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NOMENCLATURAL PROPOSAL | PHYTOSOCIOLOGICAL NOMENCLATURE

Proposals (45–47) to conserve the name *Diantho deltoidis-Armerietum elongatae* Krausch ex Pötsch 1962 as a *nomen conservandum* and to reject two *nomina dubia* in the class *Koelerio-Corynephoretea*

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Abstract

The ongoing syntaxonomic revision of the class *Koelerio-Corynephoretea* in their entire range led to the need for nomenclatural decisions to ensure nomenclatural stability and clarity. Specifically, based on Article 52 ICPN, we propose the conservation of the widely used name *Diantho deltoidis-Armerietum elongatae* against the older names *Armerio elongatae-Rumicetum tenuifolii* and *Armerio-Festucetum*:

(45) *Diantho deltoidis-Armerietum elongatae* Krausch ex Pötsch 1962 nom. cons. propos.
Typus: Pötsch (1962: table 12, relevé 5) [Lectotypus, selected by Moravec (1967: 166)]

(=) *Armerio elongatae-Rumicetum tenuifolii* Tüxen 1951
Typus: Neotypus selected here (see below)

(=) *Armerio elongatae-Festucetum* Hohenester 1960
Typus: Dengler et al. (2003: p. 604) [Neotypus, selected by Dengler in Dengler et al. (2003): 604]

Moreover, based on Articles 36 and 37 ICPN, we propose to reject the following ambiguous and/or dubious names:

(46) *Festuco ovinae-Thymetum angustifolii* Tüxen 1937 nom. dub. propos.
Typus: Gregor (2001: 8) [Neotypus (erroneously called Lectotypus), selected by Gregor (2001)]

(47) *Corynephoro canescentis-Caricetum arenariae* Regel 1928 nom. dub. propos.
Typus: Regel (1928: table 4, relevé 18) [Holotypus]

Syntaxonomic reference: Berg et al. (2004), with nomenclatural updates in Dembicz et al. (2025).

Abbreviations: CCCN = Committee for Change and Conservation of Names of the Group of Phytosociological Nomenclature; ICPN = International Code of Phytosociological Nomenclature, 4th edition (Theurillat et al. 2021).

Keywords

Armerio elongatae-Rumicetum tenuifolii, *Diantho deltoidis-Armerietum elongatae*, dry grassland, Europe, *Corynephoro canescentis-Caricetum arenariae*, *Festuco ovinae-Thymetum angustifolii*, *Koelerio-Corynephoretea*, *nomen conservandum*, phytosociological nomenclature, sand grassland, syntaxonomy, vegetation classification

PENSOFT

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Introduction

The first author has studied the syntaxonomy of the class *Koelerio-Corynephoretea* (sandy, dry grasslands of temperate Europe) for decades throughout its entire geographic range, with a special focus on the Pleistocene lowlands around the Baltic Sea (Dengler 1994; Kratzert and Dengler 1999; Dengler 2004; Drews and Dengler 2004; Marquardt et al. 2004; Boch and Dengler 2006; Löbel and Dengler 2008; Dembicz et al. 2025). This research has led to numerous proposals and typifications aimed at clarifying and stabilizing syntaxon names (Dengler et al. 2003; Dembicz et al. 2025). However, a recent paper on the classification of the dry grasslands of the Lesser Polish Upland (Dembicz et al. 2025) suggested that there are still some open issues to be addressed.

With this paper, following two previous nomenclatural proposals on European dry grassland syntaxa (Dengler and Willner 2023; Dengler et al. 2024), we seek the decisions of the Committee for Change and Conservation of Names (CCCN) of the Group of Phytosociological Nomenclature (see Willner et al. 2024), in accordance with the International Code of Phytosociological Nomenclature (ICPN; Theurillat et al. 2021). Specifically, we ask for the conservation of the name *Diantho deltoidis-Armerietum elongatae* Krausch ex Pötsch 1962 and the rejection of the dubious and/or ambiguous names *Corynephoro canescentis-Caricetum arenariae* Regel 1928 and *Festuco ovinae-Thymetum angustifolii* Tüxen 1937.

