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NOMENCLATURAL NOTES ON SOME ALLIANCES OF THE HALOPHYTIC VEGETATION OF SOUTHERN URAL AND THE CASPIAN LOWLANDS

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Abstract
The paper presents validations of some syntaxon names of the saline vegetation of Eastern Europe (southern Russia and Kazakhstan), namely of the *Carici dilutae–Juncion gerardii, Anabasio salsae–Artemision pauciflorae, Carici dilutae–Juncetum gerardii*. The names of the *Suaedion acuminatae, Climacoptero crassae–Suaedion acuminatae* and the *Suaedetum acuminatae* are corrected because of erroneous selection of eponymous taxon names. We also suggest that the '*Tamariceto–Salsolion australis' nom. illeg.* should be a synonym of the *Euphorbion sequieranae*.
Keywords: *Artemisietea lerchianae, Festuco-Puccinellietea, Kalidietea foliati, Thero-Salicornietea*.

Izvleček
V članku predstavljamo spremembe ali potrditve nekaterih imen sintaksonov slanoljubne vegetacije vzhodne Evrope (južna Rusija in Kazahstan): *Carici dilutae–Juncion gerardii, Anabasio salsae–Artemision pauciflorae, Carici dilutae–Juncetum gerardii*. Imena *Suaedion acuminatae, Climacoptero crassae–Suaedion acuminatae* in *Suaedetum acuminatae* smo popravili zaradi zamenjave imen vrst po katerih so poimenovani sintaksoni. Predlagamo tudi, da se ime '*Tamariceto–Salsolion australis' nom. illeg.* uporablja kot sinonim sintaksona *Euphorbion sequieranae*.
Ključne besede: *Artemisietea lerchianae, Festuco-Puccinellietea, Kalidietea foliati, Thero-Salicornietea*.

Abbreviation and nomenclature: ICPN: International Code of Phytosociological Nomenclature, 3rd ed. (Weber et al. 2000); nomenclature of plant species follows EURO+MED PlantBase (2006–).

1. INTRODUCTION

This paper is one of the series of spin-offs of the EuroVegChecklist (Mucina et al., submitted), featuring validation and nomenclature corrections of names of saline and desert vegetation found in southern, continental regions of the Russian Federation and Kazakhstan.

The International Code of Phytosociological Nomenclature (ICPN; Weber et al. 2000) has been applied to perform the validations and corrections. The names of plant taxa follow the Euro+Med PlantBase (www.emplantbase.org).

2. '*GLAUCO-CARICION DILUTAE*'

Golub & Solomakha (1988: 87) have described the *Glauco–Caricion dilutae* to accommodate hygrophilous (sub)saline meadows and pastures steppe and forest-steppe zones of southern Ukraine and Russian Federation. This alliance should be perhaps seen as a Sarmatian biogeographic analogon to the Pannonian *Juncion gerardii* Wendelberger 1943 (see also Vicherek 1973: 80). Golub & Solomakha (1988: 87) have chosen the '*Junko–Glaucetum maritimae* Mahn et Schub. 62 em. Klotz et Köck 84' to serve as the

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holotypus of the *Glauco–Caricion dilutae*. Originally, the '*Junco–Glaucetum maritimi* Mahn et Schubert 1962' was described from Central Germany and Klotz & Köck (1984) misapplied this name for a community from Bashkiria. The *Junco–Glaucetum maritimi* Mahn et Schubert 1962 was considered as synonym of the '*Juncetum gerardii* Nordh. 23' (classified within the *Armerion maritimae* Br.-Bl. et De Leeuw 1926; '*Glauco-Puccinellietalia*', '*Asteretea trifolii*') by Schubert et al. (2001). The Golub & Solomakha's (1988: 87) typification of the *Glauco–Caricion dilutae* means *de facto* that the latter alliance became a *nomen superfluum* of the *Armerion maritimae*.

