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New descriptions and typifications of syntaxa within the project ‘Plant communities of Mecklenburg-Vorpommern and their vulnerability’ – Part I

Summary
This paper contains the original diagnoses of new syntaxa, typifications of existing names of syntaxa, and other decisions of nomenclatural relevance which have proved to be necessary within the project ‘Plant communities of Mecklenburg-Vorpommern and their vulnerability’. The underlying taxonomic concept is documented in Dengler & Berg (2002). In Berg et al. (2001b, 2003) we have discussed in detail the taxonomic system as it applies to the federal state of Mecklenburg-Vorpommern in NE Germany.

In the introductory sections we deal with some methodological questions and explain the mode of presentation adopted in the special section. We follow strictly the rules of the International Code of Phytosociological Nomenclature (ICPN), but have recognised six aspects in which the present version of the ICPN is unclear or contradictory. For these cases we suggest reasonable solutions that are followed in the special section.

The special section of our work will be published in two parts. The present paper deals with nine phytosociological classes belonging to the herbaceous terrestrial vegetation (Polygono-Poetea annuae, Sisymbrietea, Stellarietea mediae, Calluno-Ulicetea, Koelerio-Corynephoretea, Festuco-Brometea, Molinio-Arrhenatheretea, Trifolio-Geranietae, Artemisietae vulgaris). Altogether 17 new syntaxa are validly published (including validations of previously used names and changes in rank). One name of a taxon is corrected due to a taxonomic error that is documented in Dengler & Berg (2002). In Berg et al. (2001b, 2003) we have discussed in detail the taxonomic system as it applies to the federal state of Mecklenburg-Vorpommern in NE Germany.

Zusammenfassung


In den einleitenden Kapiteln wird auf methodische Fragen eingegangen und die im speziellen Teil gewählte Darstellungsform erläutert. Die Regelungen des ICPN werden strikt befolgt. Für sechs Bereiche, in denen sich die gegenwärtige Fassung des ICPN als unklar oder widersprüchlich erweist, werden sinnvolle Präzisierungen vorgeschlagen.

Der spezielle Teil dieser Arbeit wird in zwei Teilen erscheinen. Die vorliegende erste hat neun Klassen der krautigen Vegetation grundwasserferner Standorte zum Gegenstand (Polygono-Poetea annuae, Sisymbrietea, Stellarietea mediae, Calluno-
and 151 further syntaxa are typified. Nomenclatural questions are discussed if appropriate and the reasons given when applications concerning *nomin a ambigu a, conservanda, invers a or mutata* are proposed.

The most important syntaxonomic novelties are the following: Subdivision of the Sisymbrieta into several orders, of which the Sisymbrietalia and the Con yzo canadensis-Brometalia tectorum ord. nov. occur in Central Europe – Subdivision of the Stel larietalia mediae into the Aperetalia spicae-venti, the Dicranello staphylinae-Stellarietalia mediae ord. nov. and the Papaveretalia rheadians ord. nov. – Subdivision of the Koelerio-Corynephoretea into the two subclasses Koelerio-Corynephorenea subcl. nov. and Sedo-Scleranthenea subcl. nov. – Establishment of an alliance Filipendulo vulgaris-Helictotrichion pratensis all. nov. which contains floristically impoverished semi-dry grasslands in the southern Baltic area – Subdivision of the Molinio- Arrhenatheretalia into the two subclasses Arrhenath eretalia subcl. nov. and Molinio-Juncetalia subcl. nov. – Subdivision of the Trifolio-Geranieta into the two subclasses Melampyro-Holcetalia subcl. nov. und Trifolio-Gerani etalia subcl. nov. (containing the Origanetalia vulgaris s. str. and the Antherico-Gerani etalia sanguinei ord. nov.) – Subdivision of the Artemisetalia vulgaris into the four subclasses Epilobienea angustifoli, Lamio albi-Urticenea dioicae subcl. nov., Agropyrene intermedio-repentis subcl. nov. (containing the Rubo caesii-Callamagrostietalia epigei ord. nov. and the Agropyr etalia intermedio-repentis) and Artemisienea vulgaris.

1 Introduction

The project ‘Plant communities of Mecklenburg-Vorpommern and their vulnerability’ (cf. BERG et al. 2001a; ABDANK et al. 2002; DENGLE & BERG 2002) is compiling a current overview of the vegetation types in this federal state of NE Germany as well as an assessment for nature conservation purposes. The classification was based on one of the world’s largest data bases of vegetation relevés (cf. Ewald 2001) and by putting the Braun-Blanquet approach into unambiguous concrete terms. A team of more than a dozen scientists is working on this project, some of them since 1993. The results will be published in a two-volume monograph. The first volume includes the tables and is already available (BERG et al. 2001b) whilst the text volume will be published at the same time as this paper (BERG et al. 2003).

Our fundamental syntaxonomic revision necessitated the establishment of several new syntaxa. In some cases our nomenclatural enquiries made it clear that certain names of syntaxa in current use have not yet been validly published in terms of the International Code of Phytosociological Nomenclature (WEBER et al. 2000, in the following cited as ICPN). Consequently these syntaxa need to be validated. In
addition, it appeared to be reasonable to fix nomenclatural types with the aim of establishing a clear and stable scientific nomenclature of plant communities. A number of reasons have prompted us to publish these nomenclaturally relevant decisions in a scientific journal instead of including them in the text volume of our monograph (BERG et al. 2003):

- We did not want to ‘overload’ the book with nomenclatural information because it was primarily designed for local conservation practitioners.
- We regard our nomenclatural decisions as relevant for geobotanists throughout Europe.
- ICPN Recomm. 1A suggests that new names for syntaxa are not published in books.

The majority of the nomenclatural decisions necessary for BERG et al. (2003) are published in this paper. Only a few will be published separately, or have already been published: the classes Bidentetea TX. et al. ex VON ROCHOW 1951 (KIESLICH et al. 2003), the Cakiletea maritimae TX. & PREISING ex BR.-BL. & TX. 1952, and the Ammophiletea BR.-BL. & TX. ex WESTHOFF et al. 1946 (both: ISERMANN & DENGLER in prep.), as well as some associations that are described as completely new (DENGLER & KREBS 2003; LINKE 2003). We have divided this paper into two parts. Part I contains the general section as well as the special sections on the vegetation of anhydro-morphic sites with the exception of woodland. Part II is intended to be published in Feddes Repertorium 115 (3–4) and will include wetland-communities as well as woodland vegetation.

2 Material and methods

2.1 The syntaxa discussed

In general, the only syntaxa included in this paper are those that occur in Mecklenburg-Vorpommern. If no validly published and legitimate names were available for any of the syntaxa distinguished in BERG et al. (2001b, 2003), we are either validating existing names or – if necessary – publishing new names for them. The typifications similarly cover syntaxa occurring in the territory of the state, both correct names and syntaxonomic synonyms. Names of syntaxa which do not occur in Mecklenburg-Vorpommern are not validated here. However, provided we could identify the illegitimacy or invalidity of such syntaxon names, the comment ‘nom. illeg.’ or ‘nom. inval.’ has been added as well as the relevant ICPN article when we use these names in the text.

2.2 The study area and the syntaxonomic system

The special section (section 4) refers to the classification of the vegetation types of Mecklenburg-Vorpommern as worked out in our project. This has been described and discussed in detail in BERG et al. (2003) and by extensive synoptic tables of all syntaxonomic ranks in BERG et al. (2001b).

The character and differential species of the newly described syntaxa refer to Mecklenburg-Vorpommern, where we have checked that our criteria have been fulfilled by means of our extensive data base. Furthermore, we checked the standard vegetation surveys of Central Europe before defining character species to separate those species which characterise a syntaxon throughout Central Europe from those which are mainly of regional importance. For just a few classes of the herbaceous xerothermic vegetation (Sisymbrietea, Koelerio-Corynephoretea, Festuco-Brometea, Trifolio-Geranietea, Artemisietea vulgaris), the situation in Central Europe (and – in some cases – beyond) was taken into consideration by using a study which is based on the same methods as those used in this paper (DENGLER in prep.).

2.3 Comprehensiveness of the presentation

To keep this paper as short as possible, the reasons for the establishment of new syntaxa are only briefly explained in section 4. We have therefore hardly gone beyond the minimum formal requirements of the ICPN and have completely omitted vegetation tables. The syntaxonomic reasons and the characterisations can be found in BERG et al. (2001b, 2003) and in the further literature cited.

2.4 The syntaxonomic concept

Our syntaxonomic system (BERG et al. 2001b, 2003) is based on an extensive data base including more than 50,000 relevés from the
state territory of Mecklenburg-Vorpommern by means of a consistent concrete application of the Braun-Blanquet approach. This method has been published and described in Dengler & Berg (2002); for a methodological discussion see also Dengler (2003). Our method is based on the approach of Bergmeier et al. (1990) in combination with the concept of the central syntaxon (e.g. Dierschke 1994: 324). A few important points which are necessary for the understanding of the special section are mentioned here briefly:

- The classification is carried out separately for three different structural types of vegetation: woodlands, herbaceous vegetation (including dwarf shrubs) and one-layered cryptogam vegetation, the last of which is not considered here.

- Clear, testable criteria are used for character and differential species: The constancy of a differential species has to be at least twice as high as in the syntaxon from which it has to be separated. A character species has to fulfil this criterion compared with all other syntaxa of equal rank within the same structural type.

- Species which meet the character species criterion within several intercalated syntaxa, which is often the case, are called transgressive character species.

- Within each syntaxon of higher rank, one ‘central syntaxon’ can be described which is characterised by diagnostic species of the syntaxonomic level(s) above, but has insufficient or no character species of its own. As a result, there is no longer any need to erect informal (‘unranked’) communities.

- All homogeneous vegetation stands have been taken into account in our classification (completeness). So-called ‘atypical’ or ‘fragmentary’ types have not been ‘eliminated’ by field or table work – as has frequently been suggested or done by other authors.

### 2.5 Application of the nomenclatural rules

We have strictly followed the nomenclatural rules codified in the ICPN since we are convinced that long-term clarity and stability in the naming of syntaxa can only be achieved if the majority of phytosociologists carefully comply with the Code. However, in certain respects the recent edition of the ICPN has proved to be unclear or even contradictory (see also Dengler 2003: 176). In such cases we decided to apply consistently the solutions outlined below.

#### 2.5.1 Original diagnoses of monotypic and central syntaxa

According to ICPN Art. 8 Sect. 2 character and/or differential species must be explicitly indicated in the original diagnoses of higher syntaxa after 1.1.1980. However, this obligation is not compatible with the central syntaxon concept. It regularly happens in monotypic syntaxa (e.g. an order that comprises only one alliance) that the syntaxon of the higher rank actually has character species of its own, but they do not conform with the character species criterion at the lower rank. In such cases it should be accepted as a sufficient diagnosis of a syntaxon above the association level that, instead of mentioning diagnostic species, only its characteristics as a single or as a negatively defined central syntaxon should be pointed out (cf. the new alliance in section 4.9.5).

#### 2.5.2 Prefixes in syntaxon names

Before 1979, ecological or morphological prefixes were allowed in syntaxon names (ICPN Art. 12). However, there is no regulation in the ICPN concerning their spelling. As a result, both the hyphenated version and the single-word version are to be found in the literature – sometimes even for the same syntaxon (e.g. Xero-Brometum and Xerobrometum). For reasons of clarity and unambiguity, we generally separate such prefixes with a hyphen. We do not consider this to be an unauthorised change of name (ICPN Art. 29a) but as a permitted orthographic variant (cf. Dengler 2003: 183).

#### 2.5.3 Selection of lectotypes

Sometimes the only possibility when selecting the lectotype of an association is to violate either ICPN Art. 16 Sect. 2 (name-giving taxa must be included in the type relevé) or ICPN Art. 19a Sect. 2 (type relevé must be selected from the typical subassociation). The ten single relevés of the Coronopo-Matricarietum typicum in Sissingh (1969), for example, lack the...
two *Coronopus* species which can actually be found in relevés of the other subassociations described (see typification in section 4.1.1). Due to the fact that ICPN Art. 16 Sect. 2 will not be in force until 2002, we give priority in such cases to the permanent rule in ICPN Art. 19a Sect. 2 and follow it in selecting the lectotype [cf. the suggestion for improving the ICPN in Dengler (2003: 184)].

