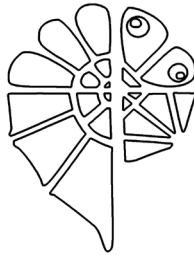


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THE PRELIMINARY SURVEY OF THE BRYOPHYTE VEGETATION IN SERBIA

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The investigation of bryophyte flora and vegetation in Serbia has been neglected for a long time. There is no evidence of what bryophyte vegetation exists, and the composition and structure of the vegetation were previously unknown. The preliminary overview of syntaxonomic categories of the bryophyte vegetation of Serbia has been made based on the floristic data and field observations, as well as on the author's personal experience regarding the structure of the vegetation. With 144 communities, the presented list gives the first insight into the actual, but also expected, types of bryophyte vegetation in Serbia. Further studies will be needed to determine the complete and real composition and structure of the bryophyte vegetation in Serbia.

Keywords: bryophytes, vegetation, syntaxonomic classification, Serbia.

INTRODUCTION

Bryophytes, like all other living beings on Earth, are not distributed over space accidentally, but rather according to their ecological needs and in accordance with other co-habitants. Thus, bryophytes

co-habit with other organisms forming special communities, which, expressed by the characteristic bryophyte species, can be defined as bryo-vegetation. These small bryophyte communities can give precise insight into ecological conditions of microhabitats. The bryophytes form autonomous vegetation types, whether they are in the same niches together with vascular plant vegetation, or on bare soil, rocks or other empty spaces. They reproduce in space and time under similar conditions, and thus build communities.

The bryophyte vegetation is usually neglected due to its low or non-economic value, and also because the biomass of bryophyte vegetation is, except for wet ecosystems, negligible. The need for study of vegetation in small niches in various biomes in Serbia, as important as the study of vegetation of vascular plants, is reinforced by the fact that the role of bryophytes in different kinds of ecosystems is already widely-known from other sources (eg. Smith 1982).

The joint approach by various specialists in cryptogams is very welcome too, since in many situations bryophytes and lichens, bryophytes and fungi, and bryophytes and algae are main co-bionts, and edaphicators of some vegetation types. Exceptionally, they can be part of some bryophyte-pteridophyte and bryophyte-phanerogams communities, where, according to the special ecology of habitats, the bryophytes can support the competitiveness of vascular plants and form a significant part of communities (eg. some communities from class *Adiantetea* Br.-Bl. 1947, *Montio-Cardaminetea* Br.-Bl. ex Tx. 1943 or *Oxycocco-Sphagnetes* Br.-Bl. ex Tx. 1943). Even some forest types were described with bryophyte species as character species (eg. ass. *Musco-Fagetum moesiaca* B. Jovanović, ass. *Bazzanio trilobitae-Abietetum* Wraber, etc.).

Certain bryophyte vegetation types are extremely important as a successional phase to some other vegetation types, and/or to living or nesting habitats for some important ecosystem actors, like invertebrates. These features are even used in agriculture (eg. Ando and Matsuo 1984).

To date, in Serbia only one cryptogamic community has been described (*Endocarpetum pussilae* Gallé 1974) with its regional variety from Mošorin in Titel Loess Plateau (Titelski Breg) (*Endocarpetum*

pussilae titelicum), characterized by loess lichen *Endocarpon pussilum* Hedw., and by interesting and rare bryophyte co-bionts (Gallé 1974). In other ex-Yugoslav countries there were a few studies of lignicol communities in Bosnia (Grgić 1978) and tufa communities in Plitvice lakes (Plitvička Jezera), Croatia (Pavletić 1957). The studies of the bryophyte vegetation, for example, are well-known in Central Europe and Italy (Marstaller 1993; Puglisi 2008) while there are intensive studies in Spain, Turkey and the Near East.