The Bashkirian saline vegetation earlier erroneously classified as the *Junco–Glaucetum maritimi* Mahn et Schubert 1962 was later described by Golub et al. (2003: 97) as the '*Cariceto secalinae–Scirpetum tabernaemontanii'* Golub et al. 2003. Besides a need for orthographic correction, this name is invalid due to a technicality – failure to cite the type in *expressis verbis* (ICPN Art. 5, par. 3) as '*typus'* or '*holotypus'*. Here we reject the invalid name suggested by Golub et al. (2003: 97) and replace it with valid description of a new association, carrying more appropriate name:

Carici dilutae–Juncetum gerardii ass. nov. hoc loco
Pseudonym (misapplied name): *Junco–Glaucetum maritimi* Mahn et Schubert 1962 *sensu* Klotz & Köck (1984)
Synonym: '*Cariceto secalinae–Scirpetum tabernaemontanii'* Golub et al. 2003 *nom. inval.* (ICPN Art. 5)
Holotypus hoc loco: Klotz & Köck (1984: Table 12, relevé 4)
Diagnostic taxa: *Carex diluta, Juncus gerardii, Schoenoplectus lacustris* subsp. *glaucus*

Because of the unfortunate typification, the concept of the *Glauco–Caricion dilutae* Golub et Solomakha 1988 became synonymous with the *Armerion maritimae* (see above). We suggest that in Bashkortostan (and possibly in other inland regions of the steppe and forest-steppe zones of southern Russian Federation and Ukraine) the *Juncus gerardii* hygrophilous swards cannot be identified with either the *Armerion maritimae* or the *Juncion gerradii* Wendelberger 1943. We concur with Golub & Solomakha (1988) that this vegetation in Bashkortostan deserves status of an alliance, however, this alliance should receive a new, valid name:

Carici dilutae–Juncion gerardii all. nov. hoc loco
(*Scorzonero–Juncetalia gerardii, Festuco–Puccinellietea*)
Pseudonym: *Glauco–Caricion dilutae* Golub et Solomakha 1988
Holotypus hoc loco: *Carici dilutae–Juncetum gerardii* Lysenko et Mucina 2015 (this paper, see above)
Diagnostic taxa: *Agrostis stolonifera, Carex diluta, Juncus compressus, J. gerardii, Glaux maritima*

3. *ANABASIO SALSAE–ARTEMISION PAUCIFLORAE*

Plant communities dominated by *Anabasis salsa* and *Artemisia pauciflora* are supported by solonetz soils of dry and desert steppes and are found also in the northern regions of the desert zone of Russian Federation and Kazakhstan (Karamysheva & Rachkovskaya 1973: 20). The distribution area of this alliance is situated southeast of that of the *Camphorosmo monspeliacae–Artemision pauciflorae* Karpov 2001 *nom. invers. propos.* These communities are classified as a new alliance – the *Anabasio salsae–Artemision pauciflorae*:

Anabasio salsae–Artemision pauciflorae **Lysenko *all. nov. hoc loco***
(Artemisietalia lerchianae, Artemisietea lerchianae)
Holotypus hoc loco: Anabasio salsae–Artemisietum pauciflorae Lysenko 2013 (Lysenko 2013: Tab. 1)
Diagnostic species: *Anabasis aphylla, A. salsa, Artemisia pauciflora, Atriplex cana, Leymus ramosus, Suaeda physophora*
Photos: Fig. 1B & C

4. '*TAMARICETO–SALSOLION AUSTRALIS*'

The '*Tamariceto–Salsolion australis'* was described by Golub (see Golub & Savchenko 1986; Golub 1994) to accommodate the Caspian desert vegetation on disturbed mobile wind-modelled barkhans and raised sand dunes. Habitats supporting the communities of this alliance are found near settlements and farms or on alluvia.

There are problems both with the name as well as the concept of the '*Tamariceto–Salsolion australis'*. *Salsola australis* R. Br. was used by Golub (1994) as an eponymous species of the latter