### 2.5.4 Author citations for ‘autonyms’

Since 1979, the name of a syntaxon of a supplementary rank that includes the type of the relevant principal rank must be formed by altering solely the rank-indicating termination (ICPN Art. 27a and 28a). The Code remains ambiguous concerning the kind of author citations that should be applied, since Art. 27a refers to Art. 51 for this question whilst Art. 28a refers to Art. 46. ICPN Art. 51 provides for an author citation with brackets whereas Art. 46 proposes a simple citation. Prof. Dr. Dr. H. E. Weber (in litt.), as chairman of the Nomenclature Commission, even supports the view that in such cases no author citation should be used at all. This interpretation is accepted, for example, by Rivas-Martínez et al. (2002). It seems to be based on an incorrect analogy to botanical nomenclature, where the so-called autonyms are not given an author citation of their own. This rule makes sense in botanical nomenclature, because an autonym of a taxon is usually mentioned together with its superior taxon and the author of that taxon [e.g. *Elymus repens* (L.) Gould subsp. *repens*]. By contrast, the names of subclasses (suborders, suballiances) are normally used without first naming the syntaxon of the superior principal rank and its author citation. We therefore suggest that for reasons of clarity ‘autonyms’ in phytosociology should bear a bracketed author citation, as this is the case for all other syntaxa which have also evolved from a change in rank. This means that Art. 27a should be followed here.

### 2.5.5 Supplementary ranks in the case of syntaxon names according to Art. 35

According to ICPN Art. 28a, the name of a syntaxon of a supplementary rank that includes the type of the relevant principal rank has to be formed by altering solely the rank-indicating termination. Therefore, the subclass of the Molinio-Arrhenatheretea that includes their type order Arrhenatheretalia should actually be named Molinio-Arrhenatherea (cf. 4.7.2). This rule can conflict with ICPN Art. 35, as is the case in this example. According to this article, the name of a syntaxon must not be retained if it is composed of the names of two taxa, each of which corresponds to one of the two syntaxa of the next subordinate principal rank included in the original diagnosis and if a division of the superior syntaxon separates these two subordinate syntaxa. The class Molinio-Arrhenatheretea comprised the two orders Arrhenatheretalia and Molinietalia in the protologue of Tüxen (1937). Braun-Blanquet (1949) assigned them to two separate classes which are reduced to subclasses by us. The rule in ICPN Art. 35 *expressis verbis* only holds for the principal ranks. Due to the inner logic of the Code, which always makes a very close connection between principal ranks and their relevant supplementary ranks, it seems adequate to us to apply ICPN Art. 35 when a class which has been correctly named is afterwards reduced to a subclass and is subordinated again under the previous, more broadly delimited class (analogous for the other supplementary ranks).

### 2.5.6 Nomina dubia

According to ICPN Art. 37, the name of an association may be rejected as a *nomen dubium* when its type relevé is considered to be so incomplete or so complex that an assignment to one of the currently distinguished associations does not seem possible. From our point of view, this regulation should be applied analogously to those associations that were validly published by the use of a synoptic table before 1979, if it can be shown that the relevant column in this table includes a considerable number of relevés that belong to different associations or even to higher syntaxa in the present system. It does not seem sensible in such cases to require a previous neotypification, since this could only be arbitrary.

### 2.6 Scheduled proposals to the CNC

According to the ICPN decisions relating to nomina conservanda, ambiguа, inversа and...
**mutata** are to be made by the CNC (Committee on Nomina Conservanda, Ambigua, Inversa & Mutata). In cases where we believe that such name-changes are well-founded according to the spirit of the Code, we use the *nomina proposita* but also note the currently valid names or name forms. Proposals to the CNC will be put forward simultaneously with this publication, or afterwards if this is not possible for nomenclatural reasons.

### 2.7 Typifications

For syntaxa not yet typified, we designate lecto- or neotypes if this is necessary for the determination of the correct name or if it is conducive to nomenclatural stability. Furthermore, an earlier typification is required according to ICPN App. IIIB whenever a proposal for a *nomen conservandum*, *nomen ambiguum* or *nomen inversum* is scheduled by us. Despite our comprehensive overview of the relevant phytosociological literature, it cannot be ruled out that we may have overlooked an earlier effective typification of a certain syntaxon by another author. This risk is all the greater because in recent years the Nomenclature Commission has no longer been following its own commitment to ensure the general dissemination of new typifications (ICPN App. IIA). Such a list was last published for typifications of the year 1994 (Theurillat & Moravec 1998). If it should be shown that we have typified a syntaxon for which a type has already been effectively designated, then our typification would be superfluous and therefore ineffective (ICPN Art. 19–21).

### 2.8 Authorship and recommended form of citation

Responsibility for the contents of the individual syntaxa in the special part of this paper rests exclusively with the person(s) named. In the case of newly described syntaxa (including validated syntaxa and those that have undergone a change of rank), the originator(s) named form(s) the author citation according to ICPN Art. 46. This would then read ‘<originator> 2003’. According to ICPN Recomm. 46C, the syntaxon name, for reasons of bibliographic unambiguity, should be cited as ‘<originator> in Dengler et al. 2003’.

### 3 Comments on the nature of the presentation in the special section

#### 3.1 Nomenclature of taxa

So far as the nomenclature of vascular plants is concerned, we follow Wisskirchen & Häupler (1998) for taxa occurring in Germany and ‘Flora Europaea’ (Tutin et al. 1968–1993) for all others. Bryophytes are consistently named according to Koperski et al. (2000) and lichens according to Scholz (2000). For this reason we do not give author citations for taxa.

#### 3.2 Arrangement of syntaxa

The classes are delimited and arranged in accordance with Berg et al. (2001b, 2003). All other syntaxa are subordinated to these accepted class names, according to the position of their type elements.

In general, each class section begins with the syntaxa that are being described as new, are being validated, are undergoing a change of rank or are being corrected due to taxonomic errors. They are arranged beginning with the highest rank. When we present a totally new delimitation or subdivision of a class, these treatments of individual syntaxa are preceded by a paragraph headed ‘general concept’ in which a short explanation is given. At the end of each class section additional typifications of syntaxa (cf. section 3.6) are published arranged by decreasing rank and alphabetically within the same rank.

#### 3.3 Names of syntaxa

The names of syntaxa belonging to ranks that are regulated by the ICPN are given in their orthographically correct form according to ICPN Art. 41. The original form of the name is also given in inverted commas, if this assists with the interpretation.

Syntaxa belonging to ranks not ruled by the ICPN (e.g. association groups) or without rank (e.g. informal communities) are cited in an unaltered form. If the author of such a unit has subordinated it to a syntaxon of a rank regulated by the ICPN we add the name of this in a standardised manner. In such cases we use square brackets, irrespective of whether and how this may have been done in the original reference.
3.4 Author citations

We do not abbreviate authors’ surnames in author citations apart from those of BRAUN-BLANQUET (BR.-BL.), OBERDORFER (OBERD.) and TÜXEN (TX.). Initials of the first names are added whenever it is necessary to avoid a homonymy. If it is clear which of two or more persons with the same last name published first in the field of syntaxonomy, the names may be only supplemented by initials in the case of the other author(s) (e.g. Tx. = Reinhold Tüxen, J. Tx. = Jes Tüxen). Author citations consisting of more than two persons are given in an abridged form with ‘et al.’.

With very few exceptions, we have carefully checked all the publications to which the author citation of syntaxon names refer and have included them in our reference list. This is indicated by an asterisk (*) following the year in each author citation. If there is more than one publication by a particular author within one year, each one is differentiated by adding lower case letters.

Unfortunately it is a common feature in phytosociological literature that unfounded elements have ‘slipped’ into author citations or even that these are totally incorrect. Author citations with brackets, for instance, are often used for validations when ‘ex’-citations would be appropriate. In such cases we use the correct form of the author citation but may add the commonly used incorrect one in square brackets and inverted commas. The mention of the emending author(s) preceded by ‘em.’ in cases when the delimitation of a syntaxon has been changed, as suggested by Recomm. 47A in the 2nd edition of the ICPN (BARKMAN et al. 1986), is no longer allowed, nor can it be done retrospectively since the publication of the 3rd edition of the ICPN (cf. WEBER 2001: 2). Consequently, we omit such emendation remarks from the author citations.

For syntaxa of ranks not covered by the ICPN rules or for informal communities, the reference is cited and is preceded by ‘sensu’. In such cases we have not attempted to determine who used the name first since the principle of priority only applies for syntaxa of ICPN ranks.

3.5 Structure of the ‘nomenclatural blocks’

Descriptions of new syntaxa and the publication of nomina correcta start with a short explanation as regards content. This is followed by the ‘nomenclatural block’ set in a smaller type size. The latter contains the nomenclaturally relevant information in a condensed way, similar to that used in DENGLER (2002) or KIESSLICH et al. (2003). Depending on the individual requirements, this block may consist of the following categories:

Protologue: Bibliographic reference to the original diagnosis (protologue) of the given syntaxon name or – in cases of changes of rank, corrections due to taxonomic errors or nomina nova – to its basionym1. If the original form of the name (including the author citation) deviates from the correct one used by us, the former is documented in inverted commas.

Type: The nomenclatural type is documented here, that is to say a single published relevé in the case of a (sub-)association or the validly published name of a syntaxon of the next subordinate principal rank in the case of a higher syntaxon. It is stated in square brackets what kind of nomenclatural type it is (see section 3.7) and who designated it, unless this has already been done in the original diagnosis. If a type syntaxon is not regarded as a correct syntaxon name within the adopted taxonomic scheme, either because it is illegitimate or because it is a later taxonomic synonym, we indicate the correct syntaxon name in round brackets.

Syn.: The most important nomenclatural and taxonomic synonyms and other names of the same rank such as pseudonyms2 and phantom names (see 1 We use the term ‘basionym’ in the sense of WEBER (2003: 402) for every name on which a new name is based and the type of which is automatically adopted.

2 In contrast to ICPN Recomm. 46J, we are deliberately including pseudonyms in the synonymy: As pointed out in DENGLER (2003: 185), there are only gradual differences between a syntaxon name in its original delimitation, a more or less emended version of it and, finally, a version which is changed in a way that excludes the type
3.8.5) are listed here in chronological order. In principle, each name is followed by a nomenclatural assessment (see 3.8) in square brackets.

Incl.: Syntaxa that belong to one of the following categories are listed. They are arranged by decreasing rank and alphabetically within the same rank: 1) Syntaxa of a superior rank, if they are completely included in the given syntaxon. 2) Syntaxa of a lower rank than the given syntaxon if they are often placed elsewhere within the syntaxonomic system. 3) Syntaxa without clear indication of rank (Art. 3d; e.g. communities) or with a rank that does not comply with the ICPN (Art. 3d; e.g. association groups). 4) As an exception, concrete vegetation units which are not syntaxa in the sense of the ICPN.

Excl.: Syntaxa of subordinate rank which are excluded from the given syntaxon in our classification, but are not excluded in the relevant literature, may be listed at this point.

C: Character species of the given syntaxon.
D: Differential species of the given syntaxon: In general they are valid against all syntaxa of the same rank within the next superior syntaxon. If the differential species criterion is only considered to be met in some of these cases, the syntaxa with which the respective syntaxon shares them are mentioned in round brackets.

Note: Nomenclatural comments if needed.

3.6 Presentation of the typifications

A typification consists of two lines. In the first one, the syntaxon name to be typified is given together with an accurate reference (source: page) to its valid original diagnosis. If appropriate, the original form of the name, its basionym and/or further homotypic names are given in round brackets. In a second, indented line the selected type is given, also accompanied by an exact bibliographic reference. The kind of nomenclatural type (see 3.7) as well as an indication who of us is responsible for its selection is stated in square brackets.

In general, we do not discuss the typifications, since the ICPN leaves them up to the authors provided that the rules are followed. Where appropriate, previous incorrect typifications are mentioned. Furthermore, intended proposals for nomina ambigua, conservanda and inversa to the CNC are discussed. The most important floristic literature of the last 20 years (cf. ICPN Art. 45) has been checked to see if proposals for nomina mutata are justified, but they are not discussed here since the reasons should be self-evident. Finally, association names, which – within our classification – are not correct but are later syntaxonomic synonyms of other names, are assigned to their correct position.