Diantho deltoidis-Armerietum elongatae

The *Diantho deltoidis-Armerietum elongatae* is the most widely distributed and most frequent association of the alliance *Armerion elongatae* (order *Trifolio arvensis-Festucetalia ovinae*, class *Koelerio-Corynephoretea*). At the same time, it is the holotype of this alliance. It occurs in NE Germany (Krausch 1968; Dengler 1994, 2004; Kratzert and Dengler 1999), some sand areas with subcontinental climate in NW Germany (Marquardt et al. 2004) and S Germany (Oberdorfer 1993), the Polish lowlands (Głowacki 1988; Brzeg and Wojterska 1996; Matuszkiewicz 2008; Kutyna et al. 2012; Dembicz et al. 2025), the Baltic States (Jermacāne and Laiviņš 2001), probably Denmark and Southern Sweden (Dierßen and Dierßen 1996; Löbel and Dengler 2008; I. Dembicz et al. in prep.). It is a meso-xeric sand grassland of the subcontinental parts of nemoral and hemiboreal Europe. Compared to the second widespread association of the alliance, the *Sileno otitae-Festucetum trachyphyllae*, it is differentiated by inhabiting sands with lower soil pH, typically between 5 and 6 (measured in H_2O), compared to 6 to 7.5 for the former (Dengler 2004; Kratzert and Dengler 1999; Dembicz et al. 2025)

The name *Diantho deltoidis-Armerietum elongatae*, was described from Brandenburg in NE Germany (Pötsch 1962; see also Krausch 1968). It is very widely applied for this community throughout its distributional range (Pott 1995; Dierßen and Dierßen 1996; Kratzert and Dengler 1999; Jermacāne and Laiviņš 2001; Passarge 2002; Rennwald et al. 2002; Berg et al. 2004; Marquardt et al. 2004; Löbel and Dengler 2008; Dembicz et al. 2025). Sometimes the same name is also given with the wrong authority "Krausch 1959" (Krausch 1968; Dierßen et al. 1988; Schubert et al. 1995; Preising et al. 1997; Matuszkiewicz 2008; Kutyna et al. 2012). However, "*Diantho deltoidis-Armerietum elongatae* Krausch 1959" is a phantom name. In the only two publications of Krausch from the year 1959 he used the name "*Diantho deltoidis-Festucetum*", which in Krausch (1959a) was ineffectively published (Art. 1 ICPN) and in Krausch (1959b) invalid (Art. 7 ICPN).

By contrast, there are two older validly described association names largely matching the content of the *Diantho-Armerietum*, the *Armerio elongatae-Rumicetum tenuifolii* Tx. 1951 [Tüxen 1951: 161] described from Southern Sweden and the *Armerio-Festucetum* Hohenester 1960 [Hohenester 1960: 45] described from Franconia, Southern Germany. The first one has practically never been taken up in the phytosociological literature, and the second one much more rarely and then typically in a wider sense, also comprising the *Sileno otitae-Festucetum trachyphyllae* Libbert 1933 mut. Dembicz et al. 2025 nom. invers. (e.g. Oberdorfer 1993). In the Polish lowlands, the distributional centre of the association, we did not find a single study using the name *Armerio-Festucetum*. Sometimes the name *Armerio-Festucetum* has even been applied for the *Sileno otitae-Festucetum trachyphyllae* as opposed to the *Diantho deltoidis-Armerietum elongatae* (Pott 1995; Schubert et al. 1995), which is a misapplication of this name following the neotypification by Dengler et al. (2003).

To ensure nomenclatural stability we thus formally propose to conserve the younger name *Diantho deltoidis-Armerietum elongatae* Krausch ex Pötsch 1962 against the older names *Armerio elongatae-Rumicetum tenuifolii* Tx. 1951 (for neotype, see Appendix 1) and *Armerio-Festucetum* Hohenester 1960. The same proposal has already been formulated multiple times, but without a formal application to the CCCN (e.g. Rennwald et al. 2002: pp. 330–331; Dengler 2004; Löbel and Dengler 2008; Dembicz et al. 2025).

Festuco ovinae-Thymetum angustifolii

The name *Festuco ovinae-Thymetum angustifolii*, published by Tüxen (1937: 56) based on a constancy table, could in principle also have priority against the *Diantho deltoidis-Armerietum elongatae*. We consider the *Festuco-Thymetum* a *nomen dubium* (Art. 37 ICPN) because, according to current syntaxonomy (e.g. Dengler 2004), it would be crucial for syntaxonomic placement to know which microtaxon of *Festuca ovina* aggr. was the matrix species of the

stands. Tüxen (1937) gave "*Festuca ovina* subsp. *vulgaris*", which in NW Germany could correspond to any of the following four present-day taxa: *F. ovina*, *F. guestfalica*, *F. lemanii*, *F. stricta* subsp. *trachyphylla* (see Dengler 1996, 1998). The neotypification by Gregor (2001) did not solve the issue as the author himself acknowledges that it is impossible to assign the name "*Festuca ovina*" by Tüxen to a present-day species without ambiguity.