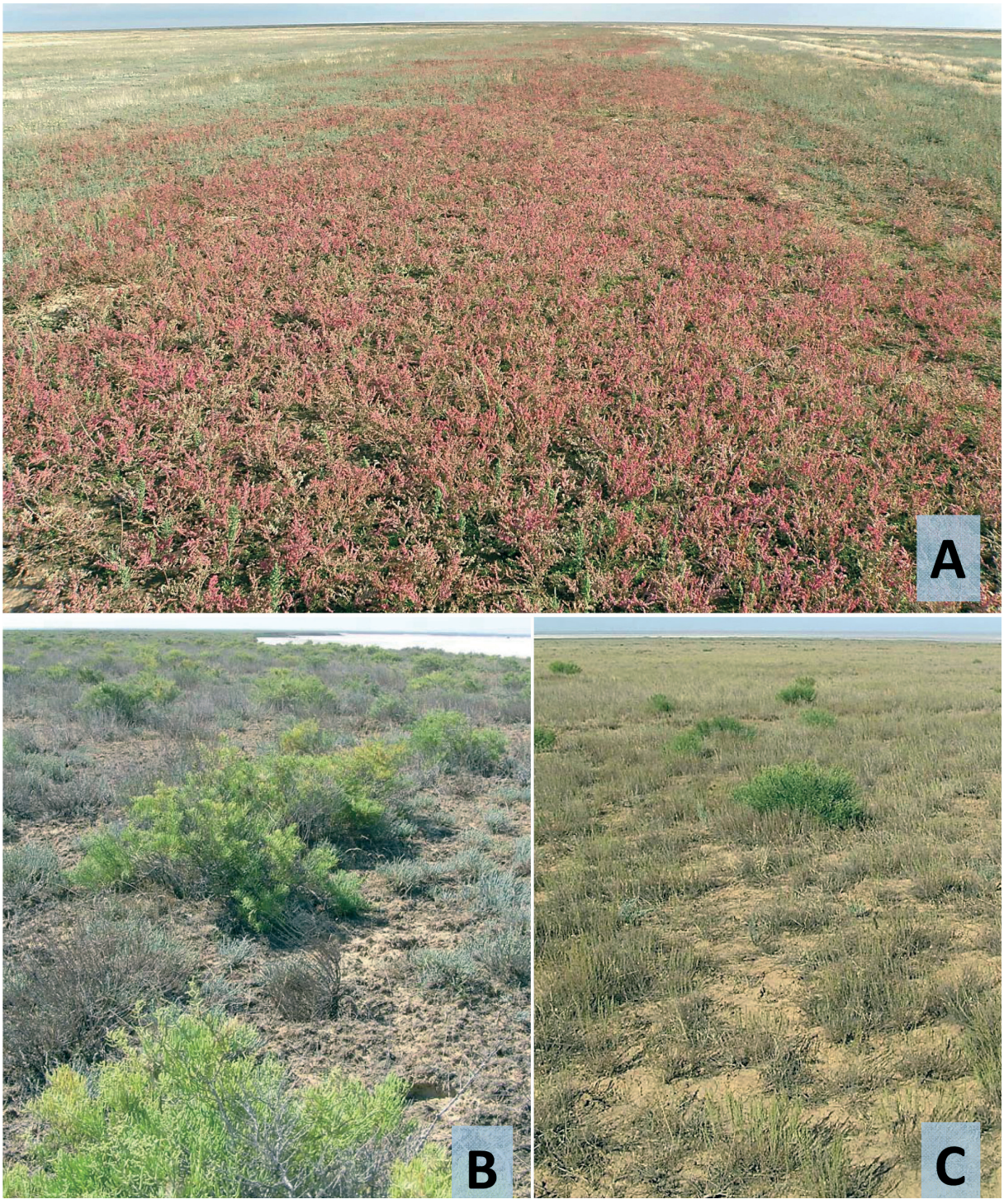

Figure 1: A: A stand of the *Suaedetum acuminatae* on solonchak soils (Russia, Volgograd Region, Kapustin Yar). B: Semi-desert vegetation of the *Anabasio salsae-Artemisietum pauciflorae suaedetosum physophorae* on solonez soils (Russia, Volgograd Region, along eastern and south-eastern lakesides of the Lake Elton). C: The *Anabasio salsae-Artemisietum pauciflorae anabasietosum aphyllae* on solonez soils (Russia, Volgograd Region, eastern lakeside of the Lake Elton). Photos: T. Lysenko.
Slika 1: A: Sestoj asociacije *Suaedetum acuminatae* na soločaku (Rusija, regija Volgograd, Kapustin Yar). B: Polpuščavska vegetacija *Anabasio salsae-Artemisietum pauciflorae suaedetosum physophorae* na soloncu (Rusija, regija Volgograd, ob vzhodni in jugovzhodni obali jezera Elton). C: Subasociacija *Anabasio salsae-Artemisietum pauciflorae anabasietosum aphyllae* na soloncu (Russia, regija Volgograd, vzhodna obala jezera Elton). Foto: T. Lysenko.