MATERIAL AND METHODS

The very first list of syntaxonomic categories of bryophyte vegetation of Serbia was made in 2005 for the purpose of the project Habitats of Serbia (<http://habitat.bio.bg.ac.yu>). It was based on data from the literature sources concerning bryophyte vegetation (von Hübschmann 1986; Marstaller 1993; Dierssen 2001), and the author's field observations as well.

The methodology used for the study of bryophyte vegetation is the same as for phanerogams, and with the exception of the relevee size, follows the Braun-Blanquet (1964) phytosociological method. That method was applied to establish the syntaxonomic classification (from classes to associations) of bryophyte vegetation in Serbia.

The actual, assessed and expected distributions of the bryophyte associations in Serbia were discussed after the author's field investigation and observations.

RESULTS

The results are presented as a preliminary overview of syntaxonomic classification, from classes to associations, of the bryophyte vegetation presented in Serbia. The overview comprises a total of 144 units at the association rank that are recognized to be present in Serbia.

The assessment of the actual level of distribution of the associations is also mentioned. Rare communities are those seen less than twice, common are those marked 3-5 times and common are those noticed more than 5 times.

Table 1. - The overview of syntaxa of Bryophyte vegetation in Serbia.

Syntax. cat.	Name	Distribution in Serbia
Clas.	PLATYHYPNIDIO-FONTINALIETEA ANTIPYRETICAE Phil. 1956	
Ord.	<i>BRACHYTHECIETALIA PLUMOSI</i> Phil. 1974	
All.	<i>RACOMITRION ACICULARIS</i> v. Krus. 1945	
Ass.	<i>Scapanietum undulatae</i> Schwick. 1944	common
Ass.	<i>Madothecetum cordeanae</i> Phil. 1956	common
All.	<i>HYGROHYPNION DILATATI</i> Kraj. ex Plam. 1974	
Ass.	<i>Philonotido seriatae-Hygrohypnetum dilatati</i> Plam. 1974	sporadic
Ord.	LEPTODICTYETALIA RIPARIJ Phil. 1956	
All.	<i>PLATYHYPNIDION RUSCIFORMIS</i> Phil. 1956	
Ass.	<i>Oxyrrhynchietum rusciformis</i> Gams ex v. Hübschm. 1953	sporadic
All.	<i>BRACHYTHECION RIVULARIS</i> Hertel 1974	
Ass.	<i>Brachythecio rivularis-Hygrohypnetum luridi</i> Phil. 1965	sporadic
Ass.	<i>Ceratoneuretum filicini</i> Poelt 1954	common
Ass.	<i>Trichocoletum tomenyellae</i> Herzog 1943	rare
All.	<i>FONTINALION ANTIPYRETICAE</i> W. Koch 1936	
Ass.	<i>Fontinaletum antipyreticae</i> Kaiser 1926	common
Ass.	<i>Fontinali-Pachyfissidentetum grandifrontis</i> W. Koch 1936	sporadic
All.	<i>CINCLIDOTION FONTINALOIDIS</i> Phil. 1956	
Ass.	<i>Cinclidotetum fontinaloidis</i> Gams ex v. Hübschm. 1953	sporadic
Ass.	<i>Cinclidotetum aquatici</i> Phil. 1956	sporadic
Ass.	<i>Leptodictyo riparii-Fissidentetum crassipedis</i> Phil. 1956	common
All.	<i>RHYNCHOSTEGION RIPARIOIDES</i> Waldh. 1944	
Ass.	<i>Rhynchostegietum riparioidis</i> Gams 1927	common
Ass.	<i>Thamnobryetum alopecuri</i> Gams 1927	sporadic
Clas.	CERATODONTO-POLYTRICHETEA PILIFERI Mohan 1978	
Ord.	<i>POLYTRICHETALIA PILIFERI</i> v. Hübschm. 1975	
All.	<i>CERATODONTO-POLYTRICHION PILIFERII</i> (Waldh. 1947) v. Hübschm. 1967	
Ass.	<i>Racomitrio-Polytrichetum piliferi</i> v. Hübschm. 1967	common
Ass.	<i>Brachythecietum albicantis</i> Gams ex Neum. 1971	sporadic
Ass.	<i>Tortuletum ruralis</i> Gams 1927	common
Clas.	RACOMITRIETEA HETEROSTICHI NEUM. 1971	
Ord.	GRIMMIETALIA COMMUTATAE Šm. et Van. in Kl. et Had. ex Šm. 1947	
All.	<i>GRIMMION COMMUTATAE</i> v. Krus. 1945	
Ass.	<i>Grimmietum commutato-campestris</i> v. Krus. 1945	sporadic
Ass.	<i>Coscinodontetum cribrosi</i> v. Hübschm. 1955	rare
Ass.	<i>Hedwigietum albicantis</i> All. ex Vand. Berg. 1953	rare

