Nomenclature adjustments to neglected syntaxa of the tall-herb hygrophilous communities of the SE-Europe

Abstract

Background and Purpose: During the preparation of a coenological paper concerning the tall-herb vegetation of the Balkans, it emerged that some syntaxa were invalidly described in their original papers, while some other syntaxa had been forgotten or considered invalid according to the current phytosociological literature even if they had been validly published in their original papers. The present study deals with the nomenclatural problems of the Rumicetalia balcanicae Lakušić 1973, a neglected order of the montane tall-herb vegetation, and those of all its related lower-rank syntaxa.

Materials and Methods: All published papers that treated the nomenclatural issues regarding the tall-herb vegetation in the Balkans were analysed. The nomenclature adjustments were made in accordance with the rules of the Code of Phytosociological Nomenclature (ICPN). The original relevés presented in this paper were carried out using the Braun-Blanquet phytosociological approach.

Results and Conclusions: The nomenclature adjustments made in the paper result in the validation of the order Rumicetalia balcanicae and of four alliances: Rumicion balcanici, Ranunculion serbici, Cicerbition pancici and Petasition doerfleri. The validity of the alliance Cirsion appendiculati Horvat, Pawlowski et Walas 1937 was here confirmed while the name citation Geion coccinei Horvat in Quezel 1969 was here given for the first time. Finally several tall-herbs association were here validated and some others were proposed as new.

INTRODUCTION

The tall-herb vegetation of SE Europe has attracted researchers since the beginning of the 20th century. The first botanist who studied this vegetation in the Balkan area was Adamović (1). Subsequently Horvat (2, 3, 4, 5, 6) and Horvat et al. (7, 8) formally described several associations of tall-herbs for the Macedonian and Bulgarian mountains and classified them into two alliances: the Cirsion appendiculati Ht., Pawl. et Walas 1937 and the Geion coccinei Horvat in Quezel 1960. These alliances were included in the order Adenostyletalia Br-Bl. 1931 and in the class Betulo-Adenostyletea Br-Bl. 1931. Further studies were carried out by R. Lakušić (9, 10), R. Lakušić et al. (11) and R. Lakušić & Redžić (12), who introduced four new alliances for the tall-herb vegetation: Petasition doerfleri Lakušić 1968, Rumicion balcanici Lakušić 1973, Ranunculion serbici Lakušić et al 1987 and Cicerbition pancicii Lakušić (1970) 1987. These alliances were originally included in the Balkan endemic order Rumicetalia balcanici Lakušić 1973 and subsequently moved...
into a different order, Cicerbidentalia pancicii Lakušić 1987. More recently some contributions regarding the syntaxonomy of the Balkan tall-herb vegetation were carried out by Randelović & al (13), Randelović (14), Randelović & Zlatković (15). On the basis of the presumed nomenclatural invalidity of the name Rumicetalia balcanici, and in accordance with the concepts already expressed by R. Lakušić, these authors described the new order Cirsietalia appendiculati V. Randelović 2001. Several other studies, dealing with the tall-herb vegetation were subsequently published for the Balkan Peninsula (16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26). Despite this high number of published papers, in which several new nomenclatural proposals were made, the majority of the associations and alliances proposed for classifying the Balkan tall-herb vegetation remained invalidly published. The nomenclatural adjustments that will be made in the present paper lead to: 1) the validation of the order name Rumicetalia balcanici; 2) the validation of some Balkan tall-herb associations and alliances linked to this order.

MATERIALS AND METHODS

All published papers that treated the nomenclatural issues regarding the tall-herb vegetation in the Balkans were analysed. Nomenclatural adjustments were made according to the International Code of Phytosociological nomenclature ICPN (27). Regarding the authorship of the syntaxa Radomir Lakušić is reported simply as “Lakušić”, while Dmitar Lakušić is reported as D. Lakušić. The name Randelović make always reference to Vladimir Randelović both in the text and in the syntaxa names. The nomenclature of the plant species followed EURO+MED plant base (28). For those plant families and genera which were currently still not included in the EURO+MED database reference was made to Flora Europaeae (29).

The term “transgr” make reference to the “transgressive species” according to the definition given in (30).

RESULTS AND DISCUSSION

Order rank

The name Rumicetalia balcanici was proposed for the first time in R. Lakušić (10: page 31) to classify the tall-herb Balkan endemic vegetation developed on the hydromorphic soils of the siliceous massifs. This order was originally composed of three alliances reported as follow: “Cirsiion appendiculati Horvat”, “Geion coccinei Horvat” and “Rumicion balcanici Lakušić”. Since in (10) there were no Horvat’s papers quoted in the reference list the first two names were simply phantom names (Art. 2b) and none of these could be selected as nomenclatural type for the new order Rumicetalia balcanici. For the same reason (Art. 2b) also the name Rumicion balcanici Lakušić was to be considered as invalid. As a consequence the name Rumicetalia balcanici Lakušić 1973 had to be considered invalidly published in its first proposal. This name, however, was gradually forgotten by the Balkan phytosociologists, who preferred to make reference to other names. Up to 1987 the Balkan high-altitude tall-herb communities tended to be classified in the Adenostyletalia (8, 31) or in the Montio-Cardamion Pawl. 1938 (18, 33). Only with R. Lakušić et al. (11) was the old concept of an endemic order restricted to the tall-herb vegetation of the Balkans reaffirmed. As regards the name of this order, however, in (11) the authors did not opt for the name Rumicetalia balcanici, but introduced the reference to a new name: Mulgedietalia pancicii Lakušić 1970. Since none of R. Lakušić’s papers published in 1970 (or in the surrounding years) makes reference to the name Mulgedietalia pancicii, this name (Mulgedietalia pancicii Lakušić 1970) is probably to be considered a phantom name. From a coenological point of view the Mulgedietalia pancicii were partially different from the Rumicetalia balcanici, since Mulgedietalia also included the basophilous tall-herb communities developed on limestone bedrocks, whereas the Rumicetalia balcanici (10) was restricted to the three acidophilous alliances Rumicion balcanici, Cirsion appendiculati and Geion coccinei. The greater ecological amplitude which characterized the Mulgedietalia pancicii as compared to the Rumicetalia balcanici, was supported by the inclusion in this order of three further alliances: Petasio doerfleri Lakušić 1968, Mulgedion pancicii Lakušić 1970 and Ramunculion serbici Lakušić et al. 1987. The name Mulgedietalia pancicii Lakušić, Mišić, Golić 1987, however, is not validly published (Art. 2b) in (11) since this paper lacks of an unambiguous reference to an earlier, effectively published, sufficient diagnosis of both the Cirsiion appendiculati Horvat et al. 1937 and the Geion coccinei Horvat in Quezel 1969, these latter being the only valid published alliances included in the Mulgedietalia pancicii by Lakušić, Mišić, Golić (11). Some years later R. Lakušić & Redžić (12) corrected the name Mulgedietalia pancicii in Cicerbidentalia pancicii Lakušić 1978 and the name Mulgedion pancicii Lakušić 1978 in Cicerbition pancici nomen novum. In addition to being invalid (Art. 5), the name Cicerbidentalia pancicii was clearly a syntaxonomical synonym of the Rumicetalia balcanici Lakušić 1973, since it included the three alliances (Rumicion balcanici, Cirsion appendiculati and Geion coccinei) which were originally classified in the Rumicetalia balcanici.