3.7 Nomenclatural types

The following cases of nomenclatural types (short: types) are to be distinguished:

- **Holotypus:** The type has already been selected in the original diagnosis of the syntaxon, or there was only one element included (ICPN see Art. 18).
- **Holotypus (Art. 27a):** A type remains unaltered if the rank of a syntaxon changes between a principal rank and the supplementary rank belonging to it (and vice versa).
- **Lectotypus:** A type that has been selected from the elements included in the original diagnosis (cf. ICPN Art. 19), either by the authors mentioned or in the present paper (‘hoc loco’).
- **Lectotypus (Art. 20):** If the original diagnosis of a higher syntaxon includes one syntaxon of the next subordinate rank the name of which only differs by the ending, this syntaxon must be selected as lectotype.
- **Neotypus:** If only synoptic tables but no single relevés are published in the original diagnosis of a (sub-)association, another relevé must be designated as neotype. According to ICPN Art. 21 and Recomm. 21A, preference should be given to one of those relevés on which the synoptic table in the protologue was based, or – if not available – at least one from the same geographical region.

3.8 Nomenclatural assessment of the names of syntaxa

Reasons for the invalidity or illegitimacy of a syntaxon name may be manifold. In the ‘no-
menclatural blocks’ they are generally mentioned by making reference to the appropriate rule of the ICPN in square brackets. This is more precise and is shorter than the commonly used appositive expressions such as ‘nom. inval.’ or ‘nom. illeg.’, because they generally involve different cases. In the following paragraphs, the different breaches of the rules to which we refer in the special section are listed. If there are cross-references in the ICPN we always refer to the most detailed rule, and these are emphasised by use of bold face in the following overview. The relevant ICPN Articles are mentioned in square brackets.

3.8.1 *Nomina inedita* – not effectively published names

- **Art. 1**: The name has not been used in printed matter which is generally accessible to botanists, but has instead been included for example in a manuscript, in an unpublished hectograph or in a lecture.

3.8.2 *Nomina invalida* (including *nomina nuda* according to Arts. 7 and 8) – not validly published names

- **Art. 3b [Art. 2d]**: The name has been published provisionally.

- **Art. 3f [Art. 2d]**: A name-giving taxon is not indicated either directly or indirectly. This means that it is either missing in the assigned relevés (in the case of an association) or in the original diagnoses of the assigned syntaxa (in the case of a higher syntaxon).

- **Art. 5 [Art. 2d]**: Since 1979: Nomenclatural type missing.

- **Art. 7 [Art. 2b]**: Insufficient original diagnosis in the case of an (sub-)association. This means that an assigned relevé was not published in the same paper, nor was an unambiguous bibliographic reference given to one (before 1979 a synoptic table was sufficient).

- **Art. 8 [Art. 2b]**: Insufficient original diagnosis in the case of a higher syntaxon. This means that no validly published syntaxon of the principal rank below this is clearly assigned, because no such syntaxon is included or an unambiguous reference to the protologue of its valid publication is missing.

3.8.3 *Nomina illegitima* – illegitimate names

- **Art. 24a**: Unauthorised change of the name of a syntaxon that includes its type element. This is the case if it is divided up into two or more syntaxa of the same rank.

- **Art. 29c**: A name, the protologue of which contains a validly published syntaxon of the same rank or includes its type element (*nomen superfluum*).

- **Art. 31**: Later homonym.

- **Art. 32a**: Later name that is considered to be an orthographic variant of an earlier one (special case of homonymy).

- **Art. 32b**: Later name that is derived from a homotypic taxon name (special case of homonymy).

- **Art. 34a**: Name that contains an epithet in the nominative case that indicates a geographical, ecological or morphological property.

- **Art. 38**: Name of a higher syntaxon the type element of which is considered to be a *nomen dubium*.

3.8.4 Syntaxonomic synonyms

A syntaxonomic synonym is an effectively and validly published legitimate name that is founded on a different type (heterotypic synonym) than the correct earlier name, in the synonymy of which it is listed. All interpretations as syntaxonomic synonyms follow the syntaxonomic system in BERG et al. (2001b, 2003). If syntaxa are delimited in a different way, syntaxonomic synonyms themselves can become correct names (cf. ICPN Def. X). According to the type principle, those syntaxa that are only partly identical (see 3.8.6) also belong here if the type element is included.

3.8.5 Phantom names

A ‘phantom name’ is a name that has not been used by the person(s) named in the author citation in the stated source, either literally or in a form which is homonymous according to the regulations of ICPN. The ‘cited’ source may even be non-existent. MUCINA (1993a: 21) introduced the striking term ‘phantom name’ for such cases. They are attributions by later authors and do not have any nomenclatural significance.

3.8.6 Partial correspondences of names

To express the partial correspondences of syntaxon names, we use the abbreviations ‘p. p.’, ‘p. min. p.’ and ‘p. max. p.’ (see section 3.9) after the author citation. ‘p. p.’ means that the syntaxon in question belongs only partly to the syntaxon in which synonymy it is listed.

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3 It sometimes happens that a phantom name is unintentionally validated by a later author, simply by using it.

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Provided that a name is validly published and that the case is of nomenclatural relevance, we indicate the position of its type element in our syntaxonomic system for partial correspondences. The part of the syntaxon that includes the nomenclatural type is marked as ‘syntax. syn.’ or ‘typo incl.’, whilst the other part(s) is/are marked as ‘typo excl.’. It rarely happens that a later author publishes a new name for an already existing one (basionym) and unknowingly excludes the nomenclatural type of the latter in his/her description – at least within our syntaxonomic system. Such cases are indicated with ‘descr. incl., typo excl.’. The syntaxa to which the name, according to the type element, belongs are then marked as ‘typo incl., descr. excl.’.

The nomenclatural assessment of a syntaxon name generally refers to its delimitation in the original diagnosis. Later expansions of its content (emendations) may be assessed additionally. They are cited with ‘<actual author citation> sensu <emending author(s)> p. p.’ or in the case of ‘real’ pseudonyms with ‘sensu <emending author(s)>, non <actual author citation>’.

3.9 Abbreviations used

* = author citation which has been checked and included in the reference list
= = assignment of a syntaxonomic synonym (within the syntaxonomic system presented here)
≡ = assignment of a homotypic syntaxon name
agg. = aggregate (informal name of a species group)
all. nov. = alliancia nova (newly described phytosociological alliance)
App. = Appendix (of the ICPN)
Art. = Article (of the ICPN)
ass. nov. = associatio nova (newly described phytosociological association)
C = character species
CNC = Committee on Nomina Conservanda, Ambigua, Inversa and Mutata (of the Nomenclature Commission)
corr. = corretlx/correxerunt (name of a syntaxon which has been corrected due to a taxonomic error by the subsequently named author(s))
D = differential species
Def. = Definition (by the ICPN)
descr. excl. = descriptio excluso (not including the description within the given syntaxonomic system)
descr. incl. = descriptio incluso (including the description within the given syntaxonomic system)
Ges. = Gesellschaft (community)
HW = Hochwert (latitudinal coordinate in the German grid)
MTB = Messtischblatt (Sheet number of a German topographical map, scale 1 : 25,000)
nom. amb. propos. = nomen ambiguum propositum (name of a syntaxon which is proposed to be rejected because of contradictory interpretations)
nom. cons. propos. = nomen conservandum propositum (name of a syntaxon which is proposed to be protected against an earlier syntaxonomic synonym)
nom. corr. = nomen correctum (name of a syntaxon which is corrected due to a taxonomic error)
nom. dub. = nomen dubium (name of an association which is rejected due to the incompleteness or complexity of its type-relevé, or name of a superior syntaxon whose type-element is considered to be a nomen dubium)
nom. illeg. = nomen illegitimum (illegitimate name of a syntaxon)
nom. inval. = nomen invalidum (not validly published name of a syntaxon)
nom. invers. propos. = nomen inversum propositum (name of a syntaxon in a proposed reverse sequence)
nom. mut. propos. = nomen mutatum propositum (name of a syntaxon in the proposed form adapted to the current taxonomic nomenclature)
ord. nov. = ordo nova (newly described phytosociological order)
p. max. p. = pro maximo parte (to the greatest extent)
p. min. p. = pro minimo parte (to the smallest extent)
p. p. = pro parte (partly)
Recomm. = Recommendation (of the ICPN)
4 The individual syntaxa

4.1 Polygono-Poetea annuae RIVAS-MARTÍNEZ 1975

4.1.1 Typifications

Polygono arenastri-Poetalia annuae Tx. in GÉHU et al. 1972*: 6 corr. RIVAS-MARTÍNEZ et al. 1991*: 198 (original form: Polygono avicularis-Poetaia annuae):
Saginion procumbentis TX. & OHBA in GÉHU et al. 1972*: 6. [lectotypus DENGLER & WOLLERT hoc loco]

Polygono-Coronopion SISSINGH 1969*: 180:
Coronopo-Matricarietum SISSINGH 1969*: 181 [lectotypus DENGLER & WOLLERT hoc loco]

Bryo argentei-Saginetum procumbentis DIEMONT et al. 1940* nom. invers. propos. (original form: Sagino-Bryetum argentei):
DIEMONT et al. (1940: tab. 8, rel. 11) [lectotypus DENGLER & WOLLERT hoc loco] – Being a vascular plant, Sagina procumbens belongs to a higher stratum than the moss Bryum argenteum. For this reason, the inversion of the name in accordance with ICPN Art. 42 is proposed.

Coronopo-Matricarietum SISSINGH 1969*:
SISSINGH (1969: tab. 1, rel. 6) [lectotypus DENGLER & WOLLERT hoc loco] – Regarding the selection of the lectotype, see section 2.5.3. This name thus becomes a later syntaxonomic synonym of the Poetum annuae FELFÖLDY 1942*, its correction according to ICPN Art. 43 does not seem necessary.

4.2 Sisymbrietea KORNECK 1974 nom. cons. propos.

4.2.1 Conyzo canadensis-Brometalia tectorum (PASSARGE 1988) WOLLERT & DENGLER ord. nov. hoc loco

PASSARGE (1988) was the first Central European author who supported the point-of-view that those ruderal communities dominated by annual plants which grow at sites with low humus content should be separated from the order Sisymbrietalia J.TX. ex GÖRS 1966* nom. cons. propos. He accordingly proposed assigning them to the already existing Mediterranean order Brometalia rubenti-tectorum. There is no doubt about communities of the Brometalia rubenti-tectorum being found in analogous sites, but their floristic composition,
apart from Bromus tectorum, differs greatly from the syntaxa of Central Europe (see Rivas-Martínez & Izco 1977). For this reason we recommend the assignment of the corresponding communities in temperate Europe to a separate order. This order thus contains the ruderal communities dominated by annual plants in the temperate zone that occur at sites with a low nitrogen content. The Salsolion ruthenicae Philippi 1971* is the only alliance known at present. Differing from usage in the syntaxonomic literature, we separate this alliance (and hence the order) not primarily on the basis of chorological aspects but mainly as a result of edaphic conditions. Accordingly we assign the emended version of the Linariobrometum tectorum R. Knapp 1961* as the central association of this alliance (cf. Dengler 2001b; Dengler & Wollert in Berg et al. 2003).

Protologue: ‘Conyzo-Bromenalia tectorum’ (Passarge 1988: 196)

Type: Conyzo-Bromion tectorum Passarge 1988* [*’1978’] (= Salsolion ruthenicae Philippi 1971*) [holotypus (Art. 27a)]


C: Chaenorhinum minus, Chenopodium botrys, Corispermum marshallii, Digitalis sanguinalis, Salsola kali subsp. tragus, Senecio viscosus

D: Arenaria serpyllifolia agg., Bromus tectorum, Setaria viridis

Note: The interpretation of the suborder Conyzo-Bromenalia tectorum Passarge 1988* as a nomen invalidum, as proposed by Theurillat & Moravec (1991: 208), is not accepted. Passarge (1988) assigns two alliances to this suborder, and designates one of them (‘Conyzo-Bromion tectorum Passarge 1978’) as the nomenclatural type. It is irrelevant for the validity of the description that the reference ‘Passarge 1978’ is missing in the reference list of the original diagnosis. The author assigns a validly published association to this alliance as a nomenclatural type, which validates the alliance.

