

# PROBLEMS OF CLASSIFICATION OF DWARF PINE SCRUB INTO HIGHER SYNTAXA

## PROBLEM KLASIFIKACIJE VIŠJIH SINTAKSONOV RUŠEVJA

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### ABSTRACT

#### Problems of classification of dwarf pine scrub into higher syntaxa

We harmonised the syntaxonomic units *Hyperico grisebachii-Pinenion mugo*, *Rhodothamno-Pinenion mugo* and *Rhodothamno-Pinetum mugo* according to the Code of Phytocenological Nomenclature (WEBER et al. 2000).

Keywords: phytocenology, syntaxonomy, *Pinus mugo*, Southeastern Alps, Dinaric Alps, Balkan Peninsula.

### IZVLEČEK

#### Problem klasifikacije višjih sintaksonov ruševja

Po Kodeksu fitocenološke nomenklature (WEBER et al. 2000) smo uskladili sintaksonomske enote *Hyperico grisebachii-Pinenion mugo*, *Rhodothamno-Pinenion mugo* in *Rhodothamno-Pinetum mugo*.

Ključne besede: fitocenologija, sintaksonomija *Pinus mugo*, jugovzhodne Alpe, Dinaridi, Balkanski polotok.

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## 1 INTRODUCTION

For preparation of the list of higher syntaxa of European vegetation, ČARNI & MUCINA (2015) dealt among other things with the validity or invalidity of the higher syntaxa of dwarf pine scrub of southern Europe, mainly the central Balkan Peninsula. They dealt primarily with the correctness of alliances or

sub-alliances as well as associations of dwarf pine scrub in this region. They found some inaccuracies of descriptions and designations of syntaxa and tried to correct the inaccuracies of these in accordance with the Code of Phytocenological Nomenclature (WEBER et al. 2000).

## 2 DISCUSSION

In (their) opinion, the Dinaric-Central Balkan sub-alliances *Hyperico grisebachii-Pinenion mugo*, as proposed by ZUPANČIČ (2013) or *Violo biflorae-Pinenion mugo* as REDŽIĆ (2000, 2007 in ČARNI & MUCINA 2015) proposed, are geographically too narrow. At the same time, they find that both named sub-alliances are invalidly named. Instead of these they propose a higher synsystematic unit – the alliance *Hyperico grisebachii-Pinion mugo*, which would cover a wide phytogeographic region of the Balkan Peninsula. They state as characteristic and distinguishing species of the alliance, 20 Dinaric-Balkan species, 11 of which were proposed by ZUPANČIČ (2006: 164) for the sub-alliance *Hyperico grisebachii-Pinenion*, and two species from his wider list of Dinaric-Balkan, Balkan, Southeast- and East-European species, which characterise the phytogeographic region where grow the stands of the dwarf pine referred to the sub-alliance *Hyperico grisebachii-Pinenion mugo* (ZUPANČIČ 2013: 163). ČARNI & MUCINA (2015: 293) added to the characteristic and distinguishing species a further seven species, including four species, *Pinus mugo*, *Rhododendron hirsutum*, *Rosa pendulina* and *Sorbus mougeotii*, which are widespread from the altimontane to alpine zones from the west to the southeast of Europe, in spruce, larch, pine and beech forests, dwarf pine and scrub willow, alder and similar stands. Above all we classify them in the group of spruce and acidophilous pine forests species. Of the other three, two species, namely *Achillea alexandri-regis* and *Geum bulgaricum*, thrive mainly in non-forest habitats, only here or there in very open scrub or woodland. *Wulfenia caranthiaca*, though, is widespread in the sub-Alpine belt of the Balkan Peninsula and in the Eastern Limestone Alps and it is a southeast-Illyrian-Carnian geoelement. Its role as a diagnostic species for the alliance *Hyperico grisebachii-Pinion mugo* is relative, since we must also consider it as a relative differential species for the Illyrian-Balkan association *Wulfenio caranthiaceae-Pinetum mugo*.

I divided the species that I have mentioned as diagnostically acceptable for the sub-alliance *Hyperico grisebachii-Pinenion mugo*, into characteristic and differential species. Characteristic species (ZUPANČIČ 2013: 164) are constants with a high level of presence and medium cover value. Differential species (ZUPANČIČ 2013: 164) are non-forest species and are relative, which in individual regions here and there pass over into dwarf pine scrub; more frequent and with higher presence are in the eastern part of the central Balkan Peninsula. They also well characterise the wider Illyrian-Balkan phytogeographic region, everywhere where is dwarf pine scrub.