The invalidity of the names Rumicetalia balcanici, Mulgedietalia pancicii, and Cicerbidentalia pancicii led Randelović (14) and Randelović & Zlatković (15) to propose the new order Cirsietalia appendiculati V. Randj. 2001 (nom. inval. Art. 1; 3i) to classify all the Balkan tall-herb communities developed on the hydromorphic siliceous soils of the subalpine-alpine belt. Since these authors included the alliances Cirsiion appendiculati, Geion coccinei and Rumicion balcanici in the new order Cirsie-
lia appendiculati, this latter can be considered as perfectly overlapping the Rumicetalia balcanici Lakušić 1973.

These reiterated proposals for the establishment of an endemic Balkan order for the high-altitude tall-herbs vegetation were justified on the basis of the strong Balkan endemic floristic component which occurs in this vegetation type. Moreover many of these Balkan endemic species play a dominant coenological role in their community type. Moreover many of these Balkan endemic species play a dominant coenological role in their community type. Moreover many of these Balkan endemic species play a dominant coenological role in their community type. Moreover many of these Balkan endemic species play a dominant coenological role in their community type.}

Diagnostic taxa: Angelica pancicii, Barbarea balcanica, Cardamine acris, Cardamine amara subsp. balcanica, Lactuca pancicii, Cirsium appendiculatum, Cirsium boujartii subsp. wettsteinii, Doronicum austriacum subsp. giganteum (= Doronicum orphanidis Boiss.), Geum coccineum, Heracleum sphondylium subsp. verticillatum, Ranunculus serbicus, Rumex balcanicus, Silene asterias.

Constant taxa: Caltha palustris subsp. laeta, Chaerophyllum hirsutum agg., Deschampsia cespitosa, Filipendula ulmaria, Myosotis palustris, Veratrum lobelianum.

Diagnosis: Tall-herb vegetation developed on different substrates occurring within an altitudinal gradient ranging from the lower-montane to the lower alpine belts.

Distribution: Central, eastern and southern part of the Balkan peninsula, in the territories of Bosnia and Herzegovina, Serbia and Kosovo, Montenegro, Albania, Bulgaria, Macedonia and Greece. From a synchorological viewpoint the Rumicetalia balcanici vegetation belong to three main Balkan biogeographical provinces: Illyrian (Dinaric Mts.), Moesian (Balkan and Rhodopean Mts.) and Scardian-Pindian (Scardian and Pindian Mts.).

**Alliance rank**

⇒ Cirsion appendiculati Horvat, Pawlowski et Walas 1937

(Rumicetalia balcanici, Mulgedio-Aconitetea)

**Name-giving species:** Cirsium appendiculatum

**Typus:** Angelica-Heracleetum verticillati Horvat, Pawlowski et Walas 1937 (7: 186)

**Diagnostic taxa:** Cirsium appendiculatum (transgr.), Cirsium thymphaeum, Angelica pancicii (transgr.), Heracleum sphondylium subsp. verticillatum (transgr.), Doronicum austriacum subsp. giganteum (= Doronicum orphanidis Boiss.) (transgr.)

**Constant taxa:** Athyrium filix-femina, Alchemilla indivisa, Caltha palustris subsp. laeta, Carduus pannonica, Chaerophyllum hisutum, Chaerophyllum aureum
var. balcanicum, Deschampsia cespitosa, Geranium sylvaticum, Milium effusum, Myosotis palustris, Myosotis scorpioides, Rumex alpinus, Rumex arifolius, Saxifraga rotundifolia s.l., Senecio nemorensis, Stelaria nemorum, Telekia speciosa, Veratrum lobelianum.

Diagnosis: Lime-poor substrates, within the subalpine mountain streams banks occasionally affected by turbulent water flows and floristically characterized by true tall-herb species (Fig. 1).

Distribution: The Cirsion appendiculati occurs in Serbia (Mt. Stara planina, Vlasina Plateau and Krajiste region – Balkan-Rodopean system), Kosovo (Mt. Šar planina – Scardo-Pindian system), Macedonia (Mts. Bistra, Pelister – Scardo-Pindian system), Greece (N Pind, Mt. Bela Voda – Scardo-Pindian system) and Bulgaria (Mts. Vitoša, Rila, Pirin – Rodopean system).

Syntaxonomy and nomenclature: In Horvat et al. (7) the following two associations were considered as included in the new alliance Cirsion appendiculati: Ass. with Angelica pancicii and Heracleum verticillatum (from Rila Mts.) and the “Cirsion appendiculati and Caltha laeta. ass.” (from Macedonia). This latter had been invalidly (Art. 2) proposed by Horvat in (3) and subsequently proposed again in (5) with the name Doronico orphanidis-Cirsietum appendiculati (nom. inval. art. 2). The phytosociological table (table VI) presented in (7: page 184-185) is very complex and heterogeneous. Of the three relevés which the author included in the alliance Cirsion appendiculati, the first two were classified in the Angelica and Heracleum ass. and all the species reported in these two relevés exhibited cover-abundance indexes. The third relevé, on the other hand, was included in the Cirsium and Caltha ass. and did not exhibit the cover-abundance indexes. As a consequence the Cirsium and Caltha ass. is to be considered invalid (art. 7), while the Angelica and Heracleum ass. (Angelico pancici-Heracleetum verticillati Horvat et al. 1937) is validly described and, since it is the only element suitable for the typification of Cirsion appendiculati it automatically assumes the role of holotype for this alliance. The lectotypus of the Angelico pancici-Heracleetum verticillati Horvat et al. 1937 was provided by Roussakova (21; page 112) using rel. 2 of table VI in Horvat et al. 1937 (7). This lectotypification is valid and in accordance with Art. 5, Ćarni & Matevski (23) page 163 provided a lectotypification of the name Cirsion appendiculati using the name Doronico austriaci-Cirsietum appendiculati Horvat ex Ćarni & Matevski 2010, this latter being a validation of Horvat’s invalid name Doronico orphanidis-Cirsietum appendiculati. The typus of Doronico austriaci-Cirsietum appendiculati Horvat ex Ćarni & Matevski 2010 was selected using the rel. 1 of Table VI in Horvat et al. 1937. In the same paper (23) the authors designated the Doronico austriaci-Cirsietum appendicu-
that in the original table these two species exhibited cover-abundance values of, respectively, 4 and 3 in the type relevé of the Doronico-Cirsietum, and of 2 and 3 in the type-relevé of the Angelico-Heracleetum.

