (fasc. 52--56. Mon. 1.). 1853.; sin.: *Brachythecium argyrocaulon* Dusen; *Brachythecium espinosae* Herzog; *Brachythecium hirtipes* (Mull. Hal.) Schimp; *Brachythecium flavescens* Kindb. ex Paris; *Brachythecium rivulare* ssp. *flavescens* (Schimp.) Kindb.; *Brachythecium rutabulum* var. *cavifolium* (Lindb.) Paris; *Brachythecium rutabulum* var. *explanatum* (Brid.) Brockm.; *Brachythecium serrulatum* (Hedw.) H.Rob.; *Brachythecium starkei* var. *explanatum* (Brid.) Mönk.; *Hypnum flavescens* Brid.; *Hypnum rutabulum* L. ex Hedw.; *Hypnum rutabulum* var. *cavifolium* Lindb.; *Hypnum rutabulum* var. *explanatum* Brid.; *Hypnum rutabulum* var. *flavescens* Brid. – incert date (Maldey, Malla ab Rabfhuin ?), no date and signature.

***Brachythecium salebrosum* (Hoffm. ex F. Weber & D. Mohr) Schimp.** – (n. 5813 /a) – ref.: *Bryologia Europaea* 6: 20 (fasc. 52--54. Monogr. 16.). 1853. Basionym: *Hypnum salebrosum* Hoffm. ex F.Web. & D.Mohr; *Botanisches Taschenbuch* 312. 1807.; sin.: *Brachythecium ligusticum* De Not.; *Brachythecium plumosum* Huds. ex C.E.O.Jensen; *Brachythecium salebrasum* ssp. *turgidum* (Hartm.) Hartm.; *Brachythecium salebrosum* var. *arcticum* Berggr.; *Brachythecium salebrosum* var. *flaccidum* Schimp.; *Brachythecium salebrosum* var. *gracile* (Hartm.) Paris; *Brachythecium salebrosum* var. *homomallum* G.Roth; *Brachythecium salebrosum* var. *palustre* Schimp.; *Brachythecium salebrosum* var. *palustre* Schimp.; *Brachythecium salebrosum* var. *robustum* Warnst.; *Brachythecium salebrosum* var. *turgidum* (Hartm.) J.E.Zett.; *Brachythecium salebrosum* var. *vineale* (Milde) Podp.; *Chamberlainia salebrosa* (Hoffm. ex F.Web. & D.Mohr) H.Rob.; *Hypnum salebrosum* Hoffm. ex F.Web. & D.Mohr; *Hypnum salebrosum* var. *gracile* Hartm.; - Switzerland, St. Gallen, October 1864, leg. Zollikofer.

***Brachythecium velutinum* (L. ex Hedw.) Schimp.** – (n. 5823) – ref.: *Bryologia Europaea* 6: 9 (fasc. 52--54. Monogr. 5). 1853. Basionym: *Hypnum velutinum* Hedw., *Species Muscorum Frondosorum* 272. 1801.; *Bryologia Europaea* 6: 5 (fasc. 52--56. Mon. 1.). 1853.; sin.: *Brachythecium condensatum* (Schimp.) Loeske & Herzog; *Brachythecium ruebelii* Herzog; *Brachythecium salicinum* Schimp.; *Brachythecium vagans* Milde; *Brachythecium validum* (C.E.O.Jensen) Broth.;



*Brachythecium velutinum* var. *condensatum* Schimp.; *Brachythecium velutinum* var. *intricatum* (Schreb. ex Hedw.) Schimp.; *Brachythecium velutinum* (L. ex Hedw.) Schimp. var. *intricatum*; - Hungary, Pest, Buda, 01.04.1871, leg. Simkovics L.

***Brachythecium velutinum* (L. ex Hedw.) Schimp.** – (n. 5827) – ref.: *Bryologia Europaea* 6: 9 (fasc. 52–54. Monogr. 5). 1853. Basionym: *Hypnum velutinum* Hedw., *Species Muscorum Frondosorum* 272. 1801.; *Bryologia Europaea* 6: 5 (fasc. 52–56. Mon. 1.). 1853.; sin.; *Brachythecium condensatum* (Schimp.) Loeske & Herzog; *Brachythecium ruebelii* Herzog; *Brachythecium salicinum* Schimp.; *Brachythecium vagans* Milde; *Brachythecium validum* (C.E.O.Jensen) Broth.; *Brachythecium velutinum* Br. et Schimp.; *Brachythecium velutinum* var. *condensatum* Schimp.; *Brachythecium velutinum* var. *intricatum* (Schreb. ex Hedw.) Schimp.; *Brachythecium velutinum* var. *polygamum* Ryan ex Kaal.; *Brachythecium velutinum* var. *salicinum* (Schimp.) Mönk.; *Brachythecium velutinum* var. *vagans* (Milde) Warnst.; *Brachythecium velutinum* var. *validum* (C.E.O.Jensen) C.E.O.Jensen; *Chamberlainia velutina* (L. ex Hedw.) H.Rob.; *Hypnum intricatum* Schreb. ex Hedw.; *Hypnum validum* C.E.O.Jensen; *Hypnum velutinum* L. ex Hedw.; *Hypnum velutinum* var. *intricatum* (Schreb. ex Hedw.) Brid.; - Romania, Transylvania, Alba, Valea Lungă, (Langenthal), 1872, leg. Barth.

Gen *Cirriphyllum* Grout., 1898

***Cirriphyllum tommasinii* (Sendtn. ex Boulay) Grout** – (n. 5806) – ref.: *Bulletin of the Torrey Botanical Club* 25: 226. 1898. Basionym: *Hypnum tommasinii* Sendtn. ex Boulay; *Flore Cryptogamique de l'Est, Muscinées* 225. 1872.; sin.: *Brachythecium vaucheri* Kindb.; *Cirriphyllum tenuinerve* (Lindb.) Wijk & Margad.; *Cirriphyllum vaucheri* Loeske & M.Fleisch.; *Eurhynchium tommasinii* (Sendtn. ex Boulay) Molendo; *Eurhynchium vaucheri* Schimp.; *Hypnum tenuinerve* Lindb.; *Hypnum tommasinii* Sendtn. ex Boulay; *Hypnum vaucheri* Schimp.; - Germany, no date. leg. undecipherable.

Gen. *Eurhynchium* Bruch & W.P. Schimper, in Bruch et al., 1854

***Eurhynchium praelongum* (Hedw.) Schimp.** – (n. 5800) – ref.: *Bryologia Europaea* 5: 224 (fasc. 57–61. Monogr. 8). 1854. Basionym: *Hypnum praelongum* Hedw.; *Species Muscorum Frondosorum* 258. 1801.; sin.: *Bryhnia britoniae* (Grout.) H. Rob.; *Bryhnia stokesii* (Turner) H.Rob.; *Campylium serratum* Cardot & G.Winter;



*Eurhynchium britoniae* Grout.; *Eurhynchium distans* Bryhn; *Eurhynchium hians* var. *rigidum* (Boulay) Düll; *Eurhynchium praelongum* B. E. ; *Eurhynchium praelongum* var. *distans* (Bryhn) Nyholm; *Eurhynchium praelongum* var. *rigidum* (Boulay) Husn.; *Eurhynchium praelongum* var. *stokesii* (Turner) Dixon; *Eurhynchium stokesii* (Turner) Schimp.; *Eurhynchium swartzii* var. *distans* (Bryhn) C.E.O.Jensen; *Eurhynchium swartzii* var. *rigidum* (Boulay) Thér.; *Hypnum distans* Lindb.; *Hypnum praelongum* L. ex Hedw.; *Hypnum praelongum* var. *rigidum* Boulay; *Hypnum stokesii* Turner; *Kindbergia praelonga* (L. ex Hedw.) Ochyra; *Oxyrrhynchium praelongum* (L. ex Hedw.) Warnst.; *Oxyrrhynchium praelongum* var. *stokesii* (Turner) Podp.; *Oxyrrhynchium serratum* (Cardot & G.Winter) F.Koppe; *Stokesiella praelonga* (L. ex Hedw.) H.Rob.; - Germany, Turingia, Eisenach, Anathol, 1872, leg. Bertram.

***Eurhynchium striatum* (Schreb. ex Hedw.) Schimp.** – (n. 5802) – ref.: *Corollarium Bryologiae Europaeae* 119. 1856. Basionym: *Hypnum striatum* Schreb. ex Hedw.; *Species Muscorum Frondosorum* 275. 1801. sin.: *Brachythecium angustirete* Broth.; *Eurhynchium longirostre* Schimp.; *Eurhynchium magnusii* (G.Winter) Pilous; *Eurhynchium striatum* Schimp. ; *Eurhynchium striatum* ssp. *magnusii* (G.Winter) H.K.G.Paul; *Eurhynchium striatum* var. *magnusii* G.Winter; *Hypnum longirostrum* Ehrh. ex Brid.; *Hypnum striatum* Schreb. ex Hedw.; - Slovakia, Eperjes, Czemetete, Myi (no year mentioned), leg. Hazslinszky.