Syntax. Name cat.	Distribution in Serbia
Ass. <i>Grimmietum montanae</i> Marst. 1984 <i>ANDREAEION RUPESTRIS</i> v. Krus. et Šm. in Kl. et Had. ex Kl. 1948	sporadic
Ass. <i>Andreaeetum petrophilae</i> Frey 1922	rare
Clas. CLADONIO-LEPIDOZIETEA REPTANTIS Jez. et Vondr. 1962 em.	
Ord. <i>GRIMMIETALIA HARTMANII</i> Phil. 1956	
All. <i>GRIMMIO HARTMANII-HYPNION CUPRESSIFORMIS</i> Phil. 1956	
Ass. <i>Grimmietum hartmanii</i> Storm. 1938	rare
Ord. <i>DIPLOPHYLLETALIA ALBICANTIS</i> Phil. 1963	
All. <i>DICRANELLION HETEROMALLAE</i> (Phil. 1956) Phil. 1963	
Ass. <i>Calypogeietum fissae</i> Schumacher ex Phil. 1956	sporadic
Ass. <i>Calypogeietum trichomanis</i> Neum. 1971	rare
Ass. <i>Calypogeietum muellerianae</i> Phil. 1963	rare
Ass. <i>Diphyscietum foliosi</i> Phil. 1963	rare
Ass. <i>Pellio epiphyllae-Nardetum insectae</i> Schum., de Zutt. et Vana 1986	rare
Ass. <i>Fissidentetum bryoides</i> Phil. ex Marst. 1983	common
Ass. <i>Plagiothecietum cavifolii</i> Marst. 1984	common
Ass. <i>Pleuridio acuminati-Ditrichetum pallidi</i> Gillet ex Marst. 1991	sporadic
Ass. <i>Eurhynchietum praelongi</i> Norr. 1969	common
Ass. <i>Pogonatetum aloidis</i> Phil. 1956	common
Ass. <i>Pogonatetum nani</i> Mohan ex Marst. 1984	sporadic
Ass. <i>Pogonato urnigeri-Atrichietum undulati</i> v. Krus. 1945	common
Ass. <i>Dicranello heteromallae-Oligotrichetum hercynici</i> Schum., de Zutt. et Joye 1980	rare
Ass. <i>Atrichetum angustati</i> Phil. 1989	rare
Ass. <i>Nardietum scalaris</i> Phil. 1956	rare
Ass. <i>Dicranelletum rufescentis</i> Phil. 1956	sporadic
Ass. <i>Catharineetum tenellae</i> Mohan 1978	sporadic
Ass. <i>Ditricho subulati-Pogonatetum aloidis</i> Heb. 1977	common
Ass. <i>Diplophyllion albicantis</i> Phil. 1956	sporadic
Ass. <i>Diplophylo albicantis-Scapanietum nemorosae</i> Šm. 1947	sporadic
Ass. <i>Bartramiatum pomiformis</i> v. Krus. ex v. Hübschm. 1967	sporadic
Ass. <i>Rhabdoweisietum fugacis</i> Schade ex Neum. 1971	rare
Ass. <i>Mnio horni-Bartramiatum hallerianae</i> Marst. 1984	sporadic
Ass. <i>Cephalozio bicuspidatae-Diplophyllietum taxifolii</i> Marst. 1991	sporadic
All. <i>PELLION EPIPHYLLAE</i> Marst. 1984	
Ass. <i>Pellietum epiphyllae</i> Marst. 1984.	common