The following associations are currently included in the Cirsion appendiculati

– Angelico-Heracleetum verticillati Horvat, Pawlowski et Walas 1937
– Doronico gigantei-Cirsietum appendiculati Horvat ex Quezel 1969
– Geo coccinei-Rumicetum alpini Carni et Matevski 2010
– Veratro lobeliani-Cirsietum belyeodii Quezel 1967 (Lectotypus hoc loco designatus: rel. 9 Tab. 19 in Quezel 1967 (25).
– Chaerophyllo hirsuti-Cirsietum oleracei Randelović ex D. Lakušić, Randelović & Di Pietro ass. nov. hoc loco
– Veratro lobeliani-Cirsietum belyeodii Randelović ex D. Lakušić, Randelović & Di Pietro ass. nov. hoc loco
– Filipendulo ulmariae-Cirsietum appendiculati Randelović ex D. Lakušić, Randelović & Di Pietro ass. nov. hoc loco

⇒ Geo coccinei Horvat in Quezel 1969

(Rumicetalia alpini, Mulgedio-Aconitetea)

Basyonim: Geo coccinei Horvat 1960, (Art. 2)

Name-giving species: Geum coccineum

Typus: Geo coccinei-Deschampsietum caespitosae Horvat ex Quezel 1969 (26: 98–100)

Diagnostic taxa: Alchemilla viridisflora, Cirsiurn horr-strichum, Geum coccineum (transgr.), Geum rhodo-peum, Potentilla aurea subsp. chryoceraspea, Pseudor-chis frivaldii, Senecio panicic, Silene asterias (transgr.).

Constant taxa: Agrotis canina, Alchemilla gracilis, Caltha palustris subsp. laeta, Chaerophyllum hirsutum agg., Crepis paludosa, Deschampsia cespitosa, Equisetum palustre, Filipendula ulmaria, Galium palustre, Geum rivale, Junca effusa, Juncus thomasi, Mentha longifolia, Myosotis palustris, Potentilla erecta, Scirpus sylvaticus, Veratrum lobelianum.

Diagnosis: The Geo coccinei communities are developed in the subalpine belt of the W-Balkan-Rhodopean and N-Scardo-Pindian mountains on lime-poor substrates characterized by a constant water flooding (Fig. 2).

Distribution: The Geo coccinei occurs in Serbia (Mt. Stara planina, Vlasina Plateau and Krajiste region – Balkan-Rodopaean system), Kosovo (Mt. Šar-planina – Scardo-Pindian system), Macedonia (Mts. Bistra, Jablanica, Pelister – Scardo-Pindian system), Albania (Mt. Lure – Scardo-Pindian system), Greece (Mt. Bela Voda – Scardo-Pindian system) and Bulgaria (Mts. Vitoša, Rila, Pirin – Balkan-Rodopaean system).

Syntaxon and nomenclature: Although the Balkan phytosociological literature is not in agreement as regards the date of first publication of this alliance [1949 in (31, 36); 1937 in (15)], the correct nomenclatural reference is “Horvat 1960” (5). In fact, the date “1949” refers to the unpublished manuscript: “HOR-VAT, I. 1949: Mountains vegetation of Macedonia. Manuscript – in Macedonian with German summary” and not to the textbook which in the present paper is reported as (4). In (5) the Geon coccinei was defined as an alliance including the marshy meadows developed on the subalpine belt of the siliceous mountains of Macedonia. In (5) the author provided only a short, informal description of the alliance, which in that moment he considered as including the only Coccineo-Deschampsietum and highlighted that the systematic position of the Geo coccinei in the Adenostyletalia was still provisional. It is interesting, however, that Horvat used the term “marshy meadow” for the Geo coccinei in the place of “tall-herb vegetation”, which he always used to describe the communities of the Cirsion appendiculati. In “Vegetation Südosteuropas” (8) the reference to the name Geo coccinei was given as provisional (page 581) even if Horvat was one of the authors of the book. Horvat (1897–1963) died only three years after the publication of the work in which he gave the first diagnosis of the alliance Geo coccinei Horvat 1960, while the book “Vegetation Südosteuropas” was published in 1974 and was edited by Glavač and Ellenberg. It is possible, therefore, that the decision to consider the Geo coccinei as a “special alliance, but still unclear” (page 583), was taken by Glavač and Ellenberg, probably due to the lack of available phytosociological data. The lack of a precise reference to the Geo coccinei in (8) was probably the reason for which this name was also overlooked in the overview on the European phytosociological alliances carried out by Rodwell et al. (35).

Summarizing the name Geo coccinei was (invalidly) proposed (art. 1) for the first time in 1949 (Horvat’s hand-written manuscript) and the subsequent proposal of 1960 (5) was invalid, too (art. 2b). The Coccineo-Deschampsietum Horvat 1935 (the only association included in the alliance) was invalidly described in the original paper (2) and was not validated in (5) since neither a phytosociological table nor a single relevé usable as nomenclatural type was published in either of the papers. Notwithstanding this nomenclatural short-coming, the names Geo coccinei Horvat 1949 and Geo coccinei Horvat 1960 were kept as syntaxonomical reference by many authors in subsequent vegetation surveys concerning Serbia, Macedonia and Greece (14; 15, 23, 27, 36, 37). The association name Geo
coccinei-Deschampsietum caespitosae Horvat 1935 and the alliance name Geion coccinei Horvat 1960, however, were unintentionally validated in Quezel (26), where a survey on the vegetation of the Bela-Vode massif (N-Greece) was presented. In his paper (26: page 99), Quezel identified an “association à Deschampsia caespitosa et Geum coccineum” (making direct reference to the original paper (2) in which Horvat had described the association) and included it in the alliance Geion coccinei Horvat 1949. In the same paper (26) Quezel also presented a phytosociological table (page 98) in which three relevés were classified as belonging to the Deschampsia caespitosa and Geum coccineum association and to the alliance Geion coccinei. In this table the list of the characteristic species (identical for both the association and the alliance) was also given. In the bibliography of the paper references to Horvat (2, 3, 5), and Horvat et al. (7) were reported. As a consequence the association Geo coccinei-Deschampsietum caespitosae Horvat ex Quezel 1969 is to be considered as validly published (art. 2; 6). In the present paper we designated the lectotypus of this association selecting rel. 6, table 2 (page 98) in (26). However the situation regarding the correct author citation for the name Geion coccinei is different. In fact, Quezel (26) cited the Geion coccinei Horvat 1949 in the text, but failed to quote Horvat (1949) in the reference list of his paper. Therefore, in (26) there is no validation of the alliance Geion coccinei, but rather a description of a new alliance where the correct name of this latter is Geion coccinei Horvat in Quezel 1969.