***Eurhynchium strigosum* var. *barnesii* Renaud & Cardot.** – (n. 5804) – ref.: *Revue Bryologique* 15: 72. 1888.; *Bryologia Europaea* 5: 218 (fasc. 57--61. Monogr. 2). 1854.; sin.: *Eurhynchium strigosum* (Hoffm. ex F. Weber & D. Mohr) Schimp.; *Eurhynchium strigosum* Hoffman; - Serbia, Voievodina, Juzni Banat, Vrsac (Verschetz, Varsset, Versec), 28.02.1874, leg. Simkovics L.

Gen. *Homalothecium* W.P. Schimper, in Bruch et al., 1851

***Homalothecium philippeanum* (Spruce) Schimp.** – (n. 5851) – ref.: *Bryologia Europaea* 5: 93 (fasc. 46--47. Monogr. 3). 1851. Basionym: *Isothecium philippeanum* Spruce; *Musci Pyrenaici* 77. 1847. sin.: *Camptothecium philippeanum* (Spruce) Kindb.; *Homalothecium algerianum* Besch.; *Homalothecium aristatum* Lazarenko; *Homalothecium philippeanum* W. P. Scinger in BSG, 1851; *Homalothecium philippeanum* (Spruce) B., S & G.; - no date, leg. Holuby.

Gen *Isothecium* Bridel, 1827

***Isothecium myosuroides* Brid.** – (n. 5805) – ref.: *Bryologia Universa* 2: 369. 1827. sin.: *Eurhynchium myosuroides* (Brid.) Schimp.; *Eurhynchium myosuroides* var. *brachythecioides* Dixon; *Hypnum curvatum* Sw. ex Dicks.; *Hypnum myosuroides* L. ex Brid.; *Isothecium bornmuelleri* Schiffn.; *Isothecium eumyosuroides* Dixon; *Isothecium myosuroides* ssp. *brevinerve* Kindb.; *Isothecium myurellum* Kindb.; *Isothecium stoloniferum* Hook. ex Brid.; *Isothecium tenuinerve* Kindb.; *Leskea curvata* Voit; *Leskea myosuroides* (Brid.) Ångstr.; *Pseudisothecium myosuroides* (Brid.) Grout; *Pseudisothecium stoloniferum* (Hook. ex Brid.) Grout; - Germany, Turingia, Eisenach, no date, leg. Dr. Uhlworm.

Fam. *Campyliaceae* (Kanda, 1975 [1976]) W.R. Buck & B. Goffinet, in A.J. Shaw & B. Goffinet, eds., 2000

Gen. *Anacamptodon* S.E. Bridel, 1819

***Anacamptodon splachnoides* (Froel. ex Brid.) Brid.** – (n. 5832) – ref.: sin.: *Muscologia Recentiorum Supplementum* 4: 136. 1819 [1818]. Basionym: *Orthotrichum splachnoides* Froel. ex Brid.; *Muscologia Recentiorum Supplementum* 2: 4. 1812.; sin.: *Anacamptodon splachnoides* Brid. ; *Campylodontium hypnoides* Schwagr.; - Romania, Banat, Mt. Rusca, 24.07.1872, leg. Simkovics L.

Gen. *Hygrohypnum* Lindberg, 1872

***Hygrohypnum molle* (Hedw.) Loeske** – (n. 5855) – ref.: *Moosflora der Harzes* 320. 1903. Basionym: *Hypnum molle* Hedw.; *Spec. Musc. Frond.*: 273, t. 70, f. 7-10, 1801; sin.: *Amblystegium molle* (Hedw.) Lindb.; *Hygrohypnum dilatatum* (Wilson) Loeske; *Hypnum dilatatum* Wilson; *Hypnum molle* Hedw., *Hypnum molle* Dicks.; *Hypnum rupestre* Schl. ex Spreng.; - Romania, Hunedoara, Zănoaga, 30.07.1872, leg. Simkovics L.

Gen. *Sanionia* Loeske

***Sanionia uncinata* (Hedw.) Loeske** – (n. 5856) – ref.: *Hedwigia* 46: 309. 1907. Basionym: *Hypnum uncinatum* Hdw., *Species Muscorum Frondosorum* 289. 1801. ; sin.: *Amblystegium uncinatum* (Hedw.) De Not.; *Drepanocladus uncinatus* (Hedw.) Warnst.; *Harpidium uncinatum* (Hedw.) C.E.O.Jensen; *Hypnum aduncum* L. ex Lindb.; *Hypnum contiguum* Nees; *Hypnum uncinatum* Hedw.; *Sanionia uncinata* var. *abbreviatus* (Schimp.) Warnst.; *Sanionia uncinata* var. *contiguum*

(Nees) J.J. Amann; *Stereodon uncinatus* (Hedw.) Brid.; - Romania, Hunedoara, Zănoaga, 30.07.1872, leg. Simkovics L.

Gen. *Warnstorfia* Loeske

***Warnstorfia fluitans* (Hedwig) Loeske in E. Nitzsch** – (n. 5838) – ref.: *Hedwigia*. 46: VI. 1907; basionym: *Hypnum fluitans* Hedwig, *Sp. Musc.* 296. 1801; sin.: *Amblystegium andinum* Mitt.; *Drepanocladus berggreni* (Lange & C.E.O. Jensen) G. Roth.; *Drepanocladus fluitans* (Hedw.) Warnstorff; *Drepanocladus fluitans* var. *falcatus* (C.E.O. Jensen) G. Roth.; *Drepanocladus fluitans* var. *setiformis* (Renauld) Monkemeyer; *Drepanocladus fluitans* var. *uncatus* H.A. Crum, Steere, & L.E. Anderson; *Hypnum fluitans* Hedwig; *Warnstorfia fluitans* var. *falcata* (C.E.O. Jensen) H.A. Crum, & L.E. Anderson; - Romania, Banat, Mt. Rusca, 24.07.1872, leg. Simkovics L.

Fam. *Climaciaceae* Kindb.

Gen. *Climacium* Web. & Mohr, 1804

***Climacium dendroides* (Hedw.) F. Weber & D. Mohr** – (n. 5029) – ref.: *Naturhistorische Reise durch einen Theil Schwedens* 96. 1804. Basionym: *Leskea dendroides* Hedw.; *Species Muscorum Frondosorum* 228. 1801.; sin.: *Amblystegium solitarium* H. Möller; *Calliargon solitarium* (H. Möller) Broth.; *Climacium dendroides* var. *fluitans* Huebener; *Climacium dendroides* var. *inundatum* Poelt; *Climacium dendroides* var. *tumidum* Mosén; *Leskea dendroides* Hedw.; - Romania, Cluj, Cluj-Napoca (Hoia forest) , no date and signature.

Fam. *Cratoneuraceae* Monk.

Gen. *Cratoneuron* (Sull.) Spruce , 1867

***Cratoneuron filicinum* (Hedw.) Spruce** – (n. 5837) – ref.: *Catalogus Muscorum fere Omnium quos in Terris Amazonicus et Andinis, per Annos 1849--1860, legit Ricardus Spruceus* 21. 1867. Basionym: *Hypnum filicinum* Hedw.; *Species Muscorum Frondosorum* 285. 76 f. 5-10. 1801.; sin.: *Amblystegium fallax* (Brid.) Milde; *Amblystegium filicinum* (L. ex Hedw.) De Not.; *Amblystegium filicinum* ssp. *fallax* (Brid.) Lindb.; *Cratoneuron filicinum* ssp. *fallax* (Brid.) Giacom.; *Harpidium filicinum* (Schimp.) Bock; *Hygroamblystegium fallax* (Brid.) Loeske;

*Hygroamblystegium filicinum* (L. ex Hedw.) Loeske; *Hypnum fallax* Brid.; *Hypnum filicinum* L. ex Hedw.; *Hypnum vallis-clausae* var. *fallax* (Brid.) Boulay; *Stereodon filicinus* (L. ex Hedw.) Mitt.; - Romania, Hunedoara, Mt. Retezat, Clopotiva (Clopotiva Valley), 21.07.1872, leg. Simkovics L.

Fam. *Entodontaceae*

Gen *Entodon* Muller Hal., 1845

***Entodon concinnus* (De Not.) Paris** – (n. 4970) – ref.: *Index Bryologicus, editio secunda* 2: 130. 1904. Basionym: *Hypnum concinnum* De Not.; *Memorie della Reale Accademia delle Scienze di Torino* 39: 220. 1836.; *Linnaea* 18: 704. 1845.; sin.: *Cylindrothecium concinnum* (De Not.) Schimp.; *Cylindrothecium montagnei* Schimp.; *Cylindrothecium conciseum* Krom.; *Entodon orthocarpus* (Brid.) Lindb.; *Hypnum concinnum* De Not.; *Hypnum montagnei* Hartm.; *Hypnum orthocarpon* Bach.Pyl.; *Pleurozium schreberi* var. *orthocarpus* Brid.; - Switzerland, Canton Ifrel, no date, leg. Krom.