4.2.2 Bromo tectorum-Corispermum leiptopteri Sissingh & Westhoff ex Sissingh 1950 nom. corr. Dengler hoc loco

Protologue: ‘Bromus tectorum-Corispermum hyssopifolium-Associate (Kruuseman 1941) Sissingh et Westhoff 1946’ (Sissingh 1950: 109)

Type: Sissingh (1950: tab. 34, rel. 10) [lectotypus Dengler & Wollert hoc loco]

Note: This correction of the name was proposed in Dengler (2002: 67). For purely formal reasons, this revision did not take effect because between submission and publication of the manuscript, the 3rd edition of the ICPN was published and could not be taken into account. In the 3rd edition, Art. 43 Sect. 2 stipulates that the correction of a name ‘on or after 1.1.2002 must be indicated by means of the words “nom. corr. hoc. loco”‘, whereas the correction in Dengler (l.c.) was indicated only with ‘corr. hoc. loco’. For this reason, the correction is repeated here, though so far as the reasons and the correct author citation are concerned we refer to the publication of Dengler (l.c.).

4.2.3 Typifications

Chenopodietea Br.-Bl. in Br.-Bl. et al. 1952*: 53:

Chenopodietalia Br.-Bl. in Br.-Bl. et al. 1936*: 11 [lectotypus (Art. 20)] – The name of this class thus becomes an older syntaxonomic synonym of the Sisymbrietea Korneck 1974* and according to the principle of priority it should replace the name Sisymbrietea Korneck 1974*. However, because the original diagnosis of Chenopodietea contained communities of the Sisymbrietea as well as considerable portions of the recent classes of Bidentetea TX. et al. ex von Rochow 1951*, Stellarietea mediae TX. et al. ex von Rochow 1951* and Artemisietea vulgaris TX. et al. ex von Rochow 1951*, and because the re-introduction of this as the correct name for the substantially restricted version of the class from the annual ruderal communities on sites with deep ground-water levels would give rise to continual misinterpretations, we propose to reject the name Chenopodietea Br.-Bl. in Br.-Bl. et al. 1952* as a nomen ambiguum. At the same time, we are applying to protect the more usual name Sisymbrietea Korneck 1974* (also partly cited in the literature with the incorrect authors Gutte & Hilbig 1975*) as a nomen conservandum.
Brometum sterilis Görs 1966*: 534:
Chenopodietum stricti (O Berd. 1957*) Passarge
Conyza canadensis-Lactucetum serriolae Loehmeyer
Chenopodietalia BR.-BL. ex BR.-BL. et al. 1936*:
Atriplici-Sisymbrion Hejný 1978*: 268:
Chenopodietum botryos Sukopp 1971*:

Descurainietum sophiae PASSARGE 1959*: 46 nom.
mut. propos. (original form: Sisymbrietum so-
phiae):
contains syntaxa growing on base-rich soils with moderate acidity. This division gives a better ecological and floristic characterisation. The third order, which is characteristic of soils rich in carbonate, is equivalent to the recent classifications mentioned above.

4.3.2 Dicranello staphylinae-Stellarietalia mediae MANTHEY ord. nov. hoc loco
This is the central order of the class Stellarietea mediae. It comprises weed syntaxa that are characterised by the absence of floristic indicators both for very acidic and for alkaline soils (see MANTHEY 2001). Just two bryophytes are at least two times more frequent than in the other Central European orders, and they can thus be recognised as character species. Several species-poor syntaxa that were described without character species below the class rank (so called basal or derivate communities) can be assigned to this central order. According to current knowledge, the alliances Aphanion arvensis J.TX. & TX. in MALATO-BELIZ et al. 1960* (as delimited by MANTHEY in BERG et al. 2003) and Oxalidion europaeae PASSARGE 1978a* belong to this order.

Type: Aphanion arvensis J.TX. & TX. in MALATO-BELIZ et al. 1960*:146 [holotypus]
Syn.: Chenopodietalia BR.-BL. ex BR.-BL. et al. 1936* p. min. p. [typo excl.]
Chenopodietalia albi TX. & LOHMEYER ex VON ROCHOW 1951* p. p. [Art. 32 a]
Sperguletalia arvensis HÜPPE & HOFMEISTER 1990* p. p. [Art. 5, 29c]
Solano nigri-Polygonetalia convolvuli (SIS- SINGH in WESTHOFF et al. 1946*) O.DE BOLÔS 1962 sensu RIVAS-MARTÍNEZ 2002* [Art. 8]
Incl.: Solano-Polygonenalia SISINGH in WESTHOFF et al. 1946* p. min. p. [Art. 8]
C: Dicranella staphylina, Leptobryum pyri- forme

4.3.3 Papaveretalia rhoeadis HÜPPE & HOFMEISTER ex MANTHEY ord. nov. hoc loco
As proposed by HÜPPE & HOFMEISTER (1990), all weed syntaxa growing on carbonate-rich soils were combined in this order. The syn-
based on a gradient of base supply and are incompatible with the original concept of TÜXEN (1950). Even if a successful typification were made, this name would give rise to continuous misinterpretation. For instance, MUCINA (1993b) recommended the name Centaureetalia cyani T. et al. in T. 1950* for the order of weed communities growing on base-rich, alkaline soils, even though Centaurea cyanus is more frequent on acidic fields (compare MANTHEY 2001). Secondly, the only validly published alliance included in the valid publication of the order Centaureetalia cyani (VON ROCHOW 1951: 6), which therefore must be selected as lectotype, is ambiguous. It is the Agrostidion spicae-venti T. ex VON ROCHOW 1951*, which is described in the paper by TÜXEN (1950) as an alliance of weed communities from strong to weak acidic sandy to loamy soils (l.c.: 25). In her paper VON ROCHOW unintentionally validates the alliance. The only association in this alliance, the Lathyro aphaci-Agrostietum spicae-venti VON ROCHOW 1951*, automatically becomes the holotype. In this association acidophytic species are largely absent. The relevés in the synoptic table seem to belong partially to the alliances Veronico-Euphorbion SISINH ex PASSARGE 1964* and Caucalidion T. ex OBERD. 1957* in the order Papaveretalia rhoeadis. Due to the discrepancy between the description and the type location, the name of the order should be rejected as a nomen ambiguum. Because VON ROCHOW (1951) did not publish single relevés, it is not possible to assign the type association clearly to one alliance in the present classification. For this reason we consider the Lathyro aphaci-Agrostietum spicae-venti VON ROCHOW 1951* as a nomen dubium (cf. section 2.5.6). The higher syntaxa typified by the association according to ICPN Art. 38 thus become nomina dubia as well.

4.3.4 Typifications

Stellarietea mediae T. et al. ex VON ROCHOW 1951*: 6: 
Centaureetalia cyani T. et al. ex VON ROCHOW 1951*: 6 [lectotypus MANTHEY & DENGLER hoc loco]
Aperietalia spicae-venti J. T. & T. in MALATO-BELIZ et al. 1960*: 146: 
Arnoseridion minimae MALATO-BELIZ et al. 1960*: 145 (= Scleranthion annui KRUSEMAN & VLIJER 1939*) [lectotypus MANTHEY hoc loco]
Centaureetalia cyani T. et al. ex VON ROCHOW 1951*: 6: 
Agrostidion spicae-venti T. ex VON ROCHOW 1951*: 6 [lectotypus MANTHEY hoc loco] – This lectotype selection is the only one possible, because the second alliance mentioned in the original diagnosis of the order, the Caucladion lappulae T. 1950*, is not validly published [ICPN Art. 8]. Nor is it validated by VON ROCHOW (1951), because the only association, the ‘Lathyretum aphaci’ KUHN 1937*, is a phantom name.

Polygono-Chenopodietalia J. T. ex PASSARGE 1964*: 87: 
Spergulo-Erodion J. T. ex PASSARGE 1964*: 88 [lectotypus MANTHEY hoc loco]
Aperion spicae-venti T. ex OBERD. 1957*: 18: 
Teesdalio-Arnoseridetum OBERD. 1957*: 18 [lectotypus MANTHEY hoc loco] – The author citation ‘T X. 37’ as used by OBERDORFER (1957) for the association is not justified since no such association is included in TÜXEN (1937).

Aphanion arvensis J. T. & T. in MALATO-BELIZ et al. 1960*: 146: 
Alchemillo arvensis-Matricarietum chamomillae T. 1937*: 18 [lectotypus MANTHEY hoc loco]
Caucladion T. ex OBERD. 1957*: 25: 
Caucladido-Adonidetum T. ex OBERD. 1957*: 30 [lectotypus MANTHEY hoc loco]
Oxalidion europaeae PASSARGE 1978a*: 148: 
Galeopsio-Chenopodietum OBERD. 1957*: 60 [lectotypus MANTHEY hoc loco]
Spergulo-Erodion J. T. ex PASSARGE 1964*: 88: 
Digitario-Chenopodietum albi PASSARGE 1964*: 89 [lectotypus MANTHEY hoc loco] – The relevés underlying the synoptic table in the protologue of this association in PASSARGE (1964) seem to belong partly to the Sclerantho annui-Arnoseridetum minimae T. 1937* and to the Spergulo arvensis-Chrysanthemetum segetum BR.-BL. & DE LEEUW ex T. 1937* (both in the alliance Scleranthion annui KRUSEMAN & VLIJER 1939*).
Veronica-Euphorbion Sissingh ex Passarge 1964*: 95;
Veronica agrestis-Fumarietum Tx. in J.Tx. 1955*: 84 (= Veronica-Lamietum hybridum Kruseman & Vlieger 1939*) [lectotypus Manthey hoc loco] – The typification of the alliance with the Mercurialietum annuae Kruseman & Vlieger 1939* by Mucina (1993b: 118) was not legitimate since this association was neither validly published by Kruseman & Vlieger (1964) nor included in the protologue of Passarge (1964).

Scleranthion annui Kruseman & Vlieger 1939*:
Alchemillo arvensis-Matricarietum chamomillae Tx. 1937*: 18 nom. mut. propos. (original form: Alchemillio arvensis-Matricarietum chamomillae):
Bryum rubens 2a, Cirsiun arvense 2a, Elymus repens 2a, Tripleurospernum perforatum 2a, Bryum argenteum 2m, Dicranella staphylinia 2m, Apera spica-venti 1, Aphanes arvensis 1, Myosotis arvensis arvensis 1, Plantago major major 1, Poa annua 1, Sonchus arvensis 1, Viola arvensis subsp. arvensis, Atriplex patula +, Chenopodium album +, Conyza canadensis +, Gnaphalium uliginosum +, Matricaria recutita +, Riccia glauca +, Rumex crispus +, Taraxacum sect. Ruderalia +, Veronica arvensis +, Carduus crispus +, number of species 23, relevé area 50 m², total cover 95%, cover crop layer (winter-sown rye) 60%, cover herb layer 30%, cover cryptogam layer 10%, pH (KCl) = 5.95, CaCO3 0.0%, C/N ratio = 8.8, Brandenburg near Strasburg, MTB 2548, RW 5413, 180 km, HW 1919. 180 km. 19.08.1998 – relevé taken from Manthey (2003: tab. A.11, rel. 465) [neotypus Manthey hoc loco]. – The nomen mutatum is proposed because the name Alchemilla arvensis has not been used for the naming-giving species for a long time.
Papaveretum argemones (Libbert 1932*) Kruseman & Vlieger 1939*: 343 nom. cons. propos. (= Sclerantho annui-Myosuretum minimi Libbert 1932*): Kruseman & Vlieger (1939: tab. 4, rel. 2) [lectotypus Manthey hoc loco] – The suggestion of Mucina (1993b: 127), that the Sclerantho annui-Myosuretum minimi was invalidly published by Libbert (1932: 17), is not correct. Libbert (i.e.) simply published relevés without abundance values, but the 12 complete species lists given in his paper are equivalent to a synoptic table, which is sufficient for a valid description of an association before 1979 (ICPN Art. 7 Sect. 2). The Sclerantho annui-Myosuretum minimi is actually the valid name of the type association, but we propose to conserve the recently and frequently used nomen novum from Kruseman & Vlieger (1939) in its place.