syntaxon. This taxon is considered currently by Uotila (2011) to be synonymous to *Salsola tragus* L. subsp. *tragus* (see also Akhani et al. 2007). We do not subscribe to this view. *S. australis* R. Br. was described in Australia, and as such it is different from European *S. tragus* subsp. *tragus* (see Borger et al. 2008, Hrusa & Gaskin 2008, Ayers et al. 2009, Chinnock 2010). The taxon reminiscent of *S. australis*, found in the Caspian deserts probably to the *Salsola tragus s. lat.*, however, this is pending further studies. In any case, the syntaxon name of the alliance is illegitimate due to taxonomic identification error (ICPN Art. 43). Three associations (*Salsolo australis–Atriplicetum tataricae, Salsolo australis–Cannabidentum ruderalis, Tamariceto-Salsoletum australis*) classified within the '*Tamariceto–Salsolion australis*' have same illegitimate nomenclatural status (Art. 43).

Due to lingering intricate taxonomy of the *Salsola tragus* complex, we prefer not to correct this name. Secondly, the vegetation described as the '*Tamariceto–Salsolion australis*' can hardly be floristically and ecologically distinguished from the *Euphorbion sequieranae* Golub 1994.

5. '*SUAEDION SALSAE*'

In the paper by Freitag et al. (2001: 79) suggested that the authors the name *Suaedion salsae* Golub et Tchorbadze in Golub 1995 (Golub 1995) confused *Suaeda salsa* (L.) Pall. and *Suaeda acuminata* (C. A. Mey.) Moq., and therefore the name has to be corrected:

Suaedion acuminatae* Golub et Tsorbadze in Golub 1995 *corr.* Lysenko et Mucina *hoc loco
(*Camphorosmo–Salicornietalia, Thero–Salicornietea*)
Corrected name: *Suaedion salsae* Golub et Tchorbadze in Golub 1995 *nom. illeg.* (ICPN Art. 43)
Synonym: *Suaedion salsae* Golub et Tchorbadze 1988 (ICPN Art. 1)
Holotypus hoc loco: Suaedetum acuminatae Golub et Tsorbadze in Golub 1995 corr. Lysenko et Mucina 2015 (this paper)
Diagnostic taxa: *Salicornia perennans, Suaeda acuminata, S. heterophylla*

The nomenclature type this alliance is the '*Suaedetum salsae*' Golub et Tchorbadze in Golub 1995 that is also illegitimate for the same reason and needs to be corrected to the Article 43 of ICPN:

Suaedetum acuminatae* Golub et Tsorbadze in Golub 1995 *corr. hoc loco
Corrected name: *Suaedetum salsae* Golub et Tchorbadze in Golub 1995 *nom. illeg.* (ICPN Art. 43)
Synonym: *Suaedetum salsae* Golub et Tchorbadze 1988 (ICPN Art. 1)
Holotypus hoc loco: Golub & Tchorbadze (1988: Table 11, relevé 6)
Photo: Fig. 1A

6. *CLIMACOPTERO CRASSAE–SUAEDION SALSAE*

The *Climacoptero–Suaedion* was described by Golub & Čorbadze (1989) to accommodate the saline vegetation of Caspian desertic perennial chenopod scrub in wet depressions and alluvia. Golub & Čorbadze (1989) chose the *Kalidietum foliati* to serve as the nomenclature type of the alliance.

One of the eponymous species of the alliance (*Suaeda salsa* (L.) Pall.) was apparently wrongly identified. *Suaeda acuminata* (C. A. Mey.) Moq. Should be seen as the correct identity of this taxon, as also admitted by the senior author of this syntaxonomic concept (see Golub et al. 2001: 92). In the latter publication, a new suballiance concept has been introduced – the *Climacoptero–Suaedenion acuminatae* (Golub & Čorbadze 1989; Golub et al. 2001) where *Suaeda acuminata* is rightly used as one of the eponymous species. Yet, this publication fails to introduce the formal correction of the alliance name – an omission that we rectify here:

Climacoptero crassae–Suaedion acuminatae* Golub et Čorbadze 1989 *corr. hoc loco
(*Kalidietalia caspici, Kalidietea foliati*)
Corrected name: *Climacoptero crassae–Suaedion salsae* Golub et Čorbadze 1989 *nom. illeg.* (ICPN Art. 43)
Phantom: *Climacoptero crassae-Suaedion salsae* Golub et Czorbadze 1988
Holotypus hoc loco: Kalidietum foliati Golub et Tchorbadze 1989

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