Generally, the name *Festuco ovinae-Thymetum angustifolii* has rarely been used (for an exception, see Kornaś 1957: with the epitheton "*serpylli*" instead of "*angustifolii*"). Moreover, some authors used the association name even for an association dominated by *F. filiformis* (e.g. Weeda et al. in Schaminée et al. 1996: 93 et seq.), despite Tüxen (1937) generally differentiated this *Festuca* species, but did not mention it in the protologue. This would render the *Festuco-Thymetum* also a *nomen ambiguum* as this would mean a usage excluding the type (Art. 36 ICPN).

Thus, we herewith propose to reject the *Festuco ovinae-Thymetum angustifolii* Tx. 1937 both as *nomen dubium* and *nomen ambiguum*. If the CCCN should not follow this suggestion, we recommend conserving the *Diantho deltoidis-Armerietum elongatae* against it instead.

Corynephoro canescentis-Caricetum arenariae

The *Cetrario aculeatae-Corynephoretum canescentis* Steffen 1931 mut. Dembicz et al. 2025 nom. invers. is the most widely distributed and most frequent association of the alliance *Corynephorion canescentis* (order *Corynephoretalia canescentis*, class *Koelerio-Corynephoretea*). It is a pioneer sand grassland on acidic and very nutrient-poor sands, often on inland and coastal dunes, in suboceanic to subcontinental regions of temperate Europe (see Dengler et al. 2003). The herb layer usually has very low cover and often does not contain many more species than just *Corynephorus canescens*, while the bryophyte and lichen cover can range from close to zero to very high and the richness of non-vascular taxa often exceeds that of the vascular plants (Kratzert and Dengler 1999; Dengler 2004; Dembicz et al. 2025).

However, there is the older name *Corynephoro canescentis-Caricetum arenariae* Regel 1928, which could be considered an older syntaxonomic synonym that should have priority over the *Cetrario-Corynephoretum*. However, in the only relevé of the protologue (and thus the holotype, see Appendix 1) of the association name *Corynephoro canescentis-Caricetum arenariae* the much covering non-vascular taxa have not been identified. Thus, it is not possible to decide whether the stand belonged to the present-day association *Cetrario-Corynephoretum* or *Caricetum arenariae* Christiansen 1927. Both are part of the *Corynephorion canescentis*, often occur side by side and are mainly differentiated by the bryophyte and lichen species, while *Carex arenaria* and *Corynephorus canescens* can occur in both associations (Dengler 2004). We are not aware of any publication, and certainly not a more recent one, that adopted the name *Corynephoro canescentis-Caricetum arenariae* Regel 1928.

While some authors (e.g. Passarge 2002) proposed to conserve the relatively widely used, but invalid name "*Spergulo morisonii-Corynephoretum canescentis* Tx. (1928) 1955" (Kornaś 1957; Głowacki 1988), this is not possible because only validly published names can be conserved (Art. 52 ICPN). However, Tüxen (1955) did not provide a valid association description according to Art. 7 ICPN. In principle, one could apply to conserve the *Spergulo-Corynephoretum* (Tx. 1928) Passarge 1960, which was validly published. However, the association name with these authorities has rarely been used except by Passarge (1960, 2002) himself.

In conclusion, we propose rejecting the name *Corynephoro canescentis-Caricetum arenariae* Regel 1928 as a *nomen dubium* (Art. 37 ICPN). If the CCCN should not follow this suggestion, we recommend conserving the *Cetrario aculeatae-Corynephoretum canescentis* against it instead.

Author contributions

JD conceived the idea of this paper and drafted the manuscript, while ID added the Polish perspective and revised the text.