4.4 Calluno-Ulicetalia Br.-Bl. & Tx. ex Klika & Hadač 1944*

4.4.1 Typifications
Quercus-Ulicetalia Lebrun et al. 1949*: 174;
Calluno-Ulicetalia ['(Quantin) Tüxen'] Lebrun et al. 1949*: 174 [lectotypus Berg, Dengler & Spangenberg hoc loco];
Calluno-Genistetalia Schwickerath 1944*: 233;
Ulicetalia (Quantin 1935*) Tüxen 1937*, as often can be found in the literature, is not authorised according to ICPN Art. 40 in combination with Recomm. 10C since it is not clear from which Genista-species the syntaxon name is formed.
The synoptic list of Tüxen (1937: 117) includes both Genista pilosa and G. anglica, with 59% and 50% constancy respectively.
Ulicion Quentin 1935*: 163:
Ulici nani-Callunetum vulgaris Allorge 1921 [lectotypus Berg & Dengler hoc loco] – This association was first published 1921 in a series of papers in the journal „Revue Général de Botanique“. All these papers were published a sec-

5 The interpretation of the class name used here as a nomen nudum by Mucina (1997: 138) is unfounded. Klika & Hadač (1944b: 289) included in this class the validly published order Calluno-Ulicetalia (Quantin 1935*) Tx. 1937*, and it is nomenclaturally irrelevant that this is an illegitimate name. An unambiguous bibliographic reference to the protologue of this order is also given, since the textbook of Klika & Novák (1941, ‘Praktikum’) is cited under the class and in this work ‘Tüxen 1937’ is included in the reference list. The precise bibliographic reference to Klika & Novák (1941) is given in the first part of the publication series (Klika & Hadač 1944a: 249).
ond time with identical text as a monograph (ALLOGGE 1922) where the protologue of the Ulici nani-Callunetum vulgaris can be found on page 264.

Genisto pilosae-Callunetum vulgaris BR.-BL. 1915* nom. invers. propos. (original form: ‘Landes à Calluna et Genista pilosa (Calluneto-Genistetum)’):

BRAUN (1915: 129, rel. a) [lectotypus BERG & DENGLER hoc loco] – The inversion of the name is proposed following ICPN Art. 42, since Calluna vulgaris in the two relevés of the protologue has considerably higher abundance-cover values than Genista pilosa.

4.5 Koelerio-Corynephoretea KLIKA in KLIKA & V. NOVÁK 1941

4.5.1 General concept

As first explained in DENGLER (2001a) and in detail in DENGLER (2003: 201), communities of dry grasslands on sandy soils (Koelerio-Corynephorenea) and those of weathered rock and outcrops (Sedo-Scleranthenea) have many species in common which can only be listed as character species of a class when both units are combined into a single class. The most constant taxa under these syntaxonomic conditions are Tortula ruralis agg., Ceratodon purpureus subsp. purpureus, Rumex acetosella, Polytrichum piliferum, Cetraria aculeata and Sedum acre (cf. DENGLER 2003: 202). Each of the two community-groups has in itself an extensive pool of separate character species which is broadly absent in the other group (see below). From a European point-of-view, both groups contain several orders and so it is correct to give them the rank of subclasses (see sections 4.5.2 and 4.5.3).

4.5.2 Koelerio-Corynephorenea

(KLIKA in KLIKA & NOVÁK 1941)

DENGLE stat. nov. hoc loco

According to the current knowledge, the Koelerio-Corynephorenea (communities of dry grasslands on sandy soils) contain the following 6 orders: Corynephoretalia canescens KLIKA 1934* (subatlantic, Silvergrass-rich pioneer communities), Artemisio-Koelerietalia abscenscis SISSINGH 1974* (atlantic and subatlantic short-grass dunes), Thero-Arietalia RIVAS GODAY 1964* (atlantic and subatlantic, therophyte-rich silicolous dry grasslands), Jasiono sesseliflorae-Koelerietalia crassipes RIVAS-MARTÍNEZ & CANTÓ 1987* (silicolous dry grasslands of the North Iberian mountains, dominated by perennials), Trifolio arvensis-Festucetalia ovinae MORAVEC 1967* (mesophytic silicolous grasslands dominated by hemicyryptophytes), Sedo acris-Festucetalia TX. 1951* nom. invers. propos. (subcontinental and continental sand-swards rich in Koeleria glauca). A map of the potential distribution area of the subclass is given in DENGLER (2003: 217).

Protologue: ‘Koelerio-Corynephoretales’ (KLIKA in KLIKA & NOVÁK 1941: 59)

Type: Corynephoretalia KLIKA 1934* [holotypus (Art. 27a) – as lectotype for the class, designated by MORAVEC (1967: 173)]

Incl.: Corynephoretea LEBRUN et al. 1949* Caricetea arenariae DOING 1963* [Art. 8]


Helichryso-Crucianelletea GÉHU et al. ex SISSINGH 1974* p. p. [typo incl.]

C: Agrostis delicatula, Aira praeceoc, Arenaria querioides, Brachythecium al-bicans, Bromus thominii, Campylopus introflexus, Carex ligerica, C. praeceox subsp. praeceoa, Cerastium semidecandrum, Cetraria muricata, Corynephorus canescens, Ephedra distachya subsp. distachya, Erodium ballii, Jasione montana, Helichrysum arenarium, Herb-iaria scabrida, Hieracium castellatum, Myosotis ramosissima, Paronychia polygonifolia, Phleum arenarium, Silene conica, Spergula morisonii, Teesdalia nudicaulis, Trifolium campestre, Vulpia bromoides

D: Agrostis capillaris, Carex arenaria, Hypochaeris radicata

4.5.3 Sedo-Scleranthenea (BR.-BL. 1955)

DENGLE stat. nov. hoc loco

The subclass consists of weathered rock and outcrop communities. According to current knowledge, it contains the two orders Sedo-Scleranthetalia BR.-BL. 1955* (acidophytic communities) and Alyssoo alyssoidis-Sedetalia MORAVEC 1967* (basiphytic communities).
map of the potential distribution area of the subclass is given in DENGLER (2003: 218).

Protologue: ‘Sedo-Scleranthetea’ (BRAUN-BLANQUET 1955: 484)

Type: Sedo-Scleranthetalia BR.-BL. 1955*

C: Arenaria serpyllifolia agg., Cerastium pumilum agg., Cladonia foliacea, Eropherila verna, Holosteum umbellatum, Jovibarba globifera, Pettauga rupestris, Pleurochaete squarrosa, Poa perniconcina, Potentilla argentea agg., Potentilla tabernaemontani, Sedum album, S. montanum, S. rupestre, Sempervivum arachnoideum

D: Cladonia pyxidata

4.5.4 Typifications


Corynephoretalia canescentis KLIKA 1934*: 14: ‘Corynephorion’ KLIKA 1934*: 15 (= Corynephorion canescentis KLIKA 1931a*) [lectotypus (Art. 20)]

Festucetalia vaginatae SOÓ 1957*: 51: Festucion vaginatae SOÓ 1929*: 342 [lectotypus (Art. 20)]


Corynephoretum canescentis KLIKA 1931a*: 295: Corynephoretum [= Weingaertnerietum] typicum TX. 1928*: tab. (= Corniculario aculeatae-Corynephoretum canescentis STEFFEN 1931* nom. invers. propos.) [lectotypus (Art. 20)]


Agrostietum vinealis KOBENDZA 1930* corr. KRAZTERT & DENGLER 1999*:

KOBENDZA (1930: tab. 8, rel. 6) [lectotypus DENGLER hoc loco]

Airetum praecocis KRAUSCH 1967*:

KRAUSCH (1967: tab. 8, rel. 2) [lectotypus DENGLER hoc loco] – This name thus becomes a later syntaxonomic synonym of the Carici arenariae-Airetum praecocis WESTHOFF et al. 1962* nom. invers. propos.

Airo-Festucetum SOMMER 1971*:

SOMMER (1971: tab. 10, rel. 2) [lectotypus DENGLER hoc loco]


Allio schoenoprasi-Caricetum praecocis TX. ex WALTHER 1977*:

WALTHER (1977: tab. 33, rel. 7) [lectotypus DENGLER hoc loco]

Armerio-Festucetum HÖHNESTER 1960*: 46 (= Armerio-Festucetum typicum HÖHNESTER 1960*): Armeria maritima subsp. elongata 3, Cladonia furcata 3, Hieracium pilosella 3, Agrostis capillaris 2, Festuca brevipila 2, Festuca ovina 2, Raconitrium canescens agg. 2, Achillea millefolium agg. 1, Artemisia campestris 1, Hypochaeris radicata 1, Lotus corniculatus 1, Luzula campestris 1, Anthoxanthum odoratum +, Cerasi tium arvens +, Cerastium semidecandrum +, Dianthus deltoides +, Hypnum jutlandicum +, Medicago lupulina +, Leontodon hispidus +, Plantago lanceolata +, Rumex acetosella +, Trifolium arvense +, Trifolium repens +; number of species 24, relevé area 10 m², flat, Bavaria: near Regensburg – relevé taken from ZIELONKOWSKY (1973: tab. 15, rel. 39) [neotypus DENGLER hoc loco] – It is not correct to include ‘R. KNAPP’ in the author-citation of this association, as is sometimes done in the literature. The Armerio-Festucetum R. KNAPP is ineffectively (KNAPP 1942, 1944: ICPN Art. 1) or invalidly published (KNAPP 1948: ICPN Art. 7). HÖHNESTER (1960), in the first valid description of the association, does not refer to R. KNAPP. His original diagnosis contains four synoptic lists of four subassociations. According to the recent classification, these units roughly correspond to four different associations (Diantho deltoidis-Armerietum elongatae KRAUSCH ex POTSCH 1962* nom. cons. propos., Sileno oitae-Festucetum brevipilae LIBBERT 1933* corr. KRAZTERT & DENGLER 1999* nom. invers. pro-
Caricetum arenariae REGEL 1928* [Art. 31]:

Carici arenariae-Airetum praecocis WESTHOFF et al.

Brometum tectorum BOJKO 1934*:

because name is proposed according to ICPN Art. 42,

PÖTSCH 1962* nom. cons. propos.

WALTHER (1977: tab. 34, rel. 8) [lectotypus DENGLER hoc loco]

KRAUSCH ex PÖTSCH 1962* nom. cons. propos.

of the Diantho deltoidis-Armerietum elongatae

name thus becomes a syntaxonomic synonym

because the grass

therefore be rejected

is absent from many stands of the association (cf. synoptic table in DENGLE 2001c). Of the two relevés given in the original diagnosis, the relevé selected here as type is also dominated by Festuca, whereas in the other one both species are present with the same cover-abundance value. Furthermore, the authorised change of the epithet from ‘maritimum’ to ‘verum’ without any decision from the CNC by WEEDE et al. (1996) will be the subject of a forthcoming application. The first epithet is based on Galium verum var. maritimum, a taxon that has not been used in most of the floras for many years. Moreover, the name of the association in its present form – as also pointed out by WEEDE et al. (l.c.) – raises the possibility of confusion with Galium maritimum, a Southwest European species (cf. EHRENDFORER & KRENDEL in TUSSIN et al. 1976: 22).

Festucetum polesicae REGEL 1928*:

Helichryso arenarii-Jasionetum litoralis LIBBERT 1940*:

ORNITHOPODO-CORYNEPHORETUM PASSARGE 1960*:

Poo compressae-Saxifragetum tridactylitae GÉHU 1961*:

GÉHU (1961: tab. 25, rel. 2) [lectotypus DENGLE hoc loco]

Spergulo-Corynephoretum (TX. 1928*) PASSARGE 1960* (basionym: Weingaertnerietum TX. 1928*, non BR.-BL. 1915* nom. illeg. [Art. 32a, 32b]):

TUXEN (1928: rel. 4) [lectotypus DENGLE hoc loco] – This name thus becomes a later syntaxonomic synonym of the Spergulo-corynephoretum canescens STEFFEN 1931* nom. cons. propos.

Sileno conicae-Cerastietum semidecandri KORNECK 1974*:

KORNECK (1974: tab. 33, rel. 1) [lectotypus DENGLE hoc loco]
Sileno otitae-Koelerietum gracilis KORNECK 1974*:
KORNECK (1974: tab. 93, rel. 4) [lectotypus DENGLER hoc loco] – This name thus becomes a later syntaxonomic synonym of the Sileno otiteae-Festucetum brevипilae LIBBERT 1933* corr. KRAZERT & DENGLER 1999* nom. invers. propos.