Fam. *Fontinalaceae* Schimp.

Gen. *Dichelyma* Myrin, 1833

***Dichelyma falcatum* (Hedw.) Myrin** – (n. 4984) – ref.: Kongl. Vetenskaps Academiens Handlingar 1832: 274. 1833. Basionym: *Fontinalis falcata* Hedw.; *Species Muscorum Frondosorum* 299. 1801. sin.: *Fontinalis falcata* Hedw.; - Romania, Hunedoara, Mt. Retezat, Zănoaga, 30.07.1872, leg. Simkovics L.

Fam. *Helodiaceae* (M. Fleisch.) Ochyra

Gen *Palustriella* Ochyra

***Palustriella commutata* (Hedw.) Ochyra** – (n. 5841) – ref.: *Journal of the Hattori Botanical Laboratory* 67: 224. 1989. Basionym: *Hypnum commutatum* Hedw.; *Species Muscorum Frondosorum* 284. 1801. sin.: *Cratoneuron commutatum* (Hedw.) G. Roth; *Cratoneuron commutatum* var. *falcatum* (Brid.) Monk.; *Cratoneuron falcatum* (Hedw.) G. Roth; *Cratoneuron glaucum* Broth.; *Hypnum commutatum* Hedw. ; - Romania, Hunedoara, Luncani, (Tăul Ursului Valley), 25.07.1872, leg. Simkovics L.

Fam. *Hypnaceae* Schimp.

Gen *Calliergonella* Loeske, 1911

***Calliergonella cuspidata* (L. ex Hedw.) Loeske** – (n. 5842) – ref.: *Hedwigia* 50: 248. 1911. Basionym: *Hypnum cuspidatum* Hedw.; *Species Muscorum Frondosorum* 254. 1801. ; sin. : *Acrocladium cuspidatum* (L. ex Hedw.) Lindb.; *Amblystegium cuspidatum* (Hedw.) Mitt.; *Calliergon cuspidatum* (L. ex Hedw.) Lindb.; *Hypnum cuspidatum* L. ex Hedw.; - Romania, Arad, Radna (Șoimus Fortress), 21.07.1872, leg. Simkovics L.

Gen *Ctenidium* (W.P. Schimper) Mitten, 1869

***Ctenidium molluscum* (Hedw.) Mitt.** – (n. 5843) – ref.: *Journal of the Linnean Society, Botany* 12: 509. 1869. Basionym: *Hypnum molluscum* Hedw.; *Species Muscorum Frondosorum* 289. 1801.; sin.: *Hypnum balearicum* Dixon; *Hypnum molluscum* Hedw.; *Stereodon molluscus* (Hedw.) Mitt.; - Romania, Hunedoara, Rusca, Lunca Valley, 25.07.1872, leg. Simkovics L.

Gen *Herzogiella* V.F. Brotherus, 1925

***Herzogiella seligeri* (Brid.) Z.Iwats.** – (n. 5798) – ref.: *Journal of the Hattori Botanical Laboratory* 33: 374. 1970.; sin.: *Plagiothecium silesiacum* (F.Web. & D.Mohr) Schimp. [*Bryologia Europaea* 5: 190. 500 (fasc. 48 Mon. 12. 7.). 1852.]; *Dolichotheca seligeri* (Brid.) Loeske; *Dolichotheca silesiaca* (F.Web. & D.Mohr) M.Fleisch.; *Hypnum repens* (Brid.) Pollich ex Lam. & DC.; *Hypnum seligeri* (Brid.) Müll.Hal.; *Hypnum serpens* var. *repens* Brid.; *Hypnum silesiacum* F.Web. & D.Mohr; *Hypnum silesianum* P.Beauv.; *Hypnum trichodes* Haller; *Isopterygium repens* (Brid.) Lindb. ex Delogne; *Isopterygium seligeri* (Brid.) Dixon; *Isopterygium silesiacum* (F.Web. & D.Mohr) Kindb.; *Leskea seligeri* Brid.; *Plagiothecium repens* Lindb.; *Plagiothecium silesiacum* (P. Beauv.) B.S.G; *Sharpiella seligeri* (Brid.) Z.Iwats.; *Stereodon silesiacus* (F.Web. & D.Mohr) Brid.; - Romania, Hunedoara, Mt Rusca, 24.07.1872, leg. Simkovics L.

Gen *Hypnum* Hedw., 1801, nom. cons.

***Hypnum cupressiforme* Hedw.** – (n. 5836) – ref.: *Species Muscorum Frondosorum*

291. 1801.; sin.: *Cupressina cupresiformis* (Hedw.) Mull. Hal.; *Hypnum dicladum* Mull. Hal.; *Hypnum drepanophyllum* Mull. Hal.; *Hypnum filare* (C. Müll.) Par.; - Hungary, Pest, Buda Eors, forest, 16.02.1873, leg. Simkovics L.

***Hypnum bambergeri* Schimp.** – (n. 5839) – ref.: *Synopsis Muscorum Europaeorum, Editio Secunda* 698. 1860. ; sin.: *Hypnum condensatum* Schimp.; *Hypnum flexuosum* Berggr.; *Stereodon bambergeri* var. *flexuosum* Lindb.; - Austria, Raxalpe, May 1873, leg E. Zirkendrath.

***Hypnum aduncum* var. *pungens* (H. Müll. ex Milde) Renaud in Husnot** – (n. 5840) – ref.: *Spec. Musc. Frond.* 236. 1801. ; sin.: *Hypnum aduncum* L.; - Romania, Hunedoara, Luncani, (Tăul Ursului Valley), 24.07.1872, leg. Simkovics L.

***Hypnum incurvatum* Schrad. ex Brid.** – (n. 5844) – ref.: *Muscologia Recentiorum* 2(2): 119. 1801.; *Species Muscorum Frondosorum* 236. 1801. ; sin.: *Ambystegium repens* Schimp. var. *zerina* Scimp.; *Hypnum incurvatum* Schimp.; - Romania, Caraș-Severin, Mehadia, 06.08.1872, leg. Simkovics L.

***Hypnum fertile* Sandt.** – (n. 5845) – ref.: *Denkschriften der Bayer. Botanischen Gesellschaft in Regensburg* 3: 147. 1841. ; *Species Muscorum Frondosorum* 236. 1801.; sin.: *Hypnum pseudocircinale* Kindb.; - Romania, Transylvania, Czeferlande am Ct. Unnen-Zeich, August 1869, leg. Barth.

***Hypnum cupressiforme* Hedw.** – (n. 5846) – ref.: *Species Muscorum Frondosorum* 291. 1801.; sin.: *Cupressina cupresiformis* (Hedw.) Mull. Hal.; *Hypnum dicladum* Mull. Hal.; *Hypnum drepanophyllum* Mull. Hal.; - Switzerland, St. Gallen, Rheintal, Rebstein, Decembre 1862, leg. no signed. (probably Zurkendrath).

***Hypnum callichroum* Brid. et Sch.** – (n. 5847) – ref.: *Bryologia Universa* 2: 631. 1827. ; *Species Muscorum Frondosorum* 236. 1801.; sin.: *Hypnum alaskae* Kindb.; *Hypnum hamulosum* Wilson; *Hypnum rupestre* F.B. White; - Romania, Hunedoara, Rusca, Luncani Valley, 25.07.1872, leg. Simkovics L.

***Hypnum pallescens* var. *pallescens* (Hedw.) P. Beauv.** – (n. 5848) – ref.: *Flora Boreali-Americana* 2: 315. 1803. sin.: *Hipnum pallescens* (Hedw.) P. Beauv.; *Hipnum reptile* Michx.; *Dreponium reptile* (Michx.) G.Roth; *Leskea pallescens* Hedw.; - Slovakia, Podhragy, Trencsin, no date, leg. Holuby.

***Hypnum imponens* Hedw.** – (n. 5850) – ref.: *Species Muscorum Frondosorum* 290. 1801.; sin.: *Hypnum imponens* var. *chrysoctytus* Mull. Hal.; *Hypnum terae-novae* Brid; - Sweden (Suecia), Smaland, Elmhutt, July 1866, leg. S. Berggren.

***Hypnum lindbergii* Mitt.** – (n. 5853) – ref.: *Journal of Botany, British and Foreign* 2: 123. 1864.; sin: *Breidleria arcuata* (Molendo) Loeske; *Breidleria patientie* Wjik & Margad; *Calliergonella lindbergii* (Mitt.) Hedenas; *Dreparium renauldi* (Kindb) G. Roth.; *Dreparium viride* (Hartm.) Lange; *Hypnum arcuatum* Lindb. ; *Hypnum arcuatiforme* Kindb.; *Hypnum patientia* Lindb., *Hypnum patientiae* Lindb. ex Milde ; *H. pseudodreparium* Mull. Hal.; *H. viride* (Hartm.) Lindb.; - Romania, Caraș-Severin, Voislova, 26.07.1872, leg. Simkovics L.