The following associations are currently included in the Geion coccinei:

– Geo coccinei-Deschampsietum caespitosae Horvat ex Quezel 1969

– Carici-Deschampsietum caespitosae Roussakova 2000

– Trollio europeae-Geetum rhodopaei Randelović ex D. Lakušić, Randelović & Di Pietro ass. nov. hoc loco

– Geo rivali-Filipenduletum ulmariae Randelović ex D. Lakušić, Randelović & Di Pietro ass. nov. hoc loco

⇒ Rumicion balcanici Lakušić ex D. Lakušić, Randelović & Di Pietro all. nov. hoc loco

(Rumicetalia balcanici (Montio-Cardaminetea?, Mulgedio-Aconitetea)

Basionym: Rumicion balcanici Lakušić 1973, (Art. 2)

Name-giving species: Rumex balcanicus

Typus: Barbarea balcanicae-Rumicetum balcanici V. Randjelović ex D. Lakušić, Randelović & Di Pietro ass. nov. hoc loco

Diagnostic taxa: Barbarea balcanica (transgr) Cardamine amara subsp. balcanica (transgr) Dactylorhiza cordigera subsp. bosniaca, Pinguicula balcanica, Rumex balcanicus (transgr) Willemetia stipitata subsp. albanica.

Constant taxa: Barbarea balcanica, Caltha palustris subsp. laeta, Cardamine amara subsp. balcanica, Cardamine matthioli, Carex flavo, Carex nigra, Chaerophyllum hirsutum agg., Crepis paludosoa, Dactylorhiza cordigera subsp. cordigera, Deschampsia cespitosa, Epilobium palustre, Filipendula ulmaria, Myosotis palustris, Rumex balcanicus, Veratrum lobelianum.

Diagnosis: Tall-herb communities of the upper-montane and subalpine belts of the SE-Dinarids, W-Balkan-Rhodopean and N Scardo-Pindian mountains. The alliance is characterized by a mixture of tall-herbs and species coming from the meso-hygrophilous grasslands, cryo-hygrophilous peat-bogs and cold oligotrophic springs. The Rumicion balcanici communities can be found on the lime-poor substrates developed nearby the mountain creeks as well as on the humid mild slopes where a high degree of water retention occurs (Fig. 3).
**Distribution:** The *Rumicion balcanici* is found in Montenegro (Mt Bjelasica – SE Dinarides), Serbia (Mt. Kopaonik – continental Dinarides, Mt. Stara planina, Vlasina Plateau and Krajšte region – Balkan-Rodopean system), Kosovo (Mt Prokletije – SE Dinarides, Mt. Šar-planina – Scardo-Pindian system), and Macedonia (Mt. Jablanica – Scardo-Pindian system). The distribution area of *Rumex balcanicus* (Fig. 4) suggests that communities belonging to the alliance *Rumicion balcanici* could also be found in Bulgaria and Albania.

**Syntaxonomy and nomenclature:** The alliance *Rumicion balcanici* was proposed for the first time in (10). It was defined as a tall-herb vegetation developed on the gleyic and hydrogenic soils of the silicate massifs of the Prokletije phytogeographical sector (high-Dinaric province). R. Lakušić did not include any phytosociological table or single relevés in his paper, but only a short informal description of the alliance. In the same paper R. Lakušić stated that the *Rumicion balcanici* substituted the Scardo-Rhodopian *Cirsion appendiculatus* in the SE-Dinarids. Thus, he indirectly included the *Rumicion balcanici* in the class *Mulgedio-Aconitetea* Hadač et Klika 1944 in the SE-Dinarids. This, he indirectly included the *Rumicion balcanici* in the class *Mulgedio-Aconitetea* Hadač et Klika 1944 (at that time known as *Betulo-Adenostyletea*). Three years later, in the “Prodromus of phytocoenosis of Montenegro” (29), the authors introduced the name *Rumicetum balcanici* Lakušić 65. The references “Lakušić 65”, “Lakušić 1965”, or “Lkšć 1965” recurred frequently in the Montenegro phytosociological literature. Nevertheless, no trace of this R. Lakušić’s 1965 manuscript has been found in the recent past, what is lead us to conjecture that this, probably hand-written manuscript, was never published. As R. Lakušić (10) did not include any phytosociological table or single relevés usable as nomenclatural type in his paper, both the association *Rumicetum balcanici* Lakušić 1965 and the alliance *Rumicion balcanici* Lakušić 1973 are to be considered invalidly published (Art. 2b). Nonetheless, references to the name *Rumicion balcanici*, have been made in subsequent vegetation surveys concerning the Balkan area (14, 15, 31, 33, 38, 39).

In order to be phytogeographically consistent with the original description of the alliance *Rumicion balcanici*, the association *Barbareo balcanae-Rumicetum balcanici* V. Randjelović ex D. Lakušić, Randelović & Di Pietro ass. nov. hoc loco (see below) has been selected in the present paper as the typus for the alliance *Rumicion balcanici*. This association was described for Mt. Šutman (Šar-planina), which is located adjacent to Mt. Bjelasica (locus classicus of *Rumicion balcanici*) and in fact, these two montainous massifs show a high degree of floristic and vegetational similarities.

Within the *Rumicion balcanici* are to be included the natural meso-hygrophilous tall-herb communities char-

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B&H = Bosnia and Herzegovina; Mn = Montenegro; Sr = Serbia; Ko = Kosovo; Bu = Bulgaria; Ma = Macedonia; Gr = Greece; Al = Albania
acterized by a negligible anthropogenic impact. As a consequence we have provisionally classified this alliance in the Rumicion balcanici (or in the Adenostylo-
talia) and in the Mulgedio-Aconiteta. Other authors, however, included the Rumex balcanicus communities in other orders and classes. Blečić & R. Lakušić (33) and Jovanović-Dunjić in Mišić et al. (18) classified them in the Montio-Cardaminetea Br.-Bl. et Tx. 1943 while Petrović et al. (39) included the whole alliance Rumicion balcanici in the Rumicietalia alpini Mucina in Karner & Mucina 1993. Indeed, the low frequency of tall-herbs, such as those belonging to the genera Mulgedium (= Lactuca), Aconitum, Ranunculus, Angelica, Doronicum or Cirsium, together with the high occurrence of medium-size species of the genus Cardamine (e.g. C. amara subsp. baltica, C. acris, C. matthioli) and mosses (Brachythecium rivulare, Plagioclados sp.), could lend support to the inclusion of the Rumicion balcanici in the Montio-Cardaminetea. Further field investigations and large-scale comparative studies would be essential in order to establish the most appropriate taxonomic framework for this alliance.