For the most part, species of the order *Vaccinio-Piceetalia* and class *Vaccinio-Piceetea* dominate in the stands of the dwarf pine associations. Therefore, I see no reason for a new order and class, which would combine dwarf pine scrub. There is not enough species, which would have exclusively diagnostic value for an independent order or class of dwarf pine scrub, actually there are no such species, so it would be more appropriate to retain dwarf pine scrub in the order *Vaccinio-Piceetalia* and class *Vaccinio-Piceetea*. Similarly, I see no reason for a new alliance, because Leibundgut's alliance *Erico-Pinion mugo* includes and clearly delineates dwarf pine from forest spruce phytocenoses. We have only supplemented the alliance *Erico-Pinion mugo* with some characteristic and differential species that are mostly constants in dwarf pine stands (ZUPANČIČ 2013: 160–162). For the sake of clarity, let us again state the characteristic and differential species of the alliance *Erico-Pinion mugo*. Characteristic species are: *Arctostaphylos uva-ursi*, *Carex alba*, *Daphne striata*, *Hypericum richeri* subsp. *grisebachii*, *Laserpitium peucedanoides*, *Lonicera caerulea* subsp. *borbasiana*, *Pinus mugo* subsp. *mugo*, *P. mugo* subsp. *uncinata*, *Rhododendron hirsutum*, *R. ferrugineum*, *R. x intermedium*, *Rhodothamnus chamaecistus*, *Rubus saxatilis*, *Salix silesiaca*, *Senecio abrotanifolius* and *Thesium rostratum*. Differential species are: *Arctostaphylos alpi-*

*nus*, *Erica carnea*, *Larix decidua*, *Polygala chamaebuxus*, *Pinus cembra*, *Pyrola rotundifolia* and *Salix hastata*. (ZUPANČIČ 2013: 162). It is interesting that MU-

CINA and colleagues (1993) in a monograph on forest associations of Austria respected Leibundgut's alliance *Erico-Pinion mugo*.

### 3 VALIDATION OF SYNTAXA

I insist on the uniform alliance of dwarf pine *Erico-Pinion* according to Leibundgut 1948. Within the framework of this alliance, a number of sub-alliances are possible based on the phytogeographic principle with otherwise rare, specific plant species, which for the most part thrive only in a specific phytogeographic region. I therefore again propose on the basis of the Code (WEBER et al. 2000), the sub-alliances *Hyperico grisebachii-Pinenion mugo* for the Illyrian-Balkan region and *Rhodotamnino-Pinenion mugo* for the Southeast Alpine(-Illyrian) region (see also ZUPANČIČ 2013):

***Hyperico grisebachii-Pinenion mugo* (ČARNI & MUCINA 2015) Zupančič suball. nova hoc loco**  
(*Erico-Pinion mugo*, *Vaccinio-Piceetalia*, *Vaccinio-Piceetea*)

Syn.: *Violo biflorae-Pinenion mugo* Radžić 2000 (ICPN<sup>2</sup> Art. 1)

*Violo biflorae-Pinenion mugo* Redžić 2007 (ICPN Art. 5. 26 & 5)

Type: *Hyperico grisebachii-Pinetum mugo* (Ht. 1938) Zupančič, T. Wraber & Žagar 2004, (ČARNI & MUCINA, 2015: 293).

Characteristic species: *Hypericum richeri* subsp. *grisebachii*, *Lonicera caerulea* subsp. *borbasiana*, *Thymus balcanus*, *Salix silasiaca* and *Doronicum columnae* (ZUPANČIČ 2013).

Differential species: *Jasione orbiculata*, *Saxifraga rotundifolia* var. *repanda* (= *S. rotundifolia* var. *hirsuta*), *Geranium caeruleatum*, *Pimpinella serbica*, *Senecio procerus* and *Sesleria rigida* (ZUPANČIČ 2013).

Geographic distribution: southeast Slovenia, southeast Croatia, eastern Herzegovina, central Bosnia, northern Montenegro, north-western Macedonia.