Gen *Orthothecium* W.P. Schimper, in Bruch et al., 1851

***Orthothecium rufescens* (Dicks. ex Brid.) Schimp.**– (n. 5051) – ref.: *Bryologia Europaea* 5: 107. 480 (fasc. 48 Mon. 1. 3). 1852. Basionym: *Hypnum rufescens* Dicks. ex Brid.; *Muscologia Recentiorum* 2(2): 139. 1801. sin.: *Holmgrenia rufescens* (Dicks. ex Brid.) Lindb.; *Hypnum rufescens* Dicks. ex Brid.; *Leskea rufescens* (Brid.) Schwägr.; *Orthothecium complanatum* Kindb.; *Orthothecium strictum* Lorentz; *Stereodon rufescens* (Dicks. ex Brid.) Schimp.; - Romania, Hnedoara, Luncani, Tăul Ursului Valley 25.07.1872, leg. no signed (Simkovics L. handwriting).

Gen *Platydictya* Berkeley, 1863

***Platydictya subtilis* (Hedw.) H.A. Crum** – (n. 5828) – ref.: *The Michigan Botanist* 3: 60. 1964. , Annotation: “~subtile~.” Basionym: *Leskea subtilis* Hedw.; *Species Muscorum Frondosorum* 221. 1801.; *Handbook of British Mosses* 145. 1863.; sin.: *Amblystegium subtile* Hedw.; *Amblystegium subtile* (Hedw.) Schimp.; *Amblystegiella subtilis* (Hedw.) Loeske; *Hypnum subtile* (Hedw.) Dicks.; *Leskea subtilis* Hedw.; *Serpoleskea subtilis* (Hedw.) Loeske; - Romania, Hunedoara (Mt. Rusca), 24.07.1872, leg. Simkovics L.

Gen *Ptilium* (W.S. Sullivant) De Notaris, 1867

***Ptilium crista castrensis* (Hedw.) de Not.** – (n. 5849) – ref.: *Commentario della Società Crittogamologica Italiana* 2: 283 [Cronaca Briol. Ital. 2: 17]. 1867. Basionym: *Hypnum crista castrensis* Hedw.(*Species Muscorum Frondosorum* 287. 76 f. 1-4.



1801.); sin.: *Hypnum crista castrensis* L.; *Hypnum crista castrensis* Hedw.; *Ptilium crista castrensis* (L.) de Not.; - Romania, Transylvania, Szelelerbonde (Săliște), iulie 1869, leg. Barth.

Gen. *Pylaisiella* N.C. Kindberg ex A.G. Grout, 1896

***Pylaisiella polyantha* (Hedw.) Grout** – (n. 5784) – ref.: *Bryologia Europaea* 5: 88 (fasc. 46–47. Monogr. 3). 1851. Basionym: *Leskea polyantha* Hedw., *Species Muscorum Frondosorum* 229. 1801; sin.; *Hypnum polyanthum* (Hedw.) Dicks.; *Hypnum polyanthum* var. *alpicolum* Kindb.; *Hypnum strigosum* Neck.; *Leskea polyantha* Hedw.; *Pylaisia longifolia* Röhl; *Pylaisia polyantha*. Hedw.; *Pylaisia polyantha* (Hedw.) Schimp.; *Pylissia polyantha*. (Hedw.) BSG; ; *Pylaisia polyantha* var. *alpicola* (Kindb.) Kindb.; *Stereodon brevifolius* Lindb. & Arnell ex Paris; *Stereodon polyanthos* (Hedw.) Mitt.; - Hungary, Szabolcs-Szatmar-Bereg, Nyiregyhaza, April, 1873, leg. Simkovic L.

***Pylaisiella polyantha* (Hedw.) Grout** – (n. 5785) – ref.: *Bryologia Europaea* 5: 88 (fasc. 46–47. Monogr. 3). 1851. Basionym: *Leskea polyantha* Hedw., *Species Muscorum Frondosorum* 229. 1801; sin.; *Hypnum polyanthum* (Hedw.) Dicks.; *Hypnum polyanthum* var. *alpicolum* Kindb.; *Hypnum strigosum* Neck.; *Leskea polyantha* Hedw.; *Pylaisia longifolia* Röhl; *Pylaisia polyantha*. Hedw.; *Pylaisia polyantha* (Hedw.) Schimp. ; *Pylissia polyantha*. (Hedw.) BSG; ; *Pylaisia polyantha* var. *alpicola* (Kindb.) Kindb.; *Stereodon brevifolius* Lindb. & Arnell ex Paris; *Stereodon polyanthos* (Hedw.) Mitt.; - Hungary, Szabolcs-Szatmar-Bereg, Nyiregyhaza, April, 1873 , leg. Simkovic L.

Fam. *Hylocomiaceae* (Broth) M. Fleisch.

Gen *Pleurozium* Mitten, 1869, nom. cons.

***Pleurozium schreberi* (Willd. ex Brid.) Mitt.** – (n. 5854) – ref.: *Journal of the Linnean Society, Botany* 12: 537. 1869. Basionym: *Hypnum schreberi* Willd. Ex Brid. ; *Muscologia Recentiorum* 2(2): 88. 1801.; *Species Muscorum Frondosorum* 236. 1801.; sin.: *Calliergonella schreberi*; *Hylocomium parietinum* Lindb.; *Hylocomium schreberi* (Willd. ex Brid.) De Not.; *Hypnum schreberi* Willd. ex Brid.; *Pleurozium schreberi* (Willd. ex Brid.) Mitt.; *Pleurozium schreberi* var. *secundum* Arnell & C.E.O.Jensen; *Stereodon schreberi* (Willd. ex Brid.) Mitt. ; - Romania, Mt. Retezat, Mălosu Valley, 02.08.1872, leg. Simkovic L.

Fam. *Leptodontaceae* Schimp.Gen *Leptodon* Mohr, 1803, nom. cons.

***Leptodon smithii* (Hedw.) F. Weber & D. Mohr** – (n. 5112) – ref.: *Index Musei Plantarum Cryptogamarum* [2]. 1803. Basionym: *Hypnum smithii* Hedw.; *Species Muscorum Frondosorum* 264. 68 f. 5--7. 1801.sin.: *Hookeria convulta* Spreng.; *Leptodon patagonicus* Mull. Hal.; *Leptodon smithii* Mohr.; - Romania, Caraș-Severin, Băile Herculane, April 1874, leg. Simkovics L.

Fam. *Leskeaceae* Schimp.Gen *Leskea* Hedw., 1801

***Leskea nervosa* (Brid.) Myrn** – (n. 5110) – ref.: *Corollarium Florae Upsaliensis* 52. 1834. Basionym: *Pterigynandrum nervosum* Brid.; *Muscologia Recentiorum Supplementum* 1: 132. 1806.; sin.: *Leskea nervosa* (Brid.) Loeske; - no date, Kauker, leg. Lamianiker Hanes.

***Leskea polycarpa* Ehrh.** – (n.5113) – ref.: *Species Muscorum Frondosorum* 225. 1801. ; sin.: *Hypnum palustre* Hoffm.; *Hypnum polycarpon* (Ehrh. ex Hedw.) Hoffm. ex Müll.Hal.; *Leskea polycarpa* Hedw.; *Leskea polycarpa* Ehrh. ex Hedw.; *Leskea exilis* Starke; *Leskea paludosa* Hedw.; *Leskea polycarpa* var. *exilis* (Starke) Milde; *Leskea polycarpa* var. *paludosa* (Hedw.) Schimp.; *Leskea polycarpa* var. *tenella* Schimp.; - Romania, Transylvania, Valea Lungă (Langenthal), on *Juglans regia*, May 1872, leg. Barth.

Gen *Pseudoleskea* Schimp., 1897

***Pseudoleskea incurvata* var. *incurvata* (Hedw.) Loeske** – (n. 5787) – ref.: *Bryologia Europaea* 5: 148. 477 (fasc. 49--51 Mon. 2. 1). 1852. Basionym: *Hypnum atrovirens* Dicks ex Brid; *Muscologia Recentiorum* 2(2): 153. 1801.; ITIS Taxonomic Serial Number 549434.; sin.: *Lescurea incurvata* (Hedw.) E. Lawton; *Pseudoleskea atrovirens* (Brid.) Schimp.; *Pseudoleskea falciscuspis* mull. Hal. & Kindb; *Pseudoleskea oligoclada* Kindb.; - Romania, Muntii Retezat, Clopotiva Valley, 31.07.1872, leg. Simkovics L. (not signed).