The following associations are currently included in the Rumicion balcanici:

- Cardamino balcanicae-Rumicetum balcanici R. Jovanović 1971 ex D. Lakušić, Randelović & Di Pietro ass. nov. hoc loco
- Barbareo balcanae-Rumicetum balcanici. V. Randje-
lović ex D. Lakušić, Randelović & Di Pietro ass. nov. hoc loco
- Brachythecio rivularis-Rumicetum balcanici V. Randje-
lović ex D. Lakušić, Randelović & Di Pietro ass. nov. hoc loco

⇒ Ranunculetum serbici Lakušić et al. ex D. Lakušić, Randelović & Di Pietro all. nov. hoc loco (Rumicetalia balcanici (Adenostylo-talia), Mulgedio-Aconitenta)

Basyonim: Ranunculetum serbici Lakušić et al. 1987, [Art. 3o; 5]
Name-giving species: Ranunculus serbicus
Typus: Ranunculetum serbici Lakušić et al. ex D. Lakušić, Randelović & Di Pietro ass. nov. hoc loco

Diagnosis: Tall-herb vegetation of the flattened al-
luvial stream plains characterizing the spruce-fir-beech forests area in the C-Balkan peninsula (Fig. 5).

Distribution: On the basis of the phytosociological literature (11, 15, 36, 40) and our personal observations, the Ranunculetum serbici occurs in Bosnia and Herzegovina (Leskovac near Han Pijesak), and in Serbia (Brzečka klisura gorge on Mt. Kopaonik, Vlasina Plateau, Donji Dušnik on Mt. Suva planina).

Syntaxonomy and nomenclature: The alliance Ranunculetum serbici was invalidly published (Art. 3o; 5) in (11). It was based on the single association Ranunculetum serbici Lakušić R., Mišić Lj. & Golic S. 1987 (nom. inval. Art. 3o; 5). The dominant species, Ranunculus serbicus, is a sub-endemic Balkan species with a few relic stations in the Calabria region in S-Italy (41). The Ranunculetum serbici communities exhibit many geographical, ecological and floristic similarities to the tall-herb communities with dominance of Lactuca pancicii. Therefore, it is possible that in the future it could be considered a syntaxonomical synonym of the alliance Cicerbiton pancicii.

The following associations are currently included in the Cicerbiton pancicii:

⇒ Cicerbiton pancicii Lakušić in Lakušić & Redžić ex D. Lakušić, Randelović & Di Pietro all. nov. hoc loco (Rumicetalia balcanici (Adenostylo-talia), Mulgedio-Aco-
nitenta)

Basyonim: Cicerbiton pancicii Lakušić R., in Lakušić & Redžić 1989, [Art. 3o; 5]
Name-giving species: Lactuca pancicii (=Cicerbita pancicii)
Typus: Cirso wettsteinii-Cicerbitetum pancicii Lakušić & Redžić 1989 (12: 149)

Diagnostic taxa: Aconitum burnatii subsp. pentheri, Aconitum toxicum subsp. bosniacum, Angelica sylvestris, Aquilegia blecicii, Lactuca pancicii (transgr.), Cirsium boujartii subsp. wettsteinii (transgr.) Hesperis dinarica, Knautia sarajevensis, Lunaria telekiana, Lactuca aurea

Constant taxa: Aegopodium podagraria, Angelica sylvestris, Calamagrostis varia, Cardamine matthioli, Chaerophyllum hirsutum agg., Lactuca alpina, Deschampsia cespitosa, Epilobium hirsutum, Equisetum palustre, Filipendula ulmaria, Galium palustre, Lychmis flo-cuculi, Mentha longifolia, Myosotis scorpioides, Oenanthe banatica, Polygonum bistorta, Ranunculus aconitifolius, Ranunculus serbicus, Scirpus sylvaticus, Senecio nemoensis, Stella-
ría graminea, Veratrum lobelianum.
**Phytosociological nomenclature of the Balkan tall-herb vegetation**

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**Diagnosis:** Tall-herb communities developed within the humid mild limestone slopes (slope: 15–30°) ranging between the submontane and the subalpine belts, on hydrogenic calkomelanosol soils. The total cover ranges between 95 and 100 %, while the height of the dominant herb-layer between 150 and 200 cm (Fig. 6). The *Cicerbition pancicii* communities are almost always natural vegetation types, sometimes playing the role of potential vegetation, characterized by a negligible anthropogenic impact.

**Distribution:** In Montenegro this alliance occurs in the Canyon of the Tara river (Nevideno, mouth of river Sušica, Bijele vode, Lazin kamen, Izvori near Sušicka pećina, Ćurovac), and Ropojana valley in the Mt. Prokletije. In Bosnia-Herzegovina it occurs in the Canyon of the river Sutjeska (personal field observation). On the basis of the whole distribution of *Lactuca pancicii* it is hypothesizable that the alliance *Cicerbition pancicii* also occurs in Serbia, Albania and Macedonia.

**Syntaxonomy and nomenclature:** The alliance *Cicerbition pancicii* was proposed in (11) under the phantom name of *Mulgedion pancicii* Lakušić. Two years later R. Lakušić & Redžić (12) introduced the new name *Cicerbition pancicii* Lakušić (nomen novum), and included in it four new tall-herb associations which were described for the Tara canyon in Montenegro (*Cirsio-Cicerbitetum pancicii*, *Cicerbito-Petasitetum hybridi*, *Molinio-Adenophoretum lilifoliae*, *Chaerophyllo-Cirsietum wettsteinii*). The phytosociological relevés of these associations were arranged in a phytosociological table (Tab. 4 page 150) composed of 5 relevés. The first two relevés were included in the *Molinio-Adenophoretum* while the other three relevés were classified as belonging to *Cirsio-Cicerbidetum pancicii*, *Cicerbito-Petasitetum* and *Chaerophyllo-Cirsietum* respectively. These latter three associations were therefore validly published by virtue of their single relevés, which automatically played the role of nomenclatural types of each of the three associations. In contrast, the *Molinio-Adenophoretum* has to be considered as invalidly described, due to the occurrence of two relevés usable as nomenclatural type (Art. 3o; 5). The alliance *Cicerbition pancicii* Lakušić & Redžić 1989 is thus invalid because there are three valid associations included in the original diagnosis of this alliance and none of these was designated as typus (Art. 3; 5). In the present paper the alliance *Cicerbition pancicii* is validated through the designation of the *Cirsio-Cicerbitetum pancicii* Lakušić & Redžić 1989 as lectotypus.