***Rhodotamnino-Pinenion mugo* Zupančič suball. nova hoc loco**

(*Erico-Pinion*, *Vaccinio-Piceetalia*, *Vaccinio-Piceetea*)

Nom. type: *Rhodotamnino-Pinetum mugo* (Aichinger 1933) Zupančič & Žagar in Zupančič 2015 (ZUPANČIČ et al. 2006, ZUPANČIČ 2013)

Syn.: *Pinetum mughi calcicolum* Aichinger 1933 (ICPN Arts. 3b & 5)

*Rhodotamnino-Rhodoretum hirsuti* (Aichinger 1933) Br.-Bl. & Sissingh 1939 (ICPN Arts. 10 c, 42, 43), *Rhodotamnino-Rhododendretum hirsuti* (Aichinger 1933) Br. - Bl. & Sissingh in Br. - Bl. et al. 1939 corr. Zupančič & Žagar 2004 s. lat. (ICPN Arts. 10 c, 42, 43).

Characteristic species: *Rhodotamnus chamaecistus*, *Laserpitium peucedanoides*, *Senecio abrotanifolius*, *Heliosperma alpestris* and *Genista radiata*.

Geographic distribution: northern Italy (South Tyrol, Trentino, Carnic Alps, Venezia), southern Austria (eastern Tyrol, Carinthia, Karawanken), western Slovenia (Julian and Kamnik Alps, Karavanke, Trnovski gozd).

We classify the following syntaxa in the sub-alliance: *Rhodotamnino-Pinetum mugo* Zupančič & Žagar 2013 var. geogr. *Potentilla caulescens* (Smettan 1981) ex Zupančič & Žagar 2013, (*Potentillo-Pinetum mugo* Smettan 1981), *Rhodotamnino-Pinetum mugo* Zupančič & Žagar 2013 var. geogr. *Amelanchier ovalis* (Minghetti & Pedrotti 1994) ex Zupančič & Žagar 2013, (*Ameianchiero-Pinetum mugo* Minghetti & Pedrotti 1994 (p. p. min.)), *Rhodotamnino-Pinetum mugo* Zupančič & Žagar 2013 var. geogr. *Paederota lutea* Zupančič & Žagar (2004) 2013, *Rhodotamnino-Pinetum mugo* Zupančič & Žagar 2013 var. geogr. *typica* Zupančič & Žagar 2013, *Rhododendro hirsuti-Betuletum carpaticae*, Dakskobler, Rozman & Franz 2012 (ZUPANČIČ et al. 2006: 51–84, ZUPANČIČ 2013: 163, DAKSKOBLER, ROZMAN & FRANZ 2012).

In the paper »New Considerations on Southeast-Alpine and Dinaric-Central Balkan Dwarf Pine« ZUPANČIČ (2013: 151–160), I noticed a few inconsistencies with the Code (WEBER et al. 2000) in the procedure of renaming the association *Rhodotamnino-Rhododendretum hirsuti* as *Rhodotamnino-Pinetum mugo*. In present contribution I repair the deficiencies, which should finally arrange the status of the newly named association *Rhodotamnino-Pinetum mugo*:

<sup>2</sup> International Code of Phytosociological Nomenclature

***Rhodothamno-Pinetum mugo* (Aichinger 1933) Zupančič & Žagar in Zupančič 2015 nom. nov. hoc loco**

Basionym: *Pinetum mughi calcicolum* Aichinger 1933 (ICPN Art. 34 a) (AICHINGER 1933).

Pseudonym: *Rhodothamno-Rhodoretum hirsuti* (Aichinger 1933) Br.-Bl. & Sissingh in Br.-Bl. et al. 1939 (ICPN Arts.: 10 c, 42) (BRAUN-BLANQUET et al. 1939) *Rhodothamno-Rhodoretum hirsuti* (Aichinger 1933) Br.-Bl. & Sissingh in Br.-Bl. 1939 corr. Zupančič & Žagar in Zupančič et al. 2004 var. geogr. *Paederota lutea* Zupančič & Žagar in Zupančič et al. 2006 (ICPN Arts: 10 c, 42) (ZUPANČIČ et al. 2004, 2006).

*Nom. typ.*: AICHINGER 1933, Tab. 46, releve 6.

Incl.:

*Potentillo-Pinetum mugo* Smettan 1981, which is described in the Tyrol (SMETTAN 1981).