Fam. *Leucodontaceae* Schimp.Gen *Antitrichia* Brid., 1818

***Antitrichia curtispindula* (Timm ex Hedw.) Brid.** – (n. 5835) – ref.: *Muscologia Recentiorum Supplementum* 4: 136. 1819 [1818]. Basionym: *Neckera curtispindula* Timm ex Hedw.; *Species Muscorum Frondosorum* 209. 1801. sin.: *Antitrichia curtispindula* B.S.; *Anomodon curtispindulus* (Timm ex Hedw.) Hook. & Taylor; *Antitrichia formosana* Nog.; *Antitrichia pristioides* Glow.; *Hypnum curtispindulum* (Timm ex Hedw.) Brid.; *Hypnum montanum* Lam. ex Brid.; *Neckera curtispindula* Timm ex Hedw.; - uncertain date (Switzerland, Canton Jalfan ?), leg. Wirtz

Gen *Leucodon* Schwaegr., 1816

***Leucodon sciuroides* (Hedw.) Schwägr.** – (n. 5109) – ref.: *Species Muscorum Frondosorum, Supplementum Primum* 2: 1. 1816. Basionym: *Fissidens sciuroides* Hedw.; *Species Muscorum Frondosorum* 161. 1801. sin.: *Hypnum sciuroides* With.; *Fissidens sciuroides* Hedw.; *Leucodon balanicus* Velen.; *Leucodon morensis* Schwägr.; *Leucodon sciuroides* Swarz.; *Leucodon sciuroides* var. *balanicus* (Velen.) Düll; *Leucodon sciuroides* var. *morensis* (Schwägr.) De Not.; *Trichostomum sciuroides* (Hedw.) D.Mohr; - Romania, Arad, Săvârşin (Tucar hills), 22.07.1872, leg. Simkovics L.

Fam. *Neckeraceae* Scimp.Gen *Thamnobryum* Nieuwland, 1917

***Thamnobryum alopecurum* (Hedw.) Nieuwl. ex Gangulee** – (n. 5059) – ref.: *Mosses of Eastern India and Adjacent Regions* 5: 1452. 1976. Basionym: *Hypnum alopecurum* Hedw.; *Species Muscorum Frondosorum* 267. 1801.; *American Midland Naturalist* 5: 50. 1917.; sin.: *Hypnum alopecurum* L. ex Hedw.; *Porotrichum alopecurum* (L. ex Hedw.) Dixon; *Porotrichum alopecurum* var. *smolandicum* Tolf; *Thamnium alopecurum* Hedw.; *Thamnium alopecurum* (L. ex Hedw.) Schimp.; *Thamnium alopecurum* var. *robustum* Tolf ex G.Roth; *Thamnium alopecurum* var. *smolandicum* (Tolf) Podp.; *Thamnium mediterraneum* (Bott.) G.Roth; - Romania, Banat, Cazane, April 1874, leg. Simkovics L.

Fam. *Plagiotheciaceae* (Broth.) Fleisch.:

Gen *Plagiothecium* Bruch & Schimper, in Bruch et al., 1852

***Plagiothecium denticulatum* (L. ex Hedw.) Schimp.** – (n. 5786) – ref.: *Bryologia Europaea* 5: 190 (fasc. 48. Monogr. 12). 1852. Basionym: *Hypnum denticulatum* Hedw.; *Species Muscorum Frondosorum* 237. 1801.; sin.: *Hypnum denticulatum* L. ex Hedw.; *Hypnum denticulatum* var. *majus* Boulay; *Hypnum sylvaticum* Brid.; *Leskea hamosa* Ångstr.; *Plagiothecium denticulatum* Br. et Sch.; *Plagiothecium denticulatum* ssp. *sylvaticum* (Brid.) Dixon; *Plagiothecium denticulatum* var. *majus* (Boulay) Delogne; *Plagiothecium sylvaticum* (Brid.) Schimp.; *Stereodon denticulatus* (L. ex Hedw.) Mitt.; *Stereodon sylvaticus* (Brid.) Brid.; - Romania, Hunedoara, Mt. Rusca, 24.07.1872, leg. Simkovics L.

***Plagiothecium denticulatum* (L. ex Hedw.) Schimp.** – (n. 5793) – ref.: *Bryologia Europaea* 5: 190 (fasc. 48. Monogr. 12). 1852. Basionym: *Hypnum denticulatum* Hedw.; *Species Muscorum Frondosorum* 237. 1801.; sin.: *Hypnum denticulatum* L. ex Hedw.; *Hypnum denticulatum* var. *majus* Boulay; *Hypnum sylvaticum* Brid.; *Leskea hamosa* Ångstr.; *Plagiothecium denticulatum* Br. et Sch.; *Plagiothecium denticulatum* ssp. *sylvaticum* (Brid.) Dixon; *Plagiothecium denticulatum* var. *majus* (Boulay) Delogne; *Plagiothecium sylvaticum* Br. et Sch.; *Plagiothecium sylvaticum* (Brid.) Schimp.; *Stereodon denticulatus* (L. ex Hedw.) Mitt.; *Stereodon sylvaticus* (Brid.) Brid.; - Romania, Sibiu, Rășinari (Reschinarer), July 1872, leg. Barth.

Fam. *Thuidiaceae* Schimp.

Gen *Abietinella* Muller Hal., 1896

***Abietinella abietina* (Hedw.) M. Fleisch.** – (n. 5082) – ref.: *Die Musci der Flora von Buitenzorg* 4: 1497. 1923. Basionym: *Hypnum abietinum* Hedw.; *Species Muscorum Frondosorum* 353. 1801.; sin.: *Hypnum abietinum* Hedw.; *Thuidium abietinum* (Hedw.) Schimp.; - unidentified location (Switzerland, Canton Ifrel ?), no date, leg. O. Kuntze.

Gen *Thuidium* Bruch & Schimper, in Bruch et al., 1852

***Thuidium tamariscinum* (Hedw.) Schimp.** – (n. 5086) – ref.: *Bryologia Europaea* 5: 163. 482, 483 (fasc. 49--51 Mon. 7. 2, 3.). 1852. Basionym: *Hypnum tamariscinum* Hedw.; *Species Muscorum Frondosorum* 261. 67 f. 1--5. 1801.; sin.: *Hypnum*

*tamariscinum* Hedw.; *Leskea tamariscina* (Hedw.) Mitt.; *Thuidium tamariscifolium* Lindb.; - Romania, Arad, Săvârşin (Calvaria hills), 22.07.1872, leg. Simkovics L

***Thuidium delicatulum* ( Hedw.) Schimp.** – (n. 5087) – ref.: sin.: *Bryologia Europaea* 5: 164 (fasc. 49--51. Monogr. 8). 1852. Basionym: *Hypnum delicatulum* Hedw.; *Species Muscorum Frondosorum* 260. 1801; sin.: *Hypnum delicatulum* L. ex Hedw.; *Leskea delicatula* (L. ex Hedw.) Mitt.; *Thuidium delicatulum* var. *tamarisciforme* Ryan; *Thuidium erectum* Duby; *Thuidium recognitum* var. *delicatulum* (L. ex Hedw.) Warnst.; - Romania, Mehedinţi, Orşova, 07.08.1872, leg. Simkovics L.

**Phylum *Tracheophyta* Sinnot, 1935 ex Cavalier-Smith, 1998**

Subphylum *Euphyllophyta*

Infraphylum "*Moniliformopses*" Kenrick & Crane, 1997, nom.nud.

Clas. Polypodiopsida Cronquist et al.

Ord. *Polypodiales* Link

Fam. *Aspleniaceae* Newman

Gen *Asplenium* Linnaeus, 1753

***Asplenium adiantum-nigrum* L. var. *argutum*** – (n. 4949) – ref.: Sp. Pl. ed. 1 1081 (1753); - Germany, Reichenbach, Stenhunzendorf, September 1872, leg. Schumann. (Flora Silesiae).

***Asplenium adiantum-nigrum* L. var. *lancifolium*** – (n. 4950/a) – ref.: Sp. Pl. ed. 1 1081 (1753) ; - Romania, Orsova (Mehedinti) and Băile Herculane (Caras-Severin), April 1872 and August 1874, leg. Simkovics L.

***Asplenim lancifolium* Huff** – (n. 4950/b) – ref.: Sp. Pl. ed. 1 1081 (1753); - Romania, Orsova (Mehedinti) and Băile Herculane (Caras-Severin), April 1872 and August 1874, leg. Simkovics L.

***Asplenium ruta-muraria* L. v. *Brunfelsii*** – (n. 4946) – ref.: Sp. Pl. ed. 1 1081 (1753); - Hungary, Veszprem, Bakonybel, 23.04.1873, leg. Simkovics L.

***Asplenium ruta-muraria* L. v. *pseudogermanica*** – (n. 4947) – ref.: Sp. Pl. ed. 1 1081 (1753); - Romania, Bihor, between Bratca and Ponor, 30.05.1878, leg. Simkovics L.