The following associations are currently included in the *Cicerbition pancicii*:

- *Chaerophyllo hisuti-Cirsietum wettsteinii* Lakušić & Redžić 1989
- *Cicerbito pancicii-Petasitetum hybridi* Lakušić & Redžić 1989
- *Cirsio wettsteinii-Cicerbitetum pancicii* Lakušić & Redžić 1989
- *Molinio arundinaceae-Adenophoretum lilifoliae* Lakušić & Redžić ex D. Lakušić, Randelović & Di Pietro ass. nov. hoc loco

⇒ *Petasition doerfleri* Lakušić ex D. Lakušić, Randelović & Di Pietro all. nov. hoc loco

*(Thlaspietea rotundifolii, Thlaspietalia rotundifolii)*

**Basyonim:** *Petasition doerfleri* Lakušić 1968 [Art. 2b]

**Name-giving species:** *Petasites doerfleri*

**Typus:** *Valeriano bertiscei-Petasitetum doerfleri* D. Lakušić & Di Pietro ass. nova hoc loco
Diagnostic taxa: Adenostyles alliariae, Geum bulgaricum, Heracleum spondylium subsp. orsini, Petasites doerferi, Potentilla montenegrina. Wulfenia carinthiaca (= W. blecicii)

Constant taxa: Arabis alpina, Cardamine glauca, Cystopteris montana, Doronicum columnae, Ranunculus breyninus (= Ranunculus oreophilus) Saxifraga rotundifolia s.l. Senecio rupestris

Diagnosis: Vegetation occurring within the humid and stable coarse-grained calcareous screes and in the boulder-strewn fields of the upper-montane and subalpine belts of the SE Dinarides. The Petasition doerferi vegetation is characterized by a mixture of small creeping plants and tall-herbs. It is developed on the flat or moderately steep slopes (0–30°) characterized by initial calcokolanosol soils. The total cover of the vegetation is about 50–80%. The height of the dominant herb-layer may (in rare cases) reach 100 cm. The majority of the communities classified in the Petasition doerferi represents a typical form of natural potential vegetation. (Fig. 7).

Distribution: Mts Prokletije in Montenegro and Albania. The information about the occurrence of the Petasition doerferi communities in the Herzegovina are to be confirmed. Physiognomically similar communities dominated by the tall-herbs Adenostyles alliariae and Heracleum orsini were recorded in Montenegro within the subalpine humid stable screes of Mt. Durmitor and Mts Komovi.

Syntaxonomy and nomenclature: The alliance Petasition doerferi was originally described in (9). This alliance included the plant communities with dominance of tall herbs developed on humid stable screes. Because the dominant tall-herbs occurring in the Petasition doerferi communities exhibited high cover values (up to 40–60%), this alliance was originally classified in the Adenostylesia Br.-Bl. 1931 and in the Mulgedio-Acomiteitae (formerly Betulo-Adenostyletea). R. Lakušić (9) included in the Petasition doerferi the following new associations: Adenostylo-Petasitetum doerferi, Geetum bulgarici, Linario-Daphnetum oleoides and Dorono-Wulfenietum blecicii. Only the Dorono-Wulfenietum blecicii, out of these four associations, was described through a complete phytosociological table. The other three associations were simply arranged in a summarizing synoptic table reporting only the characteristic species of each association (three species per association). As a consequence, these three associations are to be considered invalid (art. 2b, 7). The Dorono-Wulfenietum is the only validly described association occurring in the original diagnosis of the Petasition doerferi. It is, therefore, the only element usable as nomenclatural type for the alliance. This role, however, cannot be played by the Dorono-Wulfenietum blecicii since the species Petasites doerferi does not occur in the phytosociological table of the association.

Owing to the lack of Petasites doerferi in the only validly published association of the alliance, the name Petasition doerferi Lakušić 1968 is to be considered invalid (Art. 3f). The lack of knowledge about this nomenclatural shortcoming led to the name Petasition doerferi being subsequently used in many important national and international vegetation surveys (31, 33, 35, 39).

As already mentioned, the association Doronico-Wulfenietum blecicii is validly published and therefore suitable to be used as nomenclatural type for an eventual new alliance having the same diagnosis as the Petasition doerferi, but bearing a different name. Nevertheless, we have opted to validate the name Petasition doerferi Lakušić 1968 all nov. hoc loco, designating the holotypus in the association Valeriano bertisci-Petasitetum doerferi D. Lakušić & Di Pietro ass. nov. hoc loco (see below) which exhibits its locus classicus in the Mt. Maja Jezerces in the Prokletije Mrs.(NE-Albania). Two main reasons led us to opt for this solution. First, Petasites doerferi is endemic to the SE-Dinaric humid and stable calcareous screes, so that it is perfectly suitable for representing, both geographically and ecologically, the vegetation in issue (Fig. 7). Second, the possible choice of Doronico-Wulfenietum blecicii would have entailed the abandonment of a well-known name (Petasition doerferi), owing to the aforementioned lack of the name-giving species (Petasites doerferi) in the original phytosociological table of the Dorono-Wulfenietum. This would have meant introducing a new name, and therefore adding confusion to an already intricate nomenclatural issue.

From a coenological point of view the majority of the characteristic and constant species of the alliance Petasition doerferi exhibit ecological features which are closer to those of the scree habitats than to those of the tall-herb ones. In fact, with the exception of Adenostyles alliariae and Lactuca pancicii (both occurring in the typical tall-herb vegetation, too), all the other species reported in the phytosociological table of the association Valeriano-Petasitetum (Table 1) are known as typical scree species. For this reason, and in contrast to the diagnosis made in (9), the alliance Petasition doerferi is here classified in the Thlaspietea rotundifoliī.

The following two associations are to be considered as included in the Petasition doerferi at present:

– Doronico-Wulfenietum blecicii Lakušić 1968
– Valeriano bertisci-Petasitetum doerferi D. Lakušić & Di Pietro ass. nova hoc loco

It was not possible for us to formalize the validation of the Geetum bulgarici and the Linario-Daphnetum (included by R. Lakušić (9) in the original diagnosis of the Petasition doerferi), since at present there are no published phytosociological tables or single relevés from which to select a possible nomenclatural type.
Validation of some association names originally included in the order Rumicetalia balcanici

**Chaerophylla hirsutum-Cirsietum oleracei** Randelović ex D. Lakušić, Randelović & Di Pietro ass. nov. hoc loco

(Cirsion appendiculati, Rumicetalia balcanici (Adenostyletalia), Mulgedio-Aconitetea)

[Orig. Chaerophyllo-Cirsietum oleracei Randelović in Randelović & Zlatković 2010, (Art. 30, 5)]

- Type relevé (Typus hoc loco designatus): Randelović & Zlatković 2010, p. 286, Tab. 30, rel. 2
- Name-giving species: *Chaerophyllum hirsutum*, *Cirsium oleraceum*
- Diagnostic taxa: *Cirsium oleraceum*, *Chaerophyllum hirsutum*
- Constant taxa: *Mentha x verticillata, Filipendula ulmaria, Alchemilla gracilis, Potentilla erecta, Myosotis scorpioides, Galium palustre*

**Veratrum lobelianum-Cirsietum heleniioidis** Randelović ex D. Lakušić, Randelović & Di Pietro ass. nov. hoc loco

(Cirsion appendiculati, Rumicetalia balcanici (Adenostyletalia), Mulgedio-Aconitetea)

[Orig. Cirsietum heleniioidis Randelović in Randelović & Zlatković 2010, (Art. 30, 5)]

- Type relevé (Typus hoc loco designatus): Randelović & Zlatković 2010, p. 283, Tab. 29, rel. 4
- Name-giving species: *Veratrum lobelianum*, *Cirsium heleniioides*
- Diagnostic taxa: *Cirsium heleniioides*
- Constant taxa: *Veratrum lobelianum, Filipendula ulmaria, Agrostis canina, Potentilla erecta*