Syntax. cat.	Name	Distribution in Serbia
Ord.	<i>CLADONIO-LEPIDOZIETALIA REPTANTIS</i> Jez. et Vondr. 1962	
All.	<i>NOWELLION CURVIFOLIAE</i> Phil. 1965	
Ass.	<i>Lophocoleo-Dolichothecetum seligeri</i> Phil. 1965	common
Ass.	<i>Riccardio-Scapanietum umbrosae</i> Phil. 1965	sporadic
All.	<i>TETRAPHIDION PELLUCIDAE</i> v. Krus. 1945	
Ass.	<i>Leucobryo-Tetraphidetum pellucidae</i> Barkm. 1958	sporadic
Ass.	<i>Calypogeietum neesianae</i> Phil. 1965	rare
Ass.	<i>Orthodicranetum flagellaris</i> v. Krus. ex v.d.Dunk 1972	sporadic
Ass.	<i>Dicranello heteromallae-Campylopodetum flexuosi</i> Marst. 1981	sporadic
Ass.	<i>Leucobryo glauci-Cladonietum coniocraeae</i> Lec. 1975	sporadic
Ord.	<i>BRACHYTHECIETALIA RUTABULO-SALEBROSI</i> Marst. 1987	
All.	<i>BRYO-BRACHYTHECION</i> Lec. 1975 em. Marst. 1987	
Ass.	<i>Brachythecio salebrosi-Amblystegietum juratzkani</i> (Sjog. ex Marst. 1987) Marst. 1989	common
Ass.	<i>Hypno-Xylarietum hypoxyli</i> Phil. 1965	common
Ass.	<i>Brachythecio-Hypnetum cupressiformis</i> Norr. 1969	common
Ass.	<i>Brachythecio salebrosi-Drepanocladetum uncinati</i> Marst. 1989	common
Ass.	<i>Mnio horni-Fissidentetum adianthoidis</i> Lec. 1975	sporadic
Ass.	<i>Eurhynchio praelongi-Homalietum trichomanoidis</i> Lec. 1975	common
Ass.	<i>Plagiothecietum neglecti</i> Ricek 1968	sporadic
Ord.	<i>DICRANETALIA SCOPARII</i> Barkm. 1958	
All.	<i>DICRANO SCOPARII-HYPNION FILIFORMIS</i> Barkm. 1958	
Ass.	<i>Dicrano scoparii-Hyonetum filiformis</i> Barkm. 1958	common
Ass.	<i>Platygirietum repentis</i> Le Blanc 1963	sporadic
Ass.	<i>Orthodicrano montani-Hypnetum filiformis</i> Wisn. 1930	common
All.	<i>ISOTHECION MYOSUROIDES</i> Berk. 1958	
Ass.	<i>Mnio horni-Isothecietum myosuroides</i> Barkm. 1958	common
Ord.	<i>DICRANELLATALIA CERVICULATAE</i> v. Hübschm. 1957	
All.	<i>Dicranellion cerviculatae</i> v. Hübschm 1957	
Ass.	<i>Dicranello cerviculatae-Campylopodetum pyriformis</i> v. Hübschm. 1957s	sporadic
Clas.	BARBULETEA UNGUICULATAE Mohan 1978	
Ord.	BARBULETALIA UNGUICULATAE v. Hübschm. 1960	
All.	<i>GRIMMADION FRAGRANTIS</i> Šm. et Had. 1944	
Ass.	<i>Aloinetum rigidae</i> Stod. 1937	sporadic
Ass.	<i>Trichostomo crispuli-Aloinetum aloidis</i> Guerra et Varo 1981	common
Ass.	<i>Weissietum crispatae</i> Neum. 1971	sporadic