***Asplenium scolopendrium* L.** – (n. 4951) – ref.: Hist. Brit. Ferns ed. 2 10 (1844); sin.: *Scolopendrium vulgare* Sm.; *Asplenium scolopendrium* L.; *Phyllitis scolopendrium* (L.) Newman; - Romania, Caraș-Severin, Băile Herculane, April - July 1874, leg. Simkovics L.

***Asplenium scolopendrium* L.** – (n. 4955) – ref.: Hist. Brit. Ferns ed. 2 10 (1844); sin.: *Scolopendrium vulgare* Sm.; *Asplenium scolopendrium* L.; *Phyllitis scolopendrium* (L.) Newman; - label missing, location, date and author remain unidentified.

***Asplenium trichomanes* L.** – (n. 4948) – ref.: Sp. Pl. ed. 1 1080 (1753); - label missing, location, date and author remain unidentified.

***Asplenium trichomanes* L. v. *lobatocrenatum*** – (n. 4944) – ref.: Sp. Pl. ed. 1 1080 (1753); - Romania, Mehedinți, Plavisevita, 04.04.1874, leg. Simkovics L.

***Asplenium trichomanes-ramosum* L.** – (n. 4945) – ref.: Sp. Pl. ed. 1 1082 (1753); sin.: *Asplenium viride* Huds.; - Romania, Bihor, Vărășoaia (Mt. Bihor), 18.07.1879, leg. Simkovics L.

Fam. *Dennstaedtiaceae* J.P. Losty, 1909

Gen *Pteridium* Rafin.

***Pteridium aquilinum* (L.) Kuhn** – (n. 4952) – ref.: Reise Ost Afr. Bot. 3(3): 11 (1879); Hedwigia 56. 383. 1915. 1915; sin.: *Allosorus aquilinus* (L.) C.Presl; *Asplenium aquilinum* (L.) Bernh.; *Cincinalis aquilina* (L.) Gled. 1764, non Trev. 1874; *Eupteris aquilina* (L.) Newman; *Filix aquilina* (L.) Woynt.; *Filix-foemina aquilina* (L.) Farw.; *Ornithopteris aquilina* (L.) J.Sm.; *Pteris aquilina* L.; *Paesia aquilina* (L.) Keyserl; - Hungary, Naszal, Vacz, May 1871, leg. Simkovics L.

Fam. *Dryopteridaceae* Ching, 1965, nom. cons.

Gen *Aspidium* Sw.

***Aspidium oreopteris* Sw.** – (n. 4941) – ref.: *Journal für die Botanik* 1800(2): 35. 1801.; sin.: *Dryopteris oreopteris* (Ehrh.) Max.; *Thelypteris oreopteris* (Ehrh.) Slasson; *T. limbosperma* (All) H.P. Fuchs.; *Oreopteris limbosperma* (Bellardi,

ex All); *Lastrea oreopteris* (Ehrh) Bory; *L. montana* Newm.; - Romania, Bihor, Pietroasa (Alecui Valley), 17-18.07.1879, leg. Simkovics L.

Gen *Dryopteris* Adanson, 1763, nom.cons.

***Dryopteris robertiana* (Hoffm.) C. Chr.** – (n. 4936) – ref.: *Index Filicum* fasc. 5: 289. 1905. {*Index Filic.* }; Basionym; *Polypodium robertianum* Hoffm. (*Deutschland Flora* 2: add. et emend, 10. 1795.); *Phytologist* 4: 371 (1851); sin.: *Gymnocarpium robertianum* (Hoffm.) Newman; *Gymnocarpium dryopteris* var. *pumilum* (DC.) Boivin; *Thelypteris robertiana* (Hoffm.) Sloss.; *Nephrodium robertianum* (Hoffm.) Prantl; *Lastrea robertiana* (Hoffm.) Newman; *Phegopteris robertiana* (Hoffm.) A.Braun; *Polypodium robertianum* Hoffm.; - Hungary, Veszprem, Harend, 22.04.1873, leg. Simkovics L.

***Dryopteris carthusiana* (Vill.) H.P.Fuchs** – (n. 4942) – ref.: *Bull. Soc. Bot. Fr.* 105: 339 (1958); sin.: *Aspidium spinulosum* Sw.; *Polystichum spinulosum* (O.F.Müll.) DC.; *Nephrodium spinulosum* Strempel; *Dryopteris spinulosa* (O.F.Müll.) Kuntze; *Polystichum spinulosum* DC.; *Polypodium spinulosum* O.F.Müll.; *Lastrea spinulosa* C.Presl; *Nephrodium spinulosum* Strempel subsp. *spinulosum*; - Romania; Cluj, Cluj-Napoca, Făget woods, 23.07.1878, leg. Simkovics L.

Gen *Polystichum* A.W. Roth, 1799, nom.cons.

***Polystichum aculeatum* (L.) Roth.** - (n. 4940) – ref.: *Tentamen Florae Germanicae* 3(1): 79. 1800.; sin.: *Aspidium thelypteris* Sw.; - Hungary, Pest, the Old Buda (in the fields), 12.06.1873, leg. Simkovics

***Polystichum lonchitis* (L.) Roth** – (n. 4937) – ref.: *Tent. Fl. Germ.* 3(1): 71 (1799); sin.: *Aspidium lonchitis* (L.) Sw.; *Dryopteris lonchitis* (L.) Kuntze; - Romania, Banat, Caraș-Severin, Groapa Bistrei, 13.08.1873, leg. Borbas Vince. (*Flora Banatica*)

***Polystichum setiferum* (Forssk.) Woyn.** – (n. 4939) – ref.: *Mitt. Naturw. Ver. Steierm.* 49: 181 (1913); sin.: *Aspidium angulare* Kit. ex Willd.; *Aspidium aculeatum* Sw. pro parte; *Aspidium aculeatum* sensu Sw.; *Polystichum aculeatum* (L.) Roth subsp. *angulare* (Kit. ex Willd.) Vollm.; *Polystichum angulare* (Kit. ex Willd.) C.Presl; *Dryopteris aculeata* Briq.; *Polystichum aculeatum* auct., non (L.) Roth; *Dryopteris setifera* (Forssk.) Woyn.; - Romania, Caraș-Severin, Plavisevita, 04.04.1874, leg. Simkovics L.



Fam. *Pteridiaceae*

Gen *Anogramma* Link, 1841

***Anogramma leptophylla* (L.) Link** – (n. 4935) – ref.: Fil. Sp. 137 (1841); sin.: *Grammitis leptophylla* (L.) Sw.; *Gymnogramma leptophylla* (L.) Desv.; - Franta, Var, Provence-Alpes-Cote d'Azur, d'Hyeres, May 1860, leg. Huet.

Gen *Notholaena*

***Notholaena marantae* (L.) Desv.** – (n. 4954) – ref.: Jour. Bot. Appl. 1: 92 (1813); sin.: *Paraceterach marantae* (L.) R.M.Tryon; *Cheilanthes marantae* (L.) Domin; - France, 13.05.1873, leg. Bernard.

Fam. *Woodsiaceae* (Champ.) Herter

Gen *Cystopteris* Bernhardt, 1805

***Cystopteris fragilis* (L.) Bernh.** – (n. 4943) – ref.: Neues Jour. Bot. 1(2): 27 (1805); sin.: *Cystopteris regia* (L.) Desv.; *Cystopteris alpina* (Roth) Desv.; *Cystopteris filix-fragilis* (L.) Borbás; - label missing, location, date and autor remam unidentified.

Ord. *Salviniales* Briton. 1901

Fam. *Salviniaceae* Lestiboudois, 1826

Gen *Salvinia* Seguin, 1754

***Salvinia natans* (L.) All.** – (n. 4932) – ref.: Fl. Pedem. 2: 289 (1785); - Romania, Bihor, between Tarian and Crestur, 21.09.1878, leg. Simkovics L.

## Conclusions

The botanical collection of Simonkai L. got into the heritage of the Cris County Museum in 1954, prior to this year being in the custody of the Workers' Faculty of Oradea (the present "E. Gojdu National College" at the then address, no. 5, Spiru Haret street, Oradea). Subsequent to processing the material by employing an updated taxonomic classification, with indicating the accepted name and the main synonyms and the location (where identified), respectively the date

and the author of the plants' gathering (where mentioned), we are now submitting to public attention the first 335 taxons, belonging to 167 genuses and 94 families, which, according to the employed taxonomical classification (*Systema Naturae 2000*), belong to 3 kingdoms (*Protozoa*, *Fungi*, *Plantae*), respectively to the following phyla: *Amebozoa* (class of *Myxogastrea*), *Ascomycota*, *Basidiomycota*, *Charophyta*, *Anthocerothyta*, *Marchantiophyta*, *Bryophyta*, *Tracheophyta* (class of *Polypodiopsida*).