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References

Berg C, Dengler J, Abdank A, Isermann M [Eds] (2004) Die Pflanzengesellschaften Mecklenburg-Vorpommerns und ihre Gefährdung – Textband [Plant communities of Mecklenburg-Vorpommern and their vulnerability –text volume]. Weissdorn, Jena, DE, 606 pp. [In German]

Boch S, Dengler J (2006) Floristische und ökologische Charakterisierung sowie Phytodiversität der Trockenrasen auf der Insel Saaremaa (Estland) [Floristic and ecological characterisation as well as phytodiversity of the dry grasslands of the island of Saaremaa (Estonia)]. Arbeiten aus dem Institut für Landschaftsökologie Münster 15: 55–71. https://doi.org/10.7809/thesis.diplom.006 [In German]

Brzeg A, Wojterska M (1996) Przegląd systematyczny zbiorowisk roślinnych Wielkopolski wraz z oceną stopnia ich zagrożenia [A systematic review of plant communities in Wielkopolska, including an assessment of their threat level]. Badania Fizjograficzne nad Polską Zachodnią, Seria B 45: 7–39. [In Polish]

Dembicz I, Kozub Ł, Adamska A, Pędziwiatr A, Jonczak J, Topolska K, Dengler J (2025) Dry grasslands of the Lesser Polish Upland: syntaxonomy, biodiversity and conservation. Tuexenia 45 (in press). https://doi.org/10.14471/2025.45.014

Dengler J (1994) Flora und Vegetation von Trockenrasen und verwandten Gesellschaften im Biosphärenreservat Schorfheide-Chorin [Flora and vegetation of dry grasslands and related communities in the Schorfheide-Chorin Biosphere Reserve]. Gleditschia 22: 179–321. [In German]

Dengler J (1996) Anmerkungen zur Taxonomie und Bestimmung von Schaf-Schwingeln i. w. S. (*Festuca ovina* agg.) in Deutschland mit besonderer Berücksichtigung Schleswig-Holsteins [Notes on the taxonomy and identification of sheep's fescue (*Festuca ovina* agg.) in Germany with special consideration of Schleswig-Holstein]. Kieler Notizen zur Pflanzenkunde in Schleswig-Holstein und Hamburg 24: 1–29. [In German]

Dengler J (1998) Neues von den schmalblättrigen Schwingel-Sippen (*Festuca ovina* agg. und *F. rubra* agg.) in Deutschland mit besonderer Berücksichtigung von Schleswig-Holstein und Hamburg [News about the narrow-leaved fescue species (*Festuca ovina* agg. and *F. rubra* agg.) in Germany with special consideration of Schleswig-Holstein and Hamburg]. Kieler Notizen zur Pflanzenkunde in Schleswig-Holstein und Hamburg 25/26: 6–32. [In German]

Dengler J (2004) Klasse: *Koelerio-Corynephoretea* Klika in Klika & V. Novák 1941 – Sandtrockenrasen und Felsgrusfluren von der submeridionalen bis zur borealen Zone [Class: *Koelerio-Corynephoretea* Klika in Klika & V. Novák 1941 – Dry sandy grasslands and scree slopes from the sub-Mediterranean to the boreal zone]. In: Berg C, Dengler J, Abdank A, Isermann M (Eds) Die Pflanzengesellschaften Mecklenburg-Vorpommerns und ihre Gefährdung – Textband [Plant communities of Mecklenburg-Vorpommern and their vulnerability – text volume]. Weissdorn, Jena, DE, 301–326.

Dengler J, Willner W (2023) Proposal (31) to conserve the name *Brachypodietalia pinnati* Korneck 1974 as a *nomen conservandum* with a conserved type. Vegetation Classification and Survey 4: 63–68. https://doi.org/10.3897/VCS.100985

Dengler J, Berg C, Eisenberg M, Isermann M, Jansen F, Koska I, Löbel S, Manthey M, Päzolt J, … Wollert H (2003) New descriptions and typifications of syntaxa within the project 'Plant communities of Mecklenburg-Vorpommern and their vulnerability', Part I. Feddes Repertorium 114: 587–631. https://doi.org/10.1002/fedr.200311017

Dengler J, Bergmeier E, Vassilev K (2024) Proposal (39) to conserve the name *Koelerietalia splendentis* Horvatić 1973 as a *nomen conservandum*. Vegetation Classification and Survey 5: 165–167. https://doi.org/10.3897/VCS.127873

Dierßen K, Dierßen B (1996) Vegetation Nordeuropas [Vegetation of Northern Europe]. Ulmer, Stuttgart, DE, 838 pp. [in German]