Syntax. Name cat.	Distribution in Serbia
Ass. <i>Weissietum tortilis</i> Neum. 1971	sporadic
Ass. <i>Weissietum controversae</i> Marst. 1988	sporadic
Ass. <i>Barbuletum convolutae</i> Had. et Šm. 1944	sporadic
Ass. <i>Tortulletum inclinatae</i> Stod. 1937	sporadic
Ass. <i>Pottietum lanceolatae</i> Waldh. 1947	common
Ass. <i>Trichostomo-Didymodontetum vinealis</i> Privitera et Puglisi 1989	common
All. <i>PHASCION CUSPIDATI</i> Waldh. ex v. Krus. 1945	
Ass. <i>Pottietum truncatae</i> v. Krus. 1945	common
Ass. <i>Pottietum davallianae</i> (Kühner 1971) Marst. 1981	common
Ass. <i>Dicranelletum rubrae</i> Giac. 1939	sporadic
Ass. <i>Riccio sorocarphae-Funarietum fascicularis</i> Lec. 1978	sporadic
Ass. <i>Funarietum hungaricae</i> Stef. 1969	common
Ord. <i>TORTULO BREVISSIMAE-ALONINETALIA BIFRONTIS</i> Ros & Guerra 1987	
All. <i>ALOINO-CROSSIDION CRASSINERVIS</i> Ros & Guerra 1987	
Ass. <i>Crossidio crassinervis-Pottietum commutatae</i> Ros et Guerra 1987	rare
Ass. <i>Pterygoneretum subsessilis</i> Brullo et al. 1991	rare
Ord. <i>FUNARIETALIA HYGROMETRICAE</i> v. Hübschm. 1957	
All. <i>FUNARION HYGROMETRICAE</i> Had. in Kl. ex v. Hübschm. 1957	
Ass. <i>Funarietum hygrometricae</i> Engel 1949	common
Ass. <i>Pottietum heimii</i> v. Hübschm 1960	rare
All. <i>PHYSCOMITERALLION PATENTIS</i> v. Hübschm. 1957 em. Marst. 1989	
Ass. <i>Physcomitrietum pyriformis</i> v. Hübschm. 1957	rare
Clas. <i>SPLACHNETEA</i> v. Hübschm. 1957	
Ordo <i>SPLACHNELITALIA</i> Had. in Kl. et Had. ex v. Hübschm. 1957	
Ass. <i>Splachnetum pedunculo-vasculosi</i> v. Hübschm. 1957	rare
Clas. <i>GRIMMIETEA ANODONTIS</i> Had. et Vondr. in Jez. et Vondr. 1962	
Ord. <i>GRIMMIETALIA ANODONTIS</i> Šm. 1947	
All. <i>GRIMMION TERGESTINAE</i> Šm. 1947	
Ass. <i>Grimmietum orbicularis</i> All. ex Dem. 1944	common
Ass. <i>Syntrichio calcicolae-Grimmietum anodontis</i> Giac. 1939	common
Ass. <i>Orthotrichum anomali-Grimmietum pulvinatae</i> Stod. 1937	common
Ass. <i>Pseudoleskeelletum catenulatae</i> Jez. et Vondr. 1962	common
Ass. <i>Orthotrichetum rupestris</i> Sjog. 1964	common
All. <i>CROSSIDION SQUAMIFERI</i> Giac. 1951	
Ass. <i>Crossidietum squamiferi</i> Giac. 1951	rare