Thymo pulegioidis-Festucetum ovinae OBERD. 1957*:
GÖRS (1968: tab. 26, rel. 8) [neotypus DENGLER hoc loco] – The reference to ‘BARTSCH 40’ (which means: BARTSCH & BARTSCH 1940) by OBERDORFER (1957: 250) is irrelevant to the nomenclature. The relevés listed there belong to the same association, but BARTSCH & BARTSCH (1940: 42) expressly assign them to the Festuco ovinae-Thymetum angustifolii TX. 1937*. The synoptic table of OBERDORFER (l.c.) thus represents the valid publication of a new association. However, the author also states in brackets that his data on Festuca ovina partly also include F. capillata (= F. filiformis). According to LANGE (1998: 396), F. filiformis is considerably rarer than F. ovina in the original areas of the relevés (central and southern part of the upper Rhine valley and deeper locations of the Black Forest), and so the addition of the species-epithet appears to be justified, especially as the author refers to BARTSCH & BARTSCH (1940) whose relevés contain only F. ovina. In her identical addition of the epithet, GÖRS (1968) also mentions OBERDORFER as co-originator. The publication of BARTSCH & BARTSCH (1940) contains single relevés, but the accompanying species with lowest presence are only listed and are not placed in the relevés. It thus seems more sensible to designate the neotype from the relevés of GÖRS (1968), and also because in that work the identity of the Festuca- and Thymus-taxa, that are essential for building the name of the syntaxon, is beyond doubt. The study area of GÖRS (1968), the ‘Schwenninger Moos’, is on the edge of the Black Forest and so this typification is sufficient for ICPN Recomm. 21A.

Tortulo ruraliformis-Galietum maritimi HOCQUETTE 1927*:
HOCQUETTE (1927: tab. 5, rel. 10) [lectotypus DENGLER hoc loco]

Vulprietum myuri PHILIPPI 1973*:
PHILIPPI (1973: tab. 5, rel. 1) [lectotypus DENGLER hoc loco]

4.6 Festuco-Brometea Br.-Bl. & Tx. ex KLIKA & HADAČ 1944

4.6.1 General concept

The traditional syntaxonomic concept of the class is based on geographical-chorological criteria. In general the syntaxon is divided into two orders: the subatlantic Brometalia erecti W.KOCH 1926*, non BR.-BL. 1936* and the subcontinental-continentally distributed Festucetalia valesiacae Br.-Bl. & Tx. ex BR.-BL. 1950* (e.g. OBERDORFER & KORNECK 1978; POTT 1995; SCHUBERT et al. 2001; RENNwald 2002). In his synthesising editing of the class throughout its entire range, ROYER (1991) accepts even more geographically characterised orders. This schematic procedure in the classification causes various problems: on the one hand it attempts to differentiate several mesophytic basiphilous grasslands at the order level because of minor differences in floristic composition. On the other hand it prevents a reasonable syntaxonomic classification of species-poor basiphilous grassland types from the northern margin of their geographical distribution range (see section 4.6.2). For this reason, a different concept is preferred here, which is substantiated in detail and supported by synthetic tables from large parts of Europe in DENGLER (in prep.). As preferred by KRAUSCH (1961), KORNECK (1974), MUCINA & KOLBEC (1993b) and DENGLER (1994: 252, 2003: 199), all mesophytic syntaxa of the class are combined into one order of mesophytic basiphilous grasslands (Brachypodietalia pinnati KORNECK 1974* = Brometalia erecti W.KOCH 1926*, non BR.-BL. 1936* p. p. nom. amb. propos. [typo incl.]). This order is very well characterised by a number of character species. Among others, the alliances Meso-Bromion erecti OBERD. 1949* (= Bromion eretic W.KOCH 1926*) and Cirsiow-Brachypodion pinnati HADAČ & KLIKA in KLIKA & HADAČ 1944b* belong to this order. Because of the stronger isolation of the stands, the floristic differentiation of the xerophytic syntaxa is more obvious, and so at least three orders can be recognised west of the former Soviet Union: Xero-Brometalia erecti DENGLER 1994* nom. inval. [Art. 8, 12 Abs. 2] (subatlantic xerophytic grasslands), Festucetalia valesiacae Br.-Bl. & Tx. ex BR.-Bl. 1950* (continental xerophytic grasslands and East European steppes), Stipo pulcherrimae-Festucetalia pallentis POP 1968* (praepalpine-circumpannonian xerophytic grasslands on rock outcrops rich in Festuca pallens).
4.6.2 Filipendulo vulgaris-Helictotrichion
pratensis DENGLER & LÖBEL
all. nov. hoc loco

Mesophytic basiphilous grasslands in Northern Central Europe, Britain and Scandinavia undoubtedly belong to the class Festuco-Brometea. Although occurring at the northern margin of its geographical distribution range, they still contain several of its character species. However, in recent decades the detailed classification of these communities has given rise to some controversy (e.g. BRAUN-BLANQUET 1963; WILLEMS 1982; WESTHOFF et al. 1983; KARHULEC et al. 1986; ROYER 1991; DIERSSEN 1996; see summary in LÖBEL 2002: 95ff.). Classification problems are caused by the fact that species characterising the two ‘classical’, mainly geographically-defined orders Brometalia erecti W.KOCH 1926* and Festucetalia valesiaca BR.-BL. & TX. ex BR.-BL. 1950* and their alliances are largely absent. By establishing an order of mesophytic basiphilous grasslands (Brachypodietalia pinnati KORNECK 1974*, see 4.6.3), most classification problems can be solved. Many character species (e.g. Pimpinella saxifraga agg., Leontodon hispidus subsp. hispidus, Cirsium acaule, Carex caryophyllaea) and differential species (e.g. Galium verum, Linum catharticum, Briza media) of such an order are common in the North and North Central European communities. As DENGLER (2003: 200) has shown in a synoptic table, it is possible to separate three syntaxonomic units within this order: A southwestern unit including the alliance Bromion erecti W.KOCH 1926*, a south-eastern unit represented by the alliances Cirsio-Brachypodion pinnati HADAC & KLIKA in KLIKA & HADAC 1944b* and Agrostio vinealis-Avenulion schelliannae ROYER 1991*, and a northern one. Whereas the first two units are well defined by their own character species, the northern one contains only a few character species of its own. But there are several differential species, mainly mesophilous or slightly acidophilous graminoids and mosses (e.g. Luzula campestris, Festuca rubra agg., Dicranum scoparium). Applying the central taxon concept (compare DENGLER & BERG 2001; DENGLER 2003: 103 ff.), it is possible to distinguish these communities as a distinct northern syntaxonomic unit. Its potential synareal is shown in DENGLER (2003: 223, fig. 29). Other authors, especially WILLEMS (1982) and DIERSSEN (1996: 639), have previously pointed out the distinctness of these North-European communities.

As these three syntaxonomic units partly comprise more than one alliance, they will be described as suborders (DENGLER in prep.). Some weak character species and several geographical differential species even allow a subdivision to be made of the central suborder (‘Homalothecio lutescentis-Helictotrichenatia pratensis’) into two alliances, one with a western distribution, occurring in Northern France and the British Isles (= British Isles subgroup of the Meso-Bromion sensu WILLEMS 1982*), and one with more easterly in distribution. The latter is described here (Filipendulo-Helictotrichion). Its distribution range comprises the lowlands of Northern Germany, Denmark, Southern Sweden and probably also the lowlands of Poland and the Baltic. Within the suborder the differential taxa mentioned below separate the eastern alliance from the western one. According to our understanding, the Filipendulo-Helictotrichion includes the Solidagin-Helictotrichetum pratensis WILLEMS et al. 1981* representing the central association (especially Denmark, Schleswig-Holstein, Mecklenburg-Vorpommern), the Fragario viridis-Helictotrichetum pratensis HALLBERG 1971* (Southern Swedish mainland), the Veronica spicatae-Avenetum KRAHULEC et al. 1986* nom. inval. (Alvar on Öland). Additional associations may occur on Öland (see LÖBEL 2002), Gotland and in the Baltic countries.

Type: Fragario viridis-Helictotrichetum pratensis HALLBERG 1971*: 73 [holotypos]
Syn.: Bromion erecti W.KOCH 1926* sensu auct. min. p. [typo excl.]
Bromion erecti BR.-BL. 1936* p. p. [Art. 8, 31]
Meso-Bromion OBERD. 1949* sensu auct. min. p. [typo excl.]
Helianthemo-Globularion BR.-BL. 1963* p. p. [Art. 38]
Gentiano amarellae-Avenulion pratensis ROYER 1991* p. p. [Art. 3b]
Incl.: Avenulo-Seslerion uliginosae ['uliginosae'] ROYER 1991*
S. Scand. subgroup [Meso-Bromion] sensu WILLEMS 1982*
C: Alchemilla glaucescens, Helictotrichon pratense
D: Arabis hirsuta agg., Artemisia campestris

Note: The Helianthemo-Globularion B R.-BL.
C: Alchemilla glaucescens, Helictotrichon pratense
D: Arabis hirsuta

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4.6.3 Typifications

Brachypodietalia pinnati KORNECK 1974*: 123:
Cirsio-Brachypodion pinnati HADAČ & KLIKA in KLIKA & HADAČ 1944b* [lectotypus DENGLER hoc loco] – The order is here typified in a way that will exclude name confusion in the future even if a classification of the class is used that is different from the one proposed in DENGLER (in BERG et al. 2003, in prep.). With the Cirsio-Brachypodion as type, the name ‘Brachypodietalia pinnati’ can only be used as an order of mesophytic basiphilous grasslands but not in the traditional concept in which the class is divided into a western and an eastern order.

Brometalia Br.-Bl. 1936*: 169 nom. illeg. [Art. 32a]:
Festucion valesiacae KLIKA 1931b*; 376 [lectotypus DENGLER hoc loco] – BRAUN-BLANQUET (1936) has classified the two alliances Festucion valesiacae und Bromion erecti in this order. In his paper, he only published a bibliographic reference to the original diagnosis of the Festucion valesiacae KLIKA 1931b*, and did not validate the Bromion erecti by subordinating a validly described association or through a bibliographic reference to such an association. Only the Festucion valesiacae can thus be used as lectotype. Long before this, KOCH (1926: 20) had validly published an order with the same name (Brometalia erecti W.KOCH 1926*), with the holotype Bromion erecti W.KOCH 1926* as the only alliance. The holotype of the alliance is the Meso-Brometum erecti W.KOCH 1926* because it is the only association explicitly classified within the Bromion and documented by relevés. In the decades that followed, the name Brometalia erecti (mostly with the author reference ‘BR.-BL. 1936’) was used by the majority of phytosociologists in the sense of the two alliances Meso-Brometum erecti OBERD. 1949* (= Bromion erecti W.KOCH 1926*) and Xero-Bromion erecti (BR.-BL. & MOOR 1938) MORAVEC in HOLUB et al. 1967* (e.g. OBERDORFER & KORNECK 1978; POTT 1995; SCHUBERT et al. 2001), but in the light of the arguments given above this was not actually correct. After the transfer of the Meso-Bromion into his mesophytic order Brachypodietalia pinnati, KORNECK (1974) used the name ‘Brometalia erecti BR.-Bl. 1936’ for the rest of the order, which then contained only the Xero-Bromion. This accords neither with the type location in KOCH (1926) nor with BRAUN-BLANQUET (1936). We therefore propose to reject the name ‘Brometalia erecti’ with both author citations as a nomen dubium.

Aveno pratensis-Viscarietum vulgaris OBERD. 1949*:
OBERDORFER (1949: tab. 6, rel. 2) [neotypus DENGLER hoc loco] – This name thus becomes a syntaxonomic synonym of the Gentianoo-Koelerietum R.KNAPP ex BORKMANN 1960* nom. cons. propos. Due to its variable use in the literature, which often excludes its type, we propose to reject the name Aveno-Viscarietum as a nomen ambiguum.

Cirsio-Trifolietum montani WOLLERT 1964*:
WOLLERT (1964, tab. 8, rel. 19 = serial no. 16) [lectotypus DENGLER & WOLLERT hoc loco] – DENGLER (in RENNWALD 2002: 201, 334) suggested using this association name for the floristically impoverished semi-dry grasslands in Northern Germany. Revision of the relevés included in the original diagnosis by WOLLERT (1964) has shown that they do indeed belong partly to the central association of the alliance Filipendulo vulgaris-Helictotrichion pretensis (see 4.6.2), but partly also to the Adonido vernalis-Brachypodietum pinnati (LIBBERT 1933*) KRAUSCH 1961* (Cirsio-Brachypodion pinnati...
Because of this it would be misleading to apply the name of Wollert (1964) to the association belonging to the northern alliance. We therefore designate here a lectotype which makes the name a later syntaxonomic synonym of the Adonido-Brachypodietum.

Filipendulo-Helictotrichetum pratensis Mahn 1965*:

Mahn (1965: tab. 37, rel. 1) [lectotypus Dengler hoc loc] – This name thus becomes a later syntaxonomic synonym of the Scorzonero hispanicae-Brachypodietum pinnati Gauckler 1957* nom. invers. propos.