Drews H, Dengler J (2004) Steilufer an der nordoldenburgischen Küste: Artenausstattung, Vegetation und Pflegekonzept unter besonderer Berücksichtigung der Kalkhalbtrockenrasen und der wärmeliebenden Säume [Steep banks on the North Oldenburg coast: species composition, vegetation and management concept with special consideration of the calcareous semi-dry grasslands and the thermophilic fringes]. Kieler Notizen zur Pflanzenkunde in Schleswig-Holstein und Hamburg 32: 57–95. [In German]

Euro+Med (2025) Euro+Med PlantBase – the information resource for Euro-Mediterranean plant diversity. http://www.europlusmed.org [accessed 5 December 2025]

Głowacki Z (1988) Zbiorowiska psammofilne klasy Sedo-Scleranthetea Wysoczyzny Siedleckiej i terenów przyległych na tle ich zasięgów [Plant communities of the class Sedo-Scleranthetea of Wysoczyzna Siedlecka and the neighborhood compared with similar ones in central Europe]. Rozprawy Naukowe 20, Wydawnictwa Uczelniane WSRP, Siedlce, PL, 122 pp. [In Polish]

Gregor T (2001) Acidophile schafschwingelreiche Magerrasen im osthessischen Buntsandsteingebiet [Acidophilic sheep's fescue-rich dry grasslands in the East Hessian Bunter Sandstone region]. Botanik und Naturschutz in Hessen 13: 5–19. [In German]

Hohenester A (1960) Grasheiden und Föhrenwälder auf Diluvial- und Dolomitsanden im nördlichen Bayern [Grassy heaths and pine forests on diluvial and dolomite sands in northern Bavaria]. Berichte der Bayerischen Botanischen Gesellschaft zur Erforschung der heimischen Flora 33: 30–85. [In German]

Jermacāne S, Laiviņš M (2001) List of syntaxa described in Latvia [in Latvian, with English summary]. Lavijas Veģētacija 4: 115–132.

Kornaś J (1957) Zespoły roślinne Jury Krakowskiej. Część 3: Zespoły piaskowe [Plant communities of the Kraków Jura. Part 3: Sand communities]. Acta Societatis Botanicorum Poloniae 26: 467–484. https://doi.org/10.5586/asbp.1957.025 [In Polish]

Kratzert G, Dengler J (1999) Die Trockenrasen der "Gabower Hänge" am Oderbruch [The dry grasslands of the "Gabower Hänge" in the Oderbruch]. Verhandlungen des Botanischen Vereins zu Berlin und Brandenburg 132: 285–329. [In German]

Krausch HD (1959a) Vegetationsstudien an xerothermen Trockenrasen in Brandenburg. Unpublished PhD thesis, Mathematisch-Naturwissenschaftliche Fakultät, Pädagogische Hochschule Potsdam, Potsdam, DE, 159 pp.

Krausch HD (1959b) Vegetationsstudien an xerothermen Trockenrasen in Brandenburg. Autorreferat einer Dissertation. Wissenschaftliche Zeitschrift der Pädagogischen Hochschule Potsdam, Mathematisch-Naturwissenschaftliche Reihe 4: 234–235.

Krausch HD (1968) Die Sandtrockenrasen (*Sedo-Scleranthetea*) in Brandenburg [The dry sandy grasslands (*Sedo-Scleranthetea*) in Brandenburg]. Mitteilungen der Floristisch-Soziologischen Arbeitsgemeinschaft N.F. 13: 71–100. [In German]

Kutyna I, Drewniak E, Młynkowiak E (2012) Zbiorowiska muraw kserotermicznych i piaskowych na krawędzi doliny Odry w Owczarach [Plant communities within xerothermic and psammophilous grasslands on the Edge of the Oder rover valley in Owczary]. Folia Pomeranae Universitatis Technologiae Stetinensis, Agricultura, Alimentaria, Piscaria et Zootechnica 293: 61–88. [In Polish]

Löbel S (2002) Trockenrasen auf Öland: Syntaxonomie – Ökologie – Biodiversität. Diplom thesis, Institute of Ecology and Environmental Chemistry, University of Lüneburg, Lüneburg, DE: 178 pp. http://www.biodiversity-plants.de/downloads/press_theses/thesis.diplom.007.pdf

Löbel S, Dengler J (2008) [„2007"] Dry grassland communities on southern Öland: phytosociology, ecology, and diversity. Acta Phytogeographica Suecica 88: 13–32. https://doi.org/10.3170/2008-12-18541