The material was collected during the second half of the 19<sup>th</sup> century, most of it by Simonkai L. (alias Simkovics L.) himself. The herbarium also contains plants received from other botanists of the time whose area of interests coincided with his (Simonkai was famous in those times for being specialized in *Bryophytae* and *Spermatophytae*, being one of the collectors for both *Hungary's and Belgium's National Herbarium*). There are also samples that were unsigned or whose signature could not be identified. The geographical area of collecting is rather large, including Romania (with the two regions, Transylvania and Banat, that were part of the Austrian-Hungarian Empire at that time), and also Hungary, Austria, Serbia, Slovenia, Slovakia, Germany, Switzerland, Italy, France, Poland, the Czech Republic, Denmark, Sweden, Kalinigrad Oblast (exclave of the Russian Federation at the Baltic Sea), where all localities have their current names. Identification was impossible when location was missing. We have to add that the herbarium has missing samples from several sheets, preserving but the information related to the collected species, its location, date and author. We felt that mentioning these things was mandatory, as presented in Annex 1.

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- \*\*\* Royal Botanic Garden Edinburgh – *Flora Europaea* (PANDORA taxonomic data base system)
- \*\*\* Species Fungorum 2006. (<http://www.speciesfungorum.org.>)

\*\*\* Global Biodiversity Information Facility. (<http://www.gbif.org>),

\*\*\* Bryatae (Check List of Norwegian Mosses – [www.nhm.uio.no/botanisk/mose/tax\\_brya.htm](http://www.nhm.uio.no/botanisk/mose/tax_brya.htm))

\*\*\* Marchantiatae (Check List of Norwegian Mosses - [www.nhm.uio.no/botanisk/mose/tax\\_marc.htm](http://www.nhm.uio.no/botanisk/mose/tax_marc.htm))

\*\*\* Bio Portal ([www.ubio.org/portal/-5k](http://www.ubio.org/portal/-5k)),

\*\*\* Species 2000 & IT IS Catalogue of Life: 2007 Annual Checklist.

Annex 1. Data on the label of the herbarium sheet regarding several missing species

Species	Taxonomy	Location and author
<b><i>Agaricus typicus</i></b> L. – (n. 5889) – ref.: Sp. Pl.: 1171. 1753.	<i>Fungi</i> <i>Basidiomycota</i> <i>Agaricomycete</i> <i>Agaricales</i> <i>Agaricaceae</i>	Romania, Bihor, Sănmartin, Peșea, 25.03.1876, leg. Simkovic L.
<b><i>Nitella flabellata</i></b> Kutz.– (n.5899)	<i>Charophyta</i> <i>Charophyceae</i> <i>Charales</i> <i>Characeae</i> <i>Nitelleae</i> <i>Nitella</i>	Hungary, Jasz-Nagykun-Szolnok, Karcag, 08. 07. 1873, leg. Simkovic L.
<b><i>Riccia glauca</i></b> L. – (n. 4996) – ref.: <i>Riccia</i> L., Sp. Pl.: 1138. 1 Mai 1753.; Typus: <i>R. glauca</i> L. (typ. cons.).	<i>Bryophyta</i> <i>Hepaticae</i> <i>Ricciineae</i> <i>Ricciaceae</i> <i>Riccia</i>	Romania, Hunedoara, Mt. Retezat, 31.07.1872, leg. Simkovic L.
<b><i>Polytrichum alpinum</i></b> L. ex Hedw.–(n. 5096)–ref.: <i>Species Muscorum Frondosorum</i> 92. pl. 19: f. 2: b. 1801.	<i>Bryophyta</i> , <i>Polytrichidae</i> <i>Polytrichiales</i> <i>Polytrichiaceae</i> <i>Polytrichum</i>	Romania, Hunedoara, Clopotiva Valley, 30. 07. 1872, leg. Simkovic L.
<b><i>Polystichum setiferum</i></b> (Forssk.) Woyn. – (n. 4938) – ref.: Mitt. Naturw. Ver. Steierm. 49: 181 (1913).	<i>Tracheophyta</i> <i>Polypodiopsida</i> <i>Polypodiales</i> <i>Dryopteridaceae</i>	Hungary, Pest, Visegrad, 05. 05.1872, leg. Simkovic L.
<b><i>Matteuccia struthiopteris</i></b> (L.) Tod. – (n. 4953) – ref.: Gior. Sci. Nat. Econ. Palermo 1: 235 (1866).	<i>Tracheophyta</i> <i>Polypodiopsida</i> <i>Polypodiales</i> <i>Dryopteridaceae</i>	Romania, Bihor, Bratca - Ponor, 30.05.1878, leg. Simkovic L.
<b><i>Marsilea quadrifolia</i></b> L. – (n. 4933) – ref.: Sp. Pl. ed. 1 1099 (1753).	<i>Tracheophyta</i> <i>Polypodiopsida</i> <i>Salviniales</i> <i>Marsilea</i>	Romania, Bihor, Oradea, 22. 09.1878, leg. Simkovic L.

<b>NYMPHAEA</b> Folia naturae Bihariae	<b>XXXV</b>	<b>127 - 134</b>	<b>Oradea, 2008</b>
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## **An abnormal *Emys orbicularis* (L. 1758) hatchling possibly indicating pollution in Pârâul Pețea reserve, Băile 1 Mai, Romania**

*Adrian Găgiu & Márton Venczel*

Țării Crișurilor Museum, Bd. Dacia 1-3, RO-410464 Oradea, Romania  
adriangăgiu@rdslink.ro

**Abstract.** In April 2008 an *Emys orbicularis* hatchling showing abnormal shell pattern was captured in the Pârâul Pețea natural reserve, NW Romania. Such shell aberration could be the result of pollution in the reserve, which is already subject to high anthropic influence.

### **Introduction**

The European pond turtle *Emys orbicularis* (L. 1758) lives in most parts of South, East and Central Europe, as well as in North Africa, the Iberian Peninsula, Asia Minor and Central Asia, with post-glacial remains in Northern Europe, and it is endangered in many parts of its range (Fritz 1998, Fritz & Andreas 2000). We are not aware of studies on shell anomalies in the populations of *Emys orbicularis* from Romania. The population in Băile 1 Mai is very small, like the other Transylvanian populations (Ghira et al. 2002), and vulnerable due to intense human activities in the entire Pețea basin (Covăciu-Marcov et al. 2000).

Additional shields in chelonians are caused by genetic anomalies or by suboptimal environmental factors during the embryogenesis, and more or less shields than the standard carapacial scutation seem to have no effect on the survivorship of individuals (Ewert 1979, quoted in Bujes & Verrastro 2007).

The aim of the present paper was to record the occurrence of shell anomalies in *Emys orbicularis* in the Pârâul Pețea reserve, possibly caused by known or potential pollution from the nearby human activities.

### Material and methods

The Pârâul Pețea reserve is located in Băile 1 Mai spa, 9 km southeast from Oradea, Romania, and was declared in 1932 around the hypothermal lake formed by some extensions of the brook (total length 1.5 km). It is situated within the borders of Băile 1 Mai spa, with a hospital, a hotel, a public pool and drainage facilities as nearby potential pollution sources on the left bank, and agricultural activities (possibly implying the use of pesticides) on the right bank.

The reserve has roughly two zones: first (A), a pond with thermal, underwater springs, having a depth of 0,1 – 3 m and an average temperature between 35 °C by the springs and 25 °C near the shore (Paina 1978). The second zone (B) is an elongated pond formed by another diverticulum of the rivulet (in 2002 it was excavated and cleaned of excessive mud and organic debris threatening to overload the biotope).

Aquatic vegetation is abundant, consisting of species of *Potamogeton*, *Typha*, *Phragmites*, *Lemna*, *Butomus*, *Alisma*, *Spirodela*, *Cabomba*, *Elodea*, and the local endemic morph *Nymphaea lotus* L. var. *thermalis* (D. C.) Tuzson 1908. The aquatic fauna includes characteristic elements such as the Cyprinid *Scardinius racovitzai* Müller 1958, endemic for the lake, and the relict snail *Melanopsis parreyssi* Philippi 1847. The herpetofauna of the reserve and its adjacent zone consists of *Lissotriton vulgaris* (L. 1758), *Triturus cristatus* (Laurenti 1768), *Bombina bombina* (L. 1758), *B. variegata* (L. 1758), *Bufo bufo* (L. 1758), *B. viridis* Laur. 1768, *Hyla arborea* (L. 1758), *Pelophylax ridibunda* (Pallas 1771), *Rana dalmatina* Fitzinger 1838, *Lacerta agilis* (L. 1758), *Anguis fragilis* L. 1758, *Natrix tessellata* (Laurenti 1768), *N. natrix* (L. 1758), and *Vipera berus* (L. 1758). Other vertebrates in the reserve are *Alcedo atthis* (L. 1758), *Nycticorax nycticorax* (L. 1758), *Galinula chloropus* (L. 1758), *Acrocephalus arundinaceus* (L. 1758), *Phasianus colchicus* L. 1758, *Anas platyrhynchos* L. 1758, and *Rhodeus amarus* (Bloch 1782). Odonata and Gerromorphans are abundant in many areas of the lake, the latter including the rare *Mesovelgia thermalis* Horváth 1915, but also several *Microvelia*, *Gerris* and *Hydrometra* species.