Syntax. cat.	Name	Distribution in Serbia
Clas.	CTENIDIETEA MOLLUSCI v. Hübschm. ex Grgic 1980	
Ord.	<i>CTENIDIETALIA MOLLUSCI</i> Had. et Šm. in Kl. et Had. 1944	
All.	<i>CTENIDION MOLLUSCI</i> Stef. 1941	
Ass.	<i>Ctenidietum mollusci</i> Stef. 1941.	
Ass.	<i>Solorino-Distichietum capillacei</i> Reimers 1940	
Ass.	<i>Gymnostometum rupestris</i> Phil. 1965	
Ass.	<i>Encalypto streptocarpae-Fissidentetum cristati</i> Neum. 1971	common
Ass.	<i>Gyroweisietum tenuis</i> Marst. 1981	sporadic
Ass.	<i>Tortello tortuosae-Hypnetum fastigiati</i> v. Hübschm. 1971	common
Ass.	<i>Plagiopodo oederi-Orthothecietum rufescentis</i> Gillet 1986	rare
Ord.	<i>SELIGERION CALCAREAE</i> Marst. 1986	
Ass.	<i>Seligerietum calcareae</i> Marst. 1981	rare
All.	<i>ABIETINELLION</i> Giac. ex Neum. 1971	
Ass.	<i>Abietinellium abietinae</i> Stod. 1937	common
Clas.	NECKERETEA COMPLANATAE Marst. 1986	
Ord.	<i>NECKERETALIA COMPLANATAE</i> Jez. et Vondr. 1962	
All.	<i>NECKERION COMPLANATAE</i> Šm. et Had. in Kl. Et Had. 1944	
Ass.	<i>Homomallietum incurvati</i> Phil. 1965	common
Ass.	<i>Pteryginandretum filiformis</i> Hil. 1925	common
Ass.	<i>Homalotheco sericei-Porelletum platyphyllae</i> Storm. 1938	common
Ass.	<i>Anomodontetum attenuati</i> Cain et Sharp 1938	common
Ass.	<i>Cirriphyllietum vaucheri</i> Neum. 1971	sporadic
Ass.	<i>Brachythecietum populei</i> Phil. 1972	common
Ass.	<i>Isothecietum myuri</i> Hil. 1925	common
Ass.	<i>Taxiphylo-Rhynchostegietum muralis</i> Breuer 1968	common
Ass.	<i>Plagiomnio cuspidati-Homalietum trichomanoidis</i> Marst. 1993	common
Ass.	<i>Mnietum cuspidati</i> Felf. 1941	common
Ass.	<i>Anomodonto viticulosi-Leucodontetum sciuroidis</i> Wisn. 1930	common
Ass.	<i>Homalothecio sericei-Neckeretum besseri</i> Jez. et Vondr. 1962	sporadic
All.	<i>PLASTEURHYNCHION MERIDIONALIS</i> Guerra et Varo 1981	
Ass.	<i>Pterogonietum gracilis</i> Giac. 1951	sporadic
Ass.	<i>Leptodontetum smithii</i> Wattez ex Marst. 1992	rare
Ass.	<i>Homalotheco sericei-Neckeradelphetum menziesii</i> (Varo, Guerra et Gil 1977) Guerra et Varo 1981	common
All.	<i>FISSIDENTION PUSILLI</i> Neum. 1971	
Ass.	<i>Seligerietum pusillae</i> Dem. 1944	rare
Ass.	<i>Seligerietum donniana</i> Marst. 1985	rare
Ass.	<i>Seligerio recurvatae-Fissidentetum pusilli</i> Duda 1951	rare