*Erico carnea-Pinetum prostratae* Zöttl 1951 nom. inv. (p. p. min.) in the South Tyrol (Trentino, Italy) (MINGHETTI 1996).

*Rhododendro hirsuti-Pinetum prostratae* Zöttl 1951 in Trentino (Italy) (MINGHETTI 1996), Southeastern Alps (POLDINI et al. 2004), p. p., Austria (KARNER 2007).

Mugheta termofila (thermophilous dwarf pine) in Venezia – Carnic Alps (POLDINI et al. 1990).

Mugheta microterma basifila (microthermal basiphilous dwarf pine) in Venezia – Carnic Alps (POLDINI et al. 1990).

*Rhodothamno-Rhododendretum hirsuti pinetosum mughi* Poldini (prov.).

We include also the syntaxa cited in the context of the association *Rhodothamno-Rhododendretum hirsuti* in WALLNÖFER (1993).

My opinion on synsystematics or syntaxonomy is explained in a previous paper (ZUPANČIČ 2013: 156–167) and I have no more to add. It is possible to re-proach me with certain conservatism in the light of the new era syntaxonomy or synsystematics. At the time of birth of new ideas, we must first accord these with already known facts, which our predecessors reasoned and if these realities do not correspond, to supplement them with new data but certainly not at all costs and uncompromisingly. Above all we must follow the foundations and particularities of the Braun-Blanquet (Central European) method in floristic principles.

#### 4 POVZETEK

V razpravi (ZUPANČIČ 2013) sem predvidel novo podzvezo *Hyperico grisebachii-Pinenion* za ilirsko-balkansko območje. ČARNI & MUCINA (2015) sta ugotovila pomanjkljiv opis in imenovanje podzveze (WEBER et al. 2000), ter hkrati na osnovi te invalidne podzveze opisala novo zvezo *Hyperico grisebachii-Pinion* Čarni & Mucina 2015. Mnenja sem, da za imenovano območje ustreza podzveza *Hyperico grisebachii-Pinion* v sklopu zveze *Erico-Pinion mugo* Leibundgut 1948, ki jo uvrščam v red *Vaccinio-Piceetalia* in razred *Vaccinio-Piceetea*.

Njena uveljavitev po kodeksu bi bila:

***Hyperico grisebachii-Pinenion mugo* (Čarni & Mucina 2015) Zupančič suball. nova hoc loco**

*Sin.*: *Violo biflorae-Pinenion mugo* Radžić 2000 (ICPN Art. 1),

*Violo biflorae-Pinenion mugo* Redžić 2007 (ICPN Art. 5 & 26),

*Tip.*: *Hyperico grisebachii-Pinetum mugo* (Ht. 1938) Zupančič, T. Wraber & Žagar 2004, (ČARNI & MUCINA, 2015: 293).

Za jugovzhodno alpsko (-ilirsko) območje po kodeksu predlagam naslednjo podzvezo:

***Rhodothamno-Pinenion mugo* Zupančič suball. nova hoc loco**

(*Erico-Pinion*, *Vaccinio-Piceetalia*, *Vaccinio-Piceetea*)

*Nom. tip.*: *Rhodothamno-Pinetum mugo* (Aichinger 1933) Zupančič & Žagar in Zupančič 2015 (ZUPANČIČ et al. 2006, ZUPANČIČ 2013)

*Sin.*: *Pinetum mughi calcicolum* Aichinger 1933 (ICPN Arts. 3b & 5),

*Rhodothamno-Rhodoretum hirsuti* (Aichinger 1933) Br.-Bl. & Sissingh 1939 (ICPN Arts. 10 c, 42, 43), *Rhodothamno-Rhododendretum hirsuti* (Aichinger 1933) Br. - Bl. & Sissingh in Br. - Bl. et al. 1939 corr. Zupančič & Žagar 2004 s. lat. (ICPN Arts. 10 c, 42, 43).

*Značilnice.*: *Rhodothamnus chamaecistus*, *Laserpitium peucedanoides*, *Senecio abrotanifolius*, *Heliosperma alpestris* in *Genista radiata*.

*Geografska razširjenost.*: severna Italija (južna Tirolska, Trentino, Karnijske Alpe, Julijsko-beneška krajina), Južna Avstrija (vzhodna Tirolska, Koroška, Karavanke), zahodna Slovenija (Julijske in Kamniške Alpe, Karavanke, Trnovski gozd).