Marquardt B, Rathjen J, Boch S, Kaiser T, Dengler J (2004) Naturschutz im Industriegebiet? – Flora, Vegetation und Naturschutzpotenzial des Lüneburger Hafens [Nature conservation in an industrial area? – Flora, vegetation and nature conservation potential of the port of Lüneburg]. Drosera 2004: 43–92. [In German]

Matuszkiewicz W (2008) Przewodnik do oznaczania zbiorowisk roślinnych Polski [Guide to the identification of plant communities in Poland]. Wydawnictwo Naukowe PWN, Warszawa, PL, 537 pp. [In Polish]

Moravec J (1967) Zu den azidophilen Trockenrasengesellschaften Südwestböhmens und Bemerkungen zur Syntaxonomie der Klasse *Sedo-Scleranthetea*. Folia Geobotanica et Phytotaxonomica 2: 137–178. https://doi.org/10.1007/BF02856372

Oberdorfer E (1993) (Ed.) Süddeutsche Pflanzengesellschaften – Teil II: Sand- und Trockenrasen, Heide- und Borstgras-Gesellschaften, alpine Magerrasen, Saum-Gesellschaften, Schlag- und Hochstauden-Fluren. 3rd ed. Fischer, Jena, DE, 355 pp. [In German]

Passarge H (1960) Zur soziologischen Gliederung binnenländischer *Corynephorus*-Rasen im nordostdeutschen Flachland [On the sociological division of inland *Corynephorus* swards in the NE German lowlands]. Verhandlungen des Botanischen Vereins der Provinz Brandenburg 98–100: 113–124. [In German]

Passarge H (2002) Pflanzengesellschaften Nordostdeutschlands 3 – III. Cespitosa und Herbosa [Plant communities of NE Germany 3 – Cespitosa and Herbosa]. Cramer, Berlin, DE, 304 pp. [In German]

Pötsch J (1962) Die Grünlandgesellschaften des Fiener Bruchs in West-Brandenburg [The grassland communities of the Fiener Bruch in western Brandenburg]. Wissenschaftliche Zeitschrift der Pädagogischen Hochschule Potsdam, Mathematisch-Naturwissenschaftliche Reihe 7: 167–200. [In German]

Pott R (1995) Die Pflanzengesellschaften Deutschlands [The plant communities of Germany]. 2nd ed. – Ulmer, Stuttgart, DE, 622 pp. [In German]

Preising E, Vahle HC, Brandes D, Hofmeister H, Tüxen J, Weber HE (1997) Die Pflanzengesellschaften Niedersachsens – Bestandsentwicklung, Gefährdung und Schutzprobleme: Rasen-, Fels- und Geröllgesellschaften [The plant communities of Lower Saxony – development, threat and conservation problems; Grassland, rock and scree communities]. Naturschutz und Landschaftspflege in Niedersachsen 20(5): 1–146. [In German]

Regel C (1928) Zur Klassifikation der Assoziationen der Sandböden [On the classification of sandy soil associations]. Botanische Jahrbücher fur Systematik, Pflanzengeschichte und Pflanzengeographie 61: 263–284. [In German]

Rennwald E, Bartram T, Berg C, Bergmeier E, Bettinger A, Blümel A, Bohn U, Böhnert W, Brandes D, … Zahlheimer WA (2002) [„2000“] Verzeichnis der Pflanzengesellschaften Deutschlands mit Synonymen und Formationseinteilung [Oberview of the plant communities of Germany with synonyms and assignments to formations]. Schriftenreihe für Vegetationskunde 35: 121–391. [In German]

Schaminée JHJ, Stortelder AHF, Weeda EJ [Eds] (1996) De Vegetatie von Nederland – Deel 3. Plantengemeenschappen van graslanden, zomen en droge heiden [The Vegetation of the Netherlands – Part 3. Plant communities of grasslands, verges and dry heaths]. Opulus, Uppsala, SE, 360 pp. [In Dutch]

Schubert R, Hilbig W, Klotz S (1995) Bestimmungsbuch der Pflanzengesellschaften Mittel- und Nordostdeutschlands [Identification guide to the plant communities of Central and Northeastern Germany]. Fischer, Jena, DE, 403 pp. [In German]

Steffen H (1931) Vegetationskunde von Ostpreußen [Vegetation science of East Prussia]. Pflanzensoziologie 1: 1–406. [In German]