**Trollio europaei-Geetum rhodopaei** Randelović ex D. Lakušić, Randelović & Di Pietro ass. nov. hoc loco

(Geion coccinei, Rumicetalia balcanici (Adenostyletalia), Mulgedio-Aconitetea)

[Orig. Trollio-Geetum rhodopaei Randelović in Randelović & Zlatković 2010, (Art. 30, 5)]

- Type relevé (Typus hoc loco designatus): Randelović & Zlatković 2010, p. 269, Tab. 26, rel. 10.
- Name-giving species: *Geum rhodopeum*, *Trollius europaeus*
- Diagnostic taxa: *Geum rhodopeum, Trollius europaeus, Dactylorhiza cordigera*
- Constant taxa: *Veratrum lobelianum, Plagiommnium elatum, Juncus effusus, Potentilla erecta, Myosotis scorpioides.*

**Geo rivale-Filipenduletum ulmariae** V. Randelović in Randelović & Zlatković ex D. Lakušić, Randelović & Di Pietro ass. nov. hoc loco

(Geion coccinei, Rumicetalia balcanici (Adenostyletalia), Mulgedio-Aconitetea)

[Orig.: Geo-Filipenduletum ulmariae V. Randelović & Zlatković 2010: (nom. inval. Art. 3o, 5)]

- Type relevé (Typus hoc loco designatus): Randelović & Zlatković 2010, p. 278, Tab. 28, rel. 9.
- Name-giving species: *Geum rivale, Filipendula ulmaria*
- Diagnostic taxa: *Geum rivale, Geum rhodopeum, Geum rhodopeum x rivale, Filipendula ulmaria*
- Constant taxa: *Veratrum lobelianum, Plagiomnium elatum, Lathyrus pratensis, Scirpus sylvaticus, Myosotis scorpioides, Carex rostrata, Succisa pratensis, Carex nigra, Potentilla erecta.*

**Cardamino balcanicae-Rumicetum balcanici** R. Jovanović ex D. Lakušić, Randelović & Di Pietro ass. nov. hoc loco

(Rumicion balcanici, Rumicetalia balcanici (Adenostyletalia), Mulgedio-Aconitetea)

[Orig.: Cardamino-Rumici-Calichetum R. Jov. 1971 (Art. 2)]


- Type relevé (Typus hoc loco designatus): Mišić et al. 1978, p. 346, Tab. 64, rel. 4.
- Name-giving species: *Cardamine amara subsp. balcanica, Rumex balcanicus*
– Diagnostic taxa: *Cardamine amara* subsp. *balcanica*, *Rumex balcanicus*

– Constant taxa: *Caltha cornuta*, *Crepis paludosa*, *Myosotis palustris*, *Epilobium palustre*, *Poa palustris*

Note: In the original paper of Jovanović-Dunjic (17) the epithet “*Cardamino*” occurring in the name of the association “*Cardamino-Rumici-Calthetum*” referred to the taxon *Cardamine amara*. The community was described for the Mt. Stara planina where only the sub-species *C. amara* subsp. *balcanica* Marhold, Ančev & Kit Tan occurs (42). The *Cardamino balcanicae-Rumicetum balcanici* occurs in C-Serbia on the Mt. Kopaonik, too (personal field observation).

**Table 1.** Valeriano bertiscei-Petasitetum doerfleri D. Lakušić & Di Pietro ass. nova hoc. loco Sampled by: D. Lakušić (27.7.2011). The phytosociological relevés of the table were performed according to Braun-Blanquet (45)

<table>
<thead>
<tr>
<th>Locality</th>
<th>Albania, Maja Jezercë</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latitude (N)</td>
<td>42.450252 42.450252 42.450252 42.450252 42.449354</td>
</tr>
<tr>
<td>Altitude (m)</td>
<td>2100 2100 2100 2100 2150</td>
</tr>
<tr>
<td>Cover (%)</td>
<td>50 60 60 80 70</td>
</tr>
<tr>
<td>Slope (%)</td>
<td>20 10 10 5 5</td>
</tr>
<tr>
<td>Aspect</td>
<td>SW SW SW SW SW</td>
</tr>
<tr>
<td>Relevé area (m²)</td>
<td>16 8 2 10 6</td>
</tr>
<tr>
<td>Rel.no.</td>
<td>1 2 3 4 (typus) 5</td>
</tr>
</tbody>
</table>

Char. of association and alliance

| Petasites doerleri | 3.4 3.4 3.4 4.4 3.4 | 3.4 |
| Valeriana bertiscea | 1.1 1.1 + 1.1 1.3 | 1.3 |
| Heracleum sphondylium subsp. orsinii | – – – – 1.1 | 1.1 |

Char. of order and class

| Adenostyles alliariae | – – – – 1.1 | 1.1 |
| Doronicum columnae | – – + 1.2 1.1 | 1.1 |
| Leontodon montanus | 1.1 1.1 + 1.1 – | – |
| Salix serpillifolia | + 1.2 1.3 – | – |
| Ranunculus crenatus | 1.1 1.1 1.1 – | – |
| Arabis alpina | – – – – 1.1 | 1.1 |

Other species

| Poa alpina var. vivipara | 1.1 1.1 1.1 1.2 1.1 | 1.1 |
| Cystopteris montana | – + – 1.1 – | – |
| Taraxacum sp. | – – + – | – |
| Armeria alpina | 1.1 + – | – |
| Senecio rupestris | – – – + | – |

Note: In the original paper of Jovanović-Dunjic (17) the epithet “*Cardamino*” occurring in the name of the association “*Cardamino-Rumici-Calthetum*” referred to the taxon *Cardamine amara*. The community was described for the Mt. Stara planina where only the sub-species *C. amara* subsp. *balcanica* Marhold, Ančev & Kit Tan occurs (42). The *Cardamino balcanicae-Rumicetum balcanici* occurs in C-Serbia on the Mt. Kopaonik, too (personal field observation).

**Barbareo balcanae-Rumicetum balcanici** V. Randjelović ex D. Lakušić, Randelović & Di Pietro ass. nov. hoc loco

(Rumicion balcanici, Rumicetalia balcanici (Adenostyleta), Mulgedio-Aconiteta)


– Type relevé (see below)

– Name-giving species: *Barbarea balcana*, *Rumex balcanicus*

– Diagnostic taxa (based on two releves made in locus classicus): *Rumex balcanicus*, *Barbarea balcana*, *Cardamine matthioli*, *Trifolium badium*, *Willemetia stipitata*, *Pedicularis verticillata*, *Silene asterias*, *Saxifraga rotundifolia*

– Type relevé (Typus hoc loco designatus): Serbia (Kosovo), Šar-planina Mt., Šutman, between Tija Voda and Belojezerski Rid, altitude 2180 m, relevé area 25 m², slope 0, cover 100%, silicate, sampled by Randelović using the 7-degree Braun-Blanquet scale, 01.08.1997.
Plant list: (herb layer): Rumex balcanicus 5, Barbarea balcanica 1, Veratr um lobelianum 1, Caltha palustris 1, Cardamine matthioli 1, Pedicularis verticillata 1, Phleum alpinum +, Saxifraga rotundifolia +, Trifolium badium +, Willetietia stipitata +.