V podzvezo uvrščamo naslednje sinatksone: *Rhodothamno-Pinetum mugo* Zupančič & Žagar 2013 var. geogr. *Potentilla caulescens* (Smettan 1981) ex Zupančič & Žagar 2012, (*Potentillo-Pinetum mugo* Smettan 1981),

*Rhodothamno-Pinetum mugo* Zupančič & Žagar 2013 var. geogr. *Amelanchier ovalis* (Minghetti & Pedrotti 1994) ex Zupančič & Žagar 2013, (*Ameianchiero-Pinetum mugo* Minghetti & Pedrotti 1994 (p. p. min.)), *Rhodothamno-Pinetum mugo* Zupančič & Žagar 2013 var. geogr. *Paederota lutea* Zupančič & Žagar (2004) 2013, *Rhodothamno-Pinetum mugo* Zupančič & Žagar 2012 var. geogr. *typica* Zupančič & Žagar 2013, *Rhododendro hirsuti-Betuletum carpaticae*, Dakskobler, Rozman & Franz 2012 (ZUPANČIČ et al. 2006: 51–84, ZUPANČIČ 2013: 163, ZUPANČIČ, ROZMAN & FRANZ 2012).

Po Kodeksu je pomanjkljivo opisano preimeno-  
vanje asociacije *Rhodothamno-Rhododendretum hirsuti*  
v *Rhodothamno-Pinetum mugo*. (ZUPANČIČ 2013: 151-  
160). V tem prispevku odpravljamo pomanjkljivosti:

***Rhodothamno-Pinetum mugo* (Aichinger 1933)  
Zupančič & Žagar in Zupančič 2015 nom. nov. hoc.  
loco**

Basionim: *Pinetum mughi calcicolum* Aichinger 1933  
(ICPN Art. 34 a) (AICHINGER 1933).

Pseudonim: *Rhodothamno-Rhododendretum hirsuti* (Aichin-  
ger 1933) Br.-Bl. & Sissingh in Br.-Bl. et al. 1939 (ICPN  
Arts.: 10 c, 42) (BRAUN-BLANQUET et al. 1939),

*Rhodothamno-Rhododendretum hirsuti* (Aichinger 1933)  
Br.-Bl. & Sissingh in Br.-Bl. 1939 corr. Zupančič &  
Žagar in Zupančič et al. 2004 var. geogr. *Paederota*  
*lutea* Zupančič & Žagar in Zupančič et al. 2006 (ICPN

Arts: 10 c, 42) (ZUPANČIČ et al. 2004, 2006).

Incl.:

*Potentillo-Pinetum mugo* Smettan 1981, Tirolska  
(Avstrija) (SMETTAN 1981).

*Erico carnea-Pinetum prostratae* Zöttl 1951 nom. inv.  
(p. p. min.) na južnem Tirolskem (Tentino, Italija).  
(MINGHETTI 1996).

*Rhododendro hirsuti-Pinetum prostratae* Zöttl 1951  
Trentino (Italija) (MINGHETTI 1996), (POLDINI et al.  
2004), p. p., Avstrija (KARNER 2007).

Mugheta termofila (termofilno ruševje) Benečija -  
Karnijske Alpe (POLDINI et al. 1990).

Mugheta microterma basifila (mikrotermno ruševje)  
Benečija - Karnijske Alpe (POLDINI et al. 1990).

*Rhodothamno-Rhododendretum hirsuti pinetosum*  
*mughi* Poldini (prov.).

Priključujem še sintaksone navedene v sklopu aso-  
ciacije *Rhodothamno-Rhododendretum hirsuti* iz raz-  
prave WALLNÖFERJEVE (1993).

Ugotavljam, da ne vidim razloga za novo zvezo v  
ilirsko-balkanskem območju ker Leibudgutova zveza  
*Erico-Pinion* zajema in jasno zamejuje ruševja od  
gozdnih smrekovih združb v širokem območju srednje  
in jugovzhodne Evrope. V ruševjih je večinoma prisot-  
nih vrst reda *Vaccinio-Piceetalia* in razreda *Vaccinio-*  
*Piceeta* zato ne vidim razloga za nov samostojen red  
in razred, ki bi združeval ruševja.

## ACKNOWLEDGEMENTS

I am sincerely grateful two anonymous reviewers for reviewing the article and suggesting useful improvements.

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