Theurillat JP, Willner W, Fernández-González F, Bültmann H, Čarni A, Gigante D, Mucina L, Weber H (2021) International Code of Phytosociological Nomenclature. 4th Edition. Applied Vegetation Science 24: e12491. https://doi.org/10.1111/avsc.12491

Tüxen R (1937) Die Pflanzengesellschaften Nordwestdeutschlands [The plant communities of NW Germany]. Mitteilungen der Floristisch-soziologischen Arbeitsgemeinschaft in Niedersachsen 3: 1–170. [In German]

Tüxen R (1951) Eindrücke während der pflanzengeographischen Exkursionen durch Süd-Schweden [Impressions from the phytogeographical excursions through southern Sweden]. Vegetatio 3: 149–172. https://doi.org/10.1007/BF00310825 [In German]

Tüxen R (1955) Das System der nordwestdeutschen Pflanzengesellschaften [The system of northwest German plant communities]. Mitteilungen der Floristisch-Soziologischen Arbeitsgemeinschaft N.F. 5: 155–176. [In German]

Willner W, Čarni A, Fernández-González F, Pallas J, Terzi M, Theurillat J-P (2024) Report 3 of the Committee for Change and Conservation of Names (CCCN). Vegetation Classification and Survey 5: 257–265. https://doi.org/10.3897/VCS.142803

Appendix 1. Nomenclatural types of associations

Taxon names are given as in the source but assigned to the present-day taxon in brackets.

***Armerio elongatae-Rumicetum tenuifolii* Tx. 1951**

Protologue: Tüxen (1951; p. 161) (only a synoptic table based on relevés from various localities in Southern Sweden, including Öland)
Original form of the name: *Armeria elongata-Rumex tenuifolius*-Ass.
Note: *Rumex tenuifolius* is nowadays considered as subspecies of *R. acetosella* (Euro+Med 2025).
Neotypus hoc loco (relevé F48 from Löbel 2002):
Date: summer 2001; locality: Southern Öland, Sweden; 56.58745°N, 16.41200°E; plot size: 4 m; cover scale: 9-step Braun-Blanquet scale.

Species composition herb layer: *Achillea millefolium* subsp. *millefolium* 2a, *Agrostis capillaris* 2b, *Armeria maritima* subsp. *elongata* 2a, *Artemisia campestris* subsp. *campestris* r, *Cerastium semidecandrum* 1, *Cerastium fontanum* subsp. *vulgare* 1, *Dianthus deltoides* 2m, *Festuca ovina* 2a, *Galium verum* 2a, *Luzula campestris* subsp. *campestris* 1, *Plantago lanceolata* subsp. *lanceolata* +, *Poa pratensis* 1, *Pulsatilla pratensis* subsp. *pratensis* r, *Rumex acetosella* 1, *Sedum acre* 2b, *Stellaria graminea* 1, *Thymus serpyllum* subsp. *serpyllum* 2a, *Trifolium arvense* +, *Trifolium repens* subsp. *repens* r.
Species composition moss layer: *Brachythecium albicans* 2m, *Ceratodon purpureus* 2m, *Cladonia rangiformis* 2m, *Dicranum scoparium* 2a, *Hypnum cupressiforme* var. *lacunosum* 2b, *Peltigera canina* 1, *Rhytidiadelphus squarrosus* 2a, *Thuidium abietinum* (*Abietinella abietina*) 2m.

***Corynephoro canescentis-Caricetum arenariae* Regel 1928 nom. dub. propos.**

Protologue: Regel (1928: pp. 268 and 282)
Original form of the name: *Corynephoretum canescentis-Caricetum arenariae*
Holotypus (the protologue contains only one relevé):
Date: 31.07.1926; locality: sandy plain near Haff, Schwarzort (now: Juodkrantė), Lithuania; plot size: unknown; cover scale: "Deckungsgrad" (possibly 7-step cover abundance scale of Braun-Blanquet).
Species composition herb layer: *Astragalus arenarius* 3, *Carex arenaria* 4–5, *Calamagrostis epigejos* 1, *Corynephorus canescens* 4–5, *Hieracium umbellatum* 2, *Jasione montana* 1.
Species composition moss layer: *Ceratodon purpureus* +, *Musci* spp. (*Bryophyta* spp.) and *Lichenes* spp. 4.

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