Syntax. Name cat.	Distribution in Serbia
Ass. <i>Rhynchostegiellatum algerianae</i> Giac. 1951	rare
Ass. <i>Rhynchostegiellatum jacquinii</i> Boros ex v.d.Dunk 1972	sporadic
All. <i>ANTITRICHION CURTIPENDULAE</i> v. Krus. 1945	
Ass. <i>Antitrichietum curtipendulae</i> Storm. 1938	sporadic
Ass. <i>Lescuraeetum mutabilis</i> Wilm. 1962	common
Clas. FRULLANIO DILATATAE-LEUCODONTETEA SCIUROIDIS Mohan 1978 em. Marst. 1985	
Ord. <i>ORTHOTRICHETALIA</i> Had. in Kl. Et Had. 1944	
All. <i>ULOTION CRISPAE</i> Barkm. 1958	
Ass. <i>Ulotetum crispae</i> Ochns. 1928	sporadic
Ass. <i>Orthotrichetum lyellii</i> Lec. 1975	common
Ass. <i>Orthotrichetum pallentis</i> Ochns. 1928	rare
Ass. <i>Orthotrichetum striati</i> Gams 1927	rare
Ass. <i>Pylasietum polyanthae</i> Felf. 1941	common
All. <i>SYNTRICHION LAEVIPILOE</i> Ochns. 1928	
Ass. <i>Syntrichietum laevipilae</i> Ochns. 1928	sporadic
Ass. <i>Syntrichietum pulvinatae</i> Pec. 1965	rare
Ass. <i>Orthotrichum fallacis</i> v. Krus. 1945	sporadic
All. <i>FABRONION PUSILLAE</i> (Barkm. 1958) Gil et Guerra 1981	
Ass. <i>Pteryginandro filiformis-Orthotrichetum speciosi</i> Guerra 1982	sporadic
All. <i>LESKEION POLYCARPAE</i> Barkm. 1958	
Ass. <i>Syntricho latifoliae-Leskeetum polycarpae</i> v. Hübschm. 1952	sporadic
Ass. <i>Leskeetum polycarpae</i> Pec. 1965	common
Ass. <i>Anacmptodontetum splachnoidis</i> Mohan 1976	rare
All. <i>Hypno resupinati-Lejeunion ulicinae</i> (Lec. 1979) Marst. 1985	
Ass. <i>Isothecio myosurodis-Neckeretum pumilae</i> Lec. 1979	sporadic
Clas. HYLOCOMIETEA SPLENDENTIS Gillet ex cl.	
Ord. <i>HYLOCOMIETALIA SPLENDENTIS</i> Gillet ex opd.	
All. <i>PLEUROZION SCHREBERI</i> Wisn. 1930	
Ass. <i>Pleurozietum schreberi</i> Wisn. 1930	common
Ass. <i>Polytrichetum juniperinum</i> v. Krus. 1945	common
Ass. <i>Plagiothecio undulati-Sphagnetum quinquefarrii</i> Kurk. 1978	sporadic
Ass. <i>Polytricho longiseti-Dicranetum scoparii</i> Kurk. 1978	sporadic
All. <i>EURHYNCHION STRIATI</i> Waldh. 1944	
Ass. <i>Eurhynchietum striati</i> Wisn. 1930	common
Ass. <i>Eurhynchietum swartzii</i> Waldh. ex Wilm. 1966	common
Ass. <i>Thuidio recogniti-Loeskeobryetum brevirostris</i> Gillet 1986	sporadic

DISCUSSION

Serbia has a native precondition for the development of many bryophyte vegetation types. With 144 recorded bryophyte associations, Serbia is bryo-vegetationally rich, but keeping in mind that no research in this direction has been conducted to date, many new communities can be recorded or even described as new for science, especially in those ecological situations which are not common throughout Europe.

The list gives the estimated bryophyte vegetation types of Serbia. According to field experience, some of the communities are well-defined and wide-spread in similar habitats throughout Serbia. Some others are localized to small niches in single places where the rare edipicators still survive, and so are in danger of extinction. Community and habitat approach to conservation of certain bryophytic taxa is welcome due to the possibility of survival of targeted bryophyte species. Also, further studies will definitely give insight into the real stage, and probably bring new communities overlooked in this bryo-vegetation overview of Serbia.

CONCLUSION

The total of 144 associations recognized in Serbia represents the first data on the composition and structure of the bryophyte vegetation in the area.