On April 23 2008 an *Emys orbicularis* female hatchling was captured by hand near the distal end of zone B, basking close to the shoreline on floating dead leaves and stems of *Typha* sp. Shell anomalies were recorded, the individual was measured, photographed, kept in captivity in an aquaterrarium, and then released at the same spot after six days.

## Results

Measurements: maximum linear length of the carapace 25.5 mm.; maximum linear length of the plastron 24.9 mm.; maximum linear width of carapace 24.7 mm.; maximum linear width of plastron 19.7 mm. Compared to the normal shell pattern for the species (Fuhn & Vancea 1961), the individual presented a supernumerary complex with nine vertebral scutes, with the second, third and fourth presenting a diagonal division that split the shield in two, and the fifth being split asymmetrically in two; marginal and plastron shields did not show any alteration (Fig. 1).

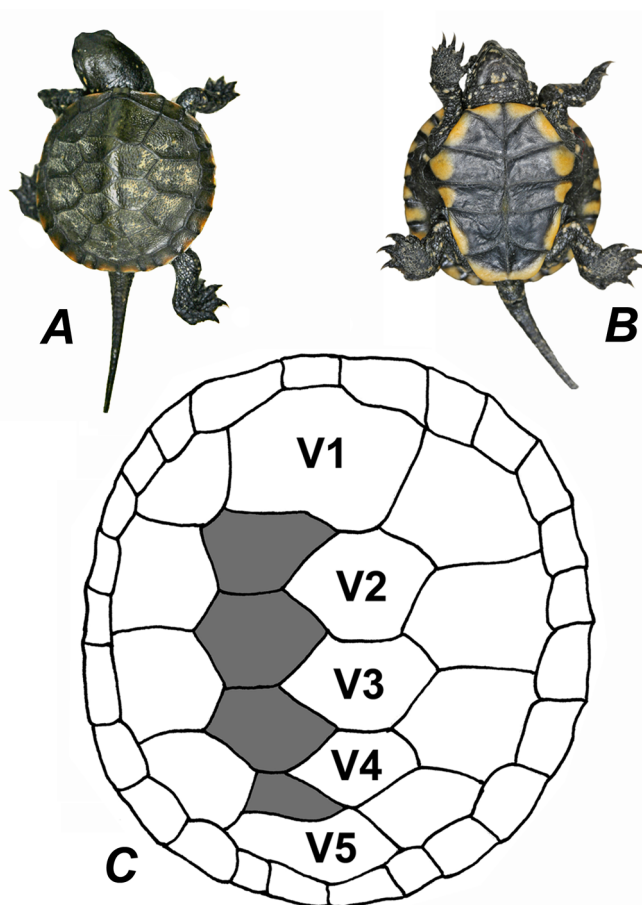
The carapace was light brown, with all marginal shields marked by distinct semicircular orange spots, characteristic to *E. o. hellenica* (Valenciennes 1832), the yellow-throated population from Eastern Europe, although the individual had only a larger yellow spot and several small ones on its throat, a character which may include it in the transitory population with yellow-spotted throat (Fritz 1992). The latter is a southeastern European population from Greece, Bulgaria, Croatia, Bosnia and Herzegovina, Serbia, Montenegro, Macedonia, Slovenia, European Turkey, and northeastern Italy, transitory between *E. o. orbicularis* (L. 1758) (dark-throated) and *E. o. hellenica* (Valenciennes 1832) (yellow-throated), and its range is reaching up to the region south to Budapest (Fritz 1992, 1996). The nuchal shield of the specimen had parallel sides, which is rather rare in *E. o. hellenica* but more frequent in *E. o. orbicularis* (Fritz 1995, 1996), and the plastron was yellow with a very large, central black spot, characteristic of *E. o. orbicularis*.

## Discussion

The mixed morphological features of the specimen could possibly suggest hybridization between *E. o. orbicularis* and *E. o. hellenica*, such a hybrid population (or at least showing some characters of *E. o. hellenica*) being recorded in Turkey, Greece, Bulgaria and southern Romania (Fritz 1994, 1995, Fritz & Obst 1995). But *E. orbicularis* populations in the Aegean region of Turkey show high variation of morphological characters (Ayaz et al. 2004), and in the populations from Crimea,

Ukraine, no haplotypes for *E. o. hellenica* have been recorded, even though individuals resembled *E. o. hellenica* morphologically (Kotenko et al. 2005). Thus the possible inclusion of the studied hatchling to a transition population between the nominotypical subspecies and *E. o. hellenica* should be treated with caution.

In chelonians, accessory or asymmetric scutes occur in approximately 15



**Fig. 1.** Abnormal scute pattern in an *Emys orbicularis* hatchling in Pârâul Pețea reserve: A – dorsal view; B – ventral view; C – representation of the carapace (V1-V5 vertebral scutes; supernumerary scutes in grey).

% of individuals, but in *Emys orbicularis* populations such anomalies are rare (Najbar & Maciantowicz 2000, Mosimann 2002). Such abnormalities could be caused by: chemical pollution, especially heavy metals and pesticides; by inbreeding de-



pression due to small population size, or by outbreeding depression (contact of very dissimilar genomes); and/or by suboptimal temperature or humidity during incubation (Ayres Fernández & Cordero Rivera 2004). In *Chrysemys picta* (Schneider 1783), scute anomalies are more common at the northern limit of the range, possibly caused by suboptimal temperatures during incubation (MacCulloch 1981). Pesticides and heavy metals are known to cause a higher rate of scute anomalies in *Emys orbicularis* in Northern Spain (Ayres Fernández & Cordero Rivera 2004), and abnormal development in eggs in the *Chelydra serpentina* (L. 1758) population from the Great Lakes region (Bishop et al. 1998).

The low density and small size of the isolated subpopulation in the reserve may support genetic drift or a negative genetic impact of allochthonous individuals. But the presence of human sources of pollution near the reserve (Danciu 2005) could be consistent with the hypothesis of chemical pollution causing shell anomalies. In 2002, an accidental pollution with oily products was observed, and in the following year a treatment with the common pesticide Roundup was applied against invading *Typha*. As experimental data proved Roundup to be highly lethal to amphibian larvae and juveniles (Relyea 2005), its negative effect on reptiles may also be supposed. An experiment to distinguish between the potential causes of shell anomalies, by incubating eggs from the Pârâul Pețea reserve in controlled conditions, could not be undertaken yet, as nesting sites within the reserve are still unidentified.

Nesting sites being used during long periods (up to 10 years) by at least some of the females, knowledge about nesting site conditions is essential for protection of *Emys orbicularis* populations, especially since the ecological parameters of nesting areas could change during the long lifespan of the turtles, thus forcing females to look for new nesting areas (Mitrus 2005). Most nests are localized within 150 m from water bodies, but some females could use more distant sites even if there were good nesting areas close to the water; nesting sites are used repeatedly as long as they retain ecological features suitable for egg incubation, and they are changed when disturbed by man or shaded by growing vegetation (Lindeman 1992), or sometimes even after no visible changes in the environment (Mitrus 2005). Therefore, the contribution of suboptimal nesting conditions to the scute anomalies should not be excluded, in addition to the known pollution with the Roundup pesticide.

Hatchlings may have even more stringent microhabitat requirements than juveniles or adults; they prefer temporary ponds or small, similar areas in the big ponds, with shallow water and dense vegetation, close to the nesting area in order to avoid competition with adults and to reduce the risk of drowning and

predator attacks, and they exhibit fidelity to such optimal patches of habitat (Ayres & Cordero 2007). In the absence of temporary ponds in the area, this description fits the capture site for the abnormal hatchling in the Pârâul Pețea reserve.

Seams in the superficial keratinous layer of the shell of chelonians, which are weak points compared to the interdigitations of the sutures of bony plates, are only occasionally coincident with such sutures of the underlying bones (Pritchard 1988). Therefore, since the examined individual could not be assigned to the variations in bony plate pattern and their respective functions as discussed by Pritchard, and since bones were more important than the keratinous scutes in determining shell strength in most chelonians, the adaptative value of scute anomalies and their impact on turtle biology remain uncertain.

In the absence of data from chemical analysis of water and soil from the Pârâul Pețea reserve concerning pesticides (and heavy metals), which are the more probable pollutants from the known sources near the reserve, as well as the more probable cause for scute anomalies, their hypothesized negative effect on turtle shell, nesting and habitat, as well as their potential negative impact over the biotope need further clarification.

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