Note: The Barbarea balcanicae-Rumicetum balcanici is developed on siliceous substrates of the spring peat-bogs occurring on Mt. Šar-planina. The association is mainly composed of medium-size herbaceous hygrophytic plants.

Brachythecio rivularis-Rumicetum balcanici D. Lakušić, Randelović & Di Pietro ass. nov. hoc loco
(Rumicion balcanici, Rumicetalia balcanici (Adenostyleta), Mulgedio-Aconitetea)

[Orig. Rumicetum balcanici (Lakušić 1965) Randelović 2001 [Art. 1]]
– Type relevé (Typus hoc loco designatus): Randelović & Zlatković 2010, p. 266, Tab. 25, rel. 2
– Name-giving species: Brachythecium rivulare, Rumex balcanicus
– Diagnostic taxa: Rumex balcanicus
– Constant taxa: Plagiochilla asplenioides, Veratr um lobelianum, Chaerophyllum hirsutum, Brachythecium rivulare, Carex nigra, Caltha palustris, Ranunculus acris, Mentha longifolia, Potentilla erecta, Myosotis scorpioides

Note: In his PhD thesis (14), published later as Monograph “Flora and vegetation of Vlasina Plateau” (15), Randelović provided an analytical table of a community dominated by Rumex balcanicus which was composed of 5 relevés. According to the author this community (from Vlasina Plateau in SE Serbia) exhibited strong ecological similarities with the Rumicetum balcanici invalidly described by R. Lakušić (10) for the Mt. Bjelasica in Montenegro. Accordingly he proposed the new name Rumicetum balcanici (Lakušić 1965) Randelović 2001 for the Vlasina Plateau communities. In (14) V. Randjelović published many syntaxa bearing the authorship reference “V. Randj. 2001”. The year “2001” refers to the first version of the PhD manuscript which was concluded in 2001, but formally published in 2002. Just nine copies of this PhD thesis were printed, so the new syntaxa published in it are to be considered invalid (Art. 1). Subsequently, the syntaxonomical results of this PhD thesis (14) were made available to the international phytosociological community when it was published as a monograph entitled “Flora and vegetation of Vlasina Plateau” (15), where the 5 relevés of the association Rumicetum balcanici (Lakušić 1965) Randelović 2001 were proposed again. Only six species (Rumex balcanicus, Caltha palustris subsp. laeta, Carex flav a, Carex nigra, Filipendula ulmaria and Veratr um lobelianum), out of the fifty-four species obtained summing the species occurring in the Rumex balcanicus communities sampled by R. Lakušić on Mt Bjelasica (10) with those sampled by V. Randjelović on the Vlasina Plateau (15), were found to occur simultaneously in both the communities. This strong floristic difference is probably due to the fact that Mt Bjelasica and Vlasina Plateau belong to two geographically separated montainous ranges (Dinarids and Rhodopean Mts.), each of which fall within a different phytogeographical unit (8, 43). As a consequence, we propose here to distinguish the Rumex balcanicus communities found in these two areas in the form of two different associations. The communities of the Vlasina Plateau are here included in the new association Brachythecio rivularis-Rumicetum balcanici ass. nov. hoc loco. The communities of Mt. Bjelasica are provisionally named with the only nomenclatural reference available at present, that is, the invalid name Rumicetum balcanici Lakušić (1965) 1973. In fact, R. Lakušić (10) did not provide any phytosociological table or single relevé usable for a possible validation or for the proposal of a new name.

Molinio arundinaceae-Adenophoretum lilifoliae Lakušić & Redžić ex D. Lakušić, Randelović & Di Pietro ass. nov. hoc loco
(Cicerbition pancicii, Rumicetalia balcanici (Adenostyleta), Mulgedio-Aconitetea)

[Orig. Molinio-Adenophoretum lilifoliae Lakušić & Redžić 1988, (Art. 3o, 5)]
– Type relevé (Typus hoc loco designatus): Lakušić & Redžić 1989, p. 150, Tab. 4, rel. 2.
– Name-giving species: Molinia arundinacea, Adenophora lilifolia
– Diagnostic taxa: Molinia arundinacea, Adenophora lilifolia, Lactuca pannicii, Clematis recta.
– Constant taxa: Calamagrostis varia, Thalictrum simplex, Prunella vulgaris.

Ranunculetum serbici Lakušić et al. ex D. Lakušić, Randelović & Di Pietro ass. nov. hoc loco
(Ranunculion serbici, Rumicetalia balcanici (Adenostyleta), Mulgedio-Aconitetea)

[Orig. Ranunculetum serbici Lakušić R., Mišić LJ. & Golić S. 1987, (Art. 3o, 5)]
– Type relevé (Typus hoc loco designatus): Lakušić et al., 1987, Tab. 1, rel. 5.
– Name-giving species: Ranunculus serbicus
– Diagnostic taxa: Ranunculus serbicus
– Constant taxa: Myosotis palustris, Cardamine matthioli, Filipendula ulmaria, Mentha longifolia, Ranunculus aconitifolius

Equiseto polystachii-Ranunculetum serbici V. Randjelović in Randelović & Zlatković 2010 ex D. Lakušić, Randelović & Di Pietro ass. nov. hoc loco
A new association and a lectotypification in the alliance Petasition doerfleri

Doronico-Wulfenietum blecicii Lakušić 1968

(Petasition doerfleri, Thlaspietalia rotundifolii (prov.), Thlaspieta rotundifolii)

– Type relevé (lectotypus hoc loco designatus): Lakušić 1968, p 39, Tab. 27, rel. 3.

– Name-giving species: Doronicum columnae, Wulfenia carinthiaca

– Diagnostic taxa: Petasites doerfleri, Wulfenia blecicii

– Constant taxa: Valeriana bertiscea, Poa alpina, Leonotodon montanus, Doronicum columnae

Note: The Valeriano bertisceae-Petasitetum doerfleri is developed within the cold and humid stable coarse-grained calcareous screes and boulder-strewn fields of the subalpine belt of the Prokletije Mts. (Fig. 7). It occurs on midslopes (5–20°) on the initial calcokomelanosol soils. The total vegetation cover ranges between 50 and 80 %. The association is floristically poor with the cryophytic, tall-herb Petasites doerfleri playing the role of dominant species. The rest of the specific component is composed of small-size creeping or tufted hemicyclophytes and hemaphytes.

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Phytosociological nomenclature of the Balkan tall-herb vegetation

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