4.7 Molinio-Arrhenatheretea TX. 1937

4.7.1 General concept

According to Jansen & Päzolt (in Berg et al. 2003), the class can be divided into three superior syntaxa of equal rank in Central Europe: the Arrhenatheretae elatioris TX. 1931*, the Deschampsietalia cespitosaë Horváti 1958* (= Potentillo-Polygonetalia avicularis TX. 1947* nom. amb. propos.) and the Molinietalia caeruleae W.Koch 1926*. However, a statistical comparison with all other syntaxa from open landscapes (Berg et al. 2001b) showed that the first two orders are (extensively) lacking character species since nearly all the taxa mentioned as such in the literature do not fulfil the character species criterion. These two orders can therefore only be retained with our method when they are judged to be the central syntaxa of two subclasses. The floristic and ecological break between the Arrhenatheretalia growing on sites far from the water table on the one hand and the Deschampsietalia and the Molinietalia of hydromorphic sites on the other hand supports this classification. Defoucault (1989) had earlier proposed the subdivision of the class into two subclasses, but they were invalidly published by him. The subclass Arrhenatheretae elatioris Defoucault 1989* largely resembles our concept, though he includes two further orders not occurring in Central Europe. This subclass is opposed to the Agrostienea Defoucault 1989* in which he unites temporarily flooded meadows. The ‘real’ wet meadows (order Molinietalia) are excluded by him from the emended class. As a consequence of all this, new names for both subclasses have to be published here.

4.7.2 Arrhenatherenea (Br.-Bl. 1950*)

F.Jansen & Päzolt stat. nov. hoc loco

In Central Europe the subclass contains only the order Arrhenatheretalia elatioris TX. 1931*. A Europe-wide table comparison should establish whether the two other orders from Defoucault (1989) also belong here.


Type: Arrhenatheretalia elatioris ['Pawlowski 1928'] Br.—Bl. 1949*: 293 ex 1950*: 357 (= Arrhenatheretalia Tx. 1931*) [holotypus]

Syn.: Arrhenatherenea Defoucault 1989* [Art. 5]

Incl.: Arrhenatheretalia Br.—Bl. 1947* [Art. 8]

C: Bellis perennis, Cardaminopsis arenosa subsp. arenosa, Trifolium dubium

D: Agrostis capillaris, Bromus hordeaceus, Dactylis glomerata, Hypochaeris radicata, Lolium perenne, Medicago lupulina Rumex acetosella, Veronica chaamaedrys

Note: See the comments in section 2.5.5.

4.7.3 Molinio-Juncenea (Br.—Bl. 1950*)

Päzolt & F.Jansen stat. nov. hoc loco

As a basionym for the subclass, the older class name from Braun-Blanquet (1949) seems to be more fitting than Agrostietea stoloniferae T.Müller & Görs in Görs 1968*. The Molinio-Juncenea contain in Central Europe the orders Deschampsietalia cespitosaë Horváti 1958* (= Potentillo-Polygonetalia avicularis TX. 1947* nom. amb. propos. p. p. [typo incl.]; alternating-wet valley meadows) and Molinietalia caeruleae W.Koch 1926* (wet meadows with Purple Moor-grass and/or Marsh-marigold).


Type: Molinietalia caeruleae W.Koch 1926*: 20 [holotypus]

Syn.: Agrostienea stoloniferae Defoucault 1989* [Art. 5, 8]

Sphagno-Caricetea fuscae (BR.-BL. & VLIEGER in VLIEGER 1937*) DUVIDGEAUX 1949*: 706 [lectotypus F. JANSEN & DENGLER hoc loco]

Calthion palustris TX. 1937*: 89:
Cirsio oleracei-Angelicetum sylvestris TX. 1937*: 89 [lectotypus PÁZOLT hoc loco]

4.7.4 Typifications

Lathyrus-Vicietea craccae PASSARGE 1975*: 614:
Galio-Achilleetalia millefoliae PASSARGE 1975*: 615 (= Arrhenatheretalia TX. 1931*) [lectotypus F. JANSEN & DENGLER hoc loco]

Molinio-Arrhenatheretea TX. 1937*: 73:
Arrhenatheretalia ['PAWLOWSKI 1926'] TX. 1937*: 101 (= Arrhenatheretalia TX. 1931*) [lectotypus F. JANSEN, PÁZOLT & DENGLER hoc loco]

Sphagno-Cariceta fuscae (BR.-BL. & VLIEGER in VLIEGER 1937*) DUVIDGEAUX 1949*: 91 (basisynon: Caricetalia uliginosae BR.-BL. & VLIEGER in VLIEGER 1937*: 345):
Molinietalia caeruleae W.KOCH 1926*: 20 [lectotypus KOSKA, PÁZOLT & TIMMERMANN hoc loco]

Arrhenatheretalia elatoris BR.-BL. 1949*: 293 ex 1950*: 357:
Triseto-Polygonion bistortae BR.-BL. 1949*: 294 ex 1950*: 357 [lectotypus F. JANSEN & DENGLER hoc loco] – According to ICPN Art. 20, the Arrhenatherion BR.-BL. 1925 should be selected as lectotype. However this is not possible because the source for this author citation is not given in BRAUN-BLANQUET (1950). On the other hand, it is not a valid new publication of the alliance because there is no clear bibliographic reference to relevés for its only association.

Galio-Achilleetalia millefoliae PASSARGE 1975*: 615:
Anthrisko-Heracleion PASSARGE 1975*: 615 [lectotypus F. JANSEN & DENGLER hoc loco]

Molinio-Caricetalia fuscae DUVIDGEAUX 1949*: 91:
Molinio-Juncion acutiflori DUVIDGEAUX 1949*: 102 [lectotypus KOSKA, PÁZOLT & TIMMERMANN hoc loco]

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sen & Dengler hoc loco – This name thus becomes a later taxonomic synonym of the Arrhenatheretum elatioris Br. [-BL.] 1915*.

Chrysanthemo-Rumicetum thyrsiflori Walther 1977*; 87:

Redecker (2001: tab. 4,10, rel. 2) [neotypus F. Jansen & Dengler hoc loco] – This name thus becomes a later taxonomic synonym of the Arrhenatheretum elatioris Br. [-BL.] 1915*.

Deschampsio cespitosae-Heracleetum sibirici Libbert 1932*:

Libbert (1932: tab. 15, rel. 7) [lectotypus Pázolt hoc loco]

Festuco-Crepidotum capillaris Hölbusch & Kienast in Kienast 1978*:

Kienast (1978: tab. 38, rel. 449 = serial no. 27) [lectotypus F. Jansen hoc loco]

Lolietum perennis Felfoldy 1942*:

Felfoldy (1942: tab. 4, rel. 1) [lectotypus F. Jansen hoc loco] – The Lolietum perennis Felfoldy 1942* is not only validly published, but it also has a legitimate name because the older homonym from Gams (1927: 313) is not valid according to ICPN Art. 7. This is because there is no specification of quantity for most of the species in the two published relevés. Through typification, the above name becomes a later syntaxonomic synonym of the Lolio perennis-Matricarietum suaveolentis Tx. 1937*: 23:

Lolium perenne 2, Poa annua 2, Taraxacum sect. Ruderalia 2, Trifolium repens 2, Arenaria serpyllifolia 1, Capsella bursa-pastoris 1, Convolvulus arvensis 1, Crepis capillaris 1, Leontodon autumnalis +, Matricaria discoidea 1, Medicago lupulina 1, Plantago major 1, Poa compressa 1, Poa trivialis 1, Conyza canadensis +, Daucus carota +, Equisetum arvense +, Lepidium ruderale +, Polygonum aviculare agg. +, Silene latifolia subsp. alba +, Sisymbrium officinale +, Sonchus oleraceus +, Tripleurospermum perforatum +; number of species 23 – relevé taken from Beger (1932: 512, rel. 3) [lectotypus F. Jansen & Dengler hoc loco] – The name thus becomes a later nomenclatural synonym of the Plantagini majoris-Lolietum perennis Beger 1932* nom. invers. prop. (see below).

Potentillo anserinae-Festucetum arundinaceae Nordhagen 1940*: 102 nom. invers. prop. (original form: Festuco arundinaceae-Potentillitum anserinae):

Kirsch (1974: tab. 8, rel. 7) [neotypus F. Jansen hoc loco] – The inversion of the name is proposed according ICPN Art. 42, because Festuca arundinacea belongs to a higher stratum than Potentilla anserina and is more frequent (e.g. 98% vs. 77% in Jansen & Pázolt 2001). The same holds true for the synoptic table of the Lolio perennis-Plantaginetum majoris Beger 1932* nom. invers. prop. (see below).

Plantagini majoris-Lolietum perennis Beger 1932* nom. invers. prop. (original form: Lolium perennis-Plantaginetum majoris):

Beger (1932: 512, rel. 3) [lectotypus F. Jansen & Dengler hoc loco] – The inversion of the name is proposed according ICPN Art. 42, because Lolium perenne dominates in three out of six relevés in the protologue over Plantago major whilst the two species have the same cover-abundance-value in the three others. The proposed change of the name does make even more sense when including not only perennial communities from trampled soils (as in the protologue) but also highly intensively used grasslands with a similar species composition as suggested by Jansen & Pázolt (2001, in Berg et al. 2003).
4.8 Trifolio-Geranietea sanguinei T.MÜLLER 1962

4.8.1 General concept

Helio-thermophytic fringe and tall-herb communities growing on nitrate-poor sites are mostly classified in one of the following ways in the phytosociological literature: Some authors combine all these communities in one class, Trifolio-Geranietea sanguinei T.MÜLLER 1962*, which they subdivide into an acidophytic order Melampyro pratensis-Holcetalia mollis PASSARGE 1979* and a basiphytic order Origanetalia vulgaris T.MÜLLER 1962* (e.g. MUCINA & KOLBEK 1993a; POTT 1995; RENNwald 2002). Other authors separate the acidophytic units at the class level (Melampyro pratensis-Holcetalia mollis PASSARGE ex KLAUCK 1992*) whereby both classes become monotypic (e.g. SCHAMINÉE et al. 1996; SCHUBERT et al. 2001; PASSARGE 2002). A ‘middle’ approach is followed here, as described in detail in DENGLER (2003: 190) and DENGLER (in BERG et al. 2003). On the one hand, numerous common species such as – with decreasing constancy – Galium mollugo agg., Hypericum perforatum, Veronica cha-maedrys, Plagiomnium affine, Scleropodium purum and Trifolium medium could be considered as character species of a broadly delimited class Trifolio-Geranietea. On the other hand, at least the basiphytic part of the class consists of two orders, each comprising several alliances (cf. sections 4.8.3 and 4.8.4) if viewed from a European perspective. In this light the proper solution seems to treat both the acidophytic and the basiphytic fringe communities as subclasses (cf. sections 4.8.2 and 4.8.3).

4.8.2 Melampyro pratensis-Holcetalia mollis PASSARGE ex DENGLER subcl. nov. hoc loco

In the present state of knowledge, this acidophytic subclass only comprises the type suborder, at least when following our classificatory principles.

Type: Melampyro pratensis-Holcetalia mollis PASSARGE 1979*: 478 [holotypus]

Incl.: Melampyro-Holcetea mollis PASSARGE 1979* [Art. 3b]
Melampyro pratensis-Holcetea mollis PASSARGE ex KLAUCK 1992* [Art. 8]


C: Centaurea nigra subsp. nigra, Conopodium majus, Hieracium laevigatum, Hieracium sabaudum, Holcus mollis, Hypericum pulchrum, Lathyrus linifolius, Lonicera periclymenum, Melampyrum pratense, Pteridium aquilinum, Pulmonaria longifolia, Teucrium scorodonia, Viola riviniana

D: Agrostis capillaris, Anthoxanthum odoratum, Deschampsia flexuosa, Poa nemoralis, Scleropodium purum, Veronica officinalis

Note: As the class Melampyro-Holcetea has not been validly published until now, an author citation with brackets according to ICPN Art. 51 is out of the question: PASSARGE (1979: 478) only erected the class provisionally. The validation by KLAUCK (1992) was also not successful, despite the opinion of MUCINA (1997: 141), since the only order Teucrio scorodoniae-Melampyretalia pratensis KLAUCK 1992* is not validly published according to ICPN Art. 8. KLAUCK (1992) included the single alliance Melampyrintum pratensis, but this was not published validly in the cited paper (PASSARGE 1967) according to ICPN Art. 3b, nor was it validated by KLAUCK himself (Art. 5 ICPN).