The syntaxonomic survey of bryophyte vegetation in Serbia expresses the complex structure of bryophyte communities in Serbia, and gives the idea that these phenomena are not sufficiently known from the point of their distribution, structure or diversity.

Considering that the bryophytes have huge ranges in comparison to the phanerogams, it is not easy to estimate the changes of distribution patterns within the area. It is evident that some southern species extend the ranges to the north, and that the structure of some communities will be changed in future. However, some boreal species and their communities will disappear from Serbia (eg. coprophylic *Splachnetum*

pedunculo-vasculosi v. Hübschm. 1957) due to habitat/substrate loss and climate change.

Bearing in mind many new bryophyte species recorded in Serbia, a new ecological situation can also be expected and communities found.

The bryophyte vegetation in Serbia needs further investigation and it is expected that the knowledge of the diversity of the bryophyte communities will significantly increase.

REFERENCES

- Ando, H. and Matsuo, A. (1984): Applied bryology. *Advances in bryology* **2**: 135-225.
- Braun-Blanquet, J. (1964): Pflanzensozologie. Grundzüge der Vegetationskunde. - Springer, Vienna & New York.
- Dierssen, K. (2001): Distribution, ecological amplitude and phytosociological characterization of European bryophytes. *Bryophytorum Bibliotheca* **56**: 1-289.
- Gallé, L. (1974): Lichenológiai adatok a Jugosláviai vajdaság területéről (Contribution to the lichens of Vojvodina in Yugoslavia). *Bot. Közlem* **61**(1): 37-41.
- Grgić, P. (1978): Fitocenoze briofita na vertikalnom profilu Igmana i Bjelasnice. Doktorska teza. - Univerzitet u Sarajevu. [manuscr.]
- Lakušić, D. (2005): Staništa Srbije – harmonizacija nacionalne nomenklature u klasifikaciji staništa sa standardima međunarodne zajednice. <http://habitat.bio.bg.ac.yu>. - Biološki Fakultet i Ministarstvo Nauke i životne sredine Republike Srbije.
- Marstaller, R. (1993): Synsystematische Übersicht über die Moosgesellschaften Zentraleuropas. *Herzogia* **9**: 513-541.
- Pavletić, Z. (1957): Ökologische Verhältnisse innen der Moosvegetation auf den Kalktuffwasserfällen der Plitwizer Seen. *Acta Botanica Croatica* **16**: 63-88.
- Puglisi, M. (2008): La fitosociologia delle briofite in Italia. In Aleffi, M. (*ed.*) *Biologia ed ecologia delle briofite*. - Antonio Delfino Editore, Roma.
- Smith, A. J. E. (1982): *Bryophyte ecology*. - Chapman and Hall, London.
- von Hübschmann, A. (1986): Prodrömus der Moosgesellschaften Zentraleuropas. *Bryophytorum Bibliotheca* **32**: 1-413.

ПРЕЛИМИНАРНИ ПРЕГЛЕД ВЕГЕТАЦИЈЕ БРИОФИТА У СРБИЈИ

МАРКО САБОВЉЕВИЋ

РЕЗИМЕ

Истраживања флоре, а нарочито вегетације бриофита у Србији, дуго су била запостављана. Из тог разлога, за територију Србије до сада није било података о саставу и структури вегетације бриофита. У раду је дат прелиминарни приказ синтаксономских категорија бриофитских заједница за које се, на основу флористичких података, података о вегетацији бриофита прикупљених на терену и искуства аутора у погледу састава вегетације, процењује да су заступљене на територији Србије.

У пркос 144 овде констатоване бриофитске асоцијације, о екологији бриофита, као и о саставу бриофитске вегетације у Србији, још увек се мало зна. Стога су неопходна даља истраживања, која би омогућила да се диверзитет вегетације бриофита у Србији сагледа у потпуности.