4.8.3 Trifolio-Geranieta sanguinei (T.MÜLLER 1962) DENGLER stat. nov. hoc loco

This subclass comprises heliophytic fringe and tall-herb communities growing on neutral and basic sites. In the present state of knowledge, two orders can be distinguished: the Origanelata vulgaris T.MÜLLER 1962* in the emended delimitation by DENGLER (in BERG et al. 2003) (mesophytic fringe communities) and the Antherico ramosi-Geranietalia sanguinei (see...
section 4.8.4; xerophytic fringe communities from basic and subneutral sites).


Type: Origanetalia vulgaris T.MÜLLER 1962*: 98 [holotypus (Art. 27)]

C: Agrimonia eupatoria, Astragalus cicer, Astragalus glycyphyllos, Calamintha nepeta agg., Campanula persicifolia, Euchynchronium hians, Inula conyzae, Laserpitium siler, Lathyrus sylvestris, Lithospermum purpureoaculeum, Melittis melissophyllum, Origanum vulgare, Tanacetum corymbosum, Trifolium rubens, Veronica teucrium, Vicia tenuifolia, Viola hirta

D: Brachypodium pinnatum agg., Euphorbia cyparissias, Galium verum, Lotus corniculatus, Poa angustifolia

4.8.4 Antherico ramosi-Geranietalia sanguinei
JULVE ex DENGLER ord. nov. hoc loco

JULVE (1993: 81) was the first to raise the status of the two alliances included by MÜLLER (1962) in the Origanetalia vulgaris to orders. He named his mesophytic order, which in terms of its content corresponds to the alliance Trifolion medii T.MÜLLER 1962*, as Agrimnio eupatoriae-Trifolietalia medii, and his xerophytic order corresponding to the alliance Geranion sanguinei TX. in T.MÜLLER 1962* as Antherico ramosi-Geranietalia sanguinei. Neither unit was validly published as their author did not designate types (ICPN Art. 5) and did not retain the original name for one of his orders as is required by ICPN Art. 24a. Nevertheless, the concept of subdivisions proposed by JULVE (1993) could be confirmed by means of a synoptic table with relevés from large parts of Europe (DENGLER in prep.). JULVE’s name for the xerophytic order is thus validated here. According to present knowledge, this comprises four alliances which are more or less vicariant: Galio littoralis-Geranion sanguinei GÉHU & GÉHU-FRANCK in DE FOUCAUT et al. 1983* (cold-temperate seacoasts and Southern Scandinavia), Geranion sanguinei TX. in T.MÜLLER 1962* (Central Europe), Dictamno-Ferulagion galbaniferae (VAN GILS et al. 1975*) DE FOUCAUT et al. 1983* nom. inval. [Art. 5] (South-East Europe) und Origanion virentis RIVAS-MARTÍNEZ & O. DE BOLÓS in RIVAS-MARTÍNEZ et al. 1984* (Iberian Peninsula). As a result of the typification in section 4.8.5, the mesophytic order must retain the name Origanetalia vulgaris T.MÜLLER 1962*. In addition to the Trifolion medii T.MÜLLER 1962*, the Knaution dipsacifoliae JULVE 1993* nom. inval. [Art. 5, 8] also belongs there.

Type: Geranion sanguinei TX. in T.MÜLLER 1962* [holotypus]


Origanetalia vulgaris T.MÜLLER 1962* p. p. [typo excl.]

Xero-Brometalia DOING 1963* p. p. [Art. 8]

Antherico ramosi-Geranietalia sanguinei JULVE 1993* [Art. 5, 8]

Incl.: Galio littoralis-Geranion sanguinei GÉHU & GÉHU-FRANCK in DE FOUCAUT et al. 1983*

C: Campanula rapunculoides, Dictamnus albus, Geranium sanguineum, Melittis melissophyllum, Peucedanum cervaria, P. oreo-selinum, Polygonatum odoratum, Tanacetum corymbosum, Thalictrum minus, Trifolium alpestre, T. rubens, Veronica teucrium, Vicia tenuifolia, Vincetoxicum hirundinaria, Viola hirta

D: Bromus erectus, Bupleurum falcatum, Medicago falcata, Salvia pratensis, Sanguisorba minor, Stachys recta, Teucrium chamaedrys

4.8.5 Typifications

Origanetalia vulgaris T.MÜLLER 1962*: 98:

Trifolion medii T.MÜLLER 1962*: 121 [lectotypus DENGLER hoc loco]

Geranion sanguinei TX. in T.MÜLLER 1962*: 98:

Geranio-Peucedanetum cervariae T.MÜLLER 1962*: 110 [lectotypus DENGLER hoc loco]

Trifolion medii T.MÜLLER 1962*: 121:

Trifolio medii-Agrimonietum eupatoriae T.MÜLLER 1962*: 123 [lectotypus DENGLER hoc loco]


MÜLLER (1966: tab. 18, rel. 27) [neotypus DENGLER hoc loco] – The inversion of the name is proposed following ICPN Art. 42, since Trifolium medium dominates the majority of the stands of the association in the region of the original diagnosis (Southern Germany; e.g. MÜLLER [1966: tab. 18]). Furthermore, Agrimonia eupatoria is rare or even absent in the North German stands of the association (cf. DENGLER in BERG 2001b: 166, DENGLER et al. 2001 and
unpublished observations from Lower Saxony and Schleswig-Holstein).

Geranio-Trifolietum alpestris T. MÜLLER 1962*:
MÜLLER (1966: tab. 18, rel. 15) [neotypus DENGLER hoc loco]

Lathyro-Melampyretum pratensis PASSARGE 1967*:
PASSARGE (1979: tab. 1, rel. 1) [neotypus DENGLER hoc loco]

Pteridietum aquilini JOUANNE & CHOUARD 1929*:
Pteridium aquilinum 4, Holcus mollis 2b, Brachythecium rutabulum 2a, Dicranum scoparium 2m, Lophocolea bidentata 2m, Anthoxanthum odoratum 1, Rubus corylifolius agg. (H) 1, Rubus idaeus +, Vaccinium myrtillus +, Betula pendula (H) r; number of species 11, relevé area 5 m², cover herb layer 80%, cover cryptogam layer 10%, fringe within a forest, pH (H₂O) = 3.6, Lower Saxony: administrative district Lüchow-Dannenberg, MTB 2832/1, RW 4435.004 km, HW 5891.800 km, 04.06.02 – relevé taken from EISENBERG (2003: tab. I, rel. 15 = serial no. 16) [neotypus EISENBERG & DENGLER hoc loco]

Trifolio-Melampyretum nemorosi DIERSCHKE 1973*:
DIERSCHKE (1973: tab. 1, rel. 19) [lectotypus DENGLER hoc loco]

4.9 Artemisietea vulgaris LOHMEYER et al. ex VON ROCHOW 1951

4.9.1 General concept

In the recent phytosociological literature, ruderal plant communities dominated by biennial or perennial plants are usually subdivided into 3 or 4 classes: Agropyretea intermediorepens OBERD. et al. ex T. MÜLLER & GÖRS 1969*, Artemisietea vulgaris LOHMEYER et al. ex VON ROCHOW 1951*, Epilobietea angustifolii TX. & PREISING ex VON ROCHOW 1951* and Galio-Urticetea PASSARGE ex KOPECYK 1969*. A class Agropyretea intermediorepens of semi-ruderal Couch-swards can not be retained using a method based on character species, since the most of the character species that are mentioned for example by MÜLLER (1983b), such as Convolvulus arvensis, Poa angustifolia, P. compressa, Cerastium arvense and Equisetum arvense, are equally frequent or even more frequent in other classes (cf. the synoptic table of all the classes in BERG et al. 2001b). Only the few character species mentioned in section 4.9.3 would be possibilities, but they are so rare that none of them would occur in the majority of the stands of such a class. On the other hand there are numerous character and differential species of the Artemisietea vulgaris which frequently form part of the semi-ruderal Couch-swards, even though they do not achieve high coverages there. They could therefore reasonably be treated as the central syntaxon of a broadly conceived ruderal class Artemisietea vulgaris (DENGLER 1997), a course which has been followed by many recent syntaxonomic overviews (e.g. MUCINA 1993c; POTT 1995; KLOTZ in SCHÜBERT et al. 2001; RENNWALD 2002; RIVAS-MARTÍNEZ 2002). When elaborating the ‘Plant communities of Mecklenburg-Vorpommern’, it proved to be advantageous, according to the classificatory principles of DENGLER & BERG (2002), to dissolve the class Galio-Urticetea which had at first been accepted. Instead, the communities usually included in it should be divided according to floristic and ecological criteria into the classes Phragmito-Magno-Caricetea KLIKA in KLIKA & V.NOVÁK 1941* und Artemisietea vulgaris. Finally, the class Epilobietea angustifolii, usually comprising both herbaceous and shrub communities from clearings, loses its justification when classifying vegetation within structural types as we have done. One part of this shrub and pioneer-forest community belongs to the class Rhamno-Prunetea RIVAS GODAY & BORJA CARBONELL ex TX. 1962*, and the other possibly to a separate class of ruderal woody plant communities. Due to the high constancy of different Artemisietea-species, the herbaceous communities from clearings can reasonably be added to that class as well (cf. DENGLER 2003: 193, 195). According to these suggested emendations (cf. the tables in DENGLER 2001d), the Artemisietea vulgaris then comprise all ruderal and nitrophytic fringe communities dominated by biennials and perennials from sites with deep water tables. The four previous classes (or large parts of them) which are united here are floristically at least independent enough that they should be treated as subclasses, particularly as three of them each contain two orders: (a) Epilobietea angustifolii (TX. & PREISING ex VON ROCHOW 1951*) RIVAS GODAY &
BORJA CARBONELL 1961* (herbaceous communities from clearings) with the single order Atropetalia bellae-donnae TX. 1947*; (b) Lamio albi-Urticenea dioicae (see 4.9.2); (c) Agropyrenea intermedio-repentis (see 4.9.3) and (d) Artemisienea vulgaris (LOHMEYER et al. ex VON ROCHOW 1951*) RIVAS GODAY & BORJA CARBONELL 1961* (= Onopordetalia acanthii RIVAS-MARTÍNEZ et al. in RIVAS-MARTÍNEZ et al. 2002* nom. illeg. [Art. 29c]; perennial ruderal communities of dry sites) containing the two orders Onopordetalia acanthii BR.-BL. & TX. ex KLIKA & HADAČ 1944b* (temperate Europe) and Carthametalia lanati BRULLO in BRULLO & MARCENO 1985* (Mediterranean basin).

4.9.2 Lamio albi-Urticenea dioicae DENGELER & WOLLERT subcl. nov. hoc loco

The delimitation of this subclass partly corresponds to that of the former (sub-) class Galio-Urticenea/-etea. By contrast, tall-herb communities of moist to wet sites (Convolvuletalia sepium T X. 1950* nom. inval. [Art. 8]) have been excluded. Instead, the alliance Arction lappae TX. 1937*, which MÜLLER (1983a) subordinated to the subclass Artemisienea vulgaris, is included here on floristic grounds (cf. DENGELER 1997). The new subclass thus comprises two orders: the Galio-Alliarietalia petiolatae OBERD. in GÖRS & T.MÜLLER 1969*, which contain nitrophytic fringe communities from sites with intermediate soil moisture and which can be further subdivided into at least two alliances (Geo urbani-Alliario petiolatae LOHMEYER & OBERD. in GÖRS & T.MÜLLER 1969*, Aegopodion podagrariae TX. 1967*). As regards the second order Arctio lappae-Artemisietalia vulgaris DENGELER 2002* (= Artemisietaia vulgaris sensu MÜLLER 1983a*, non TX. 1947*)

6 In DENGELER (2002: 66) a detailed account is given of the reasons why none of the previous names can be used for this order. The new order name mentioned here is published there to replace the pseudonym Artemisietaia vulgaris TX. 1947*. Dr. W. WILLNER, Vienna, as member of the CNC (in litt.), supports the view that the argumentation in DENGELER (l.c.) is not correct. In his opinion, the Calystegion sepium is not validly published by TÜXEN (1947) according to ICPN Art. 3f, since which comprises perennial ruderal communities from sites with intermediate soil moisture, so far only the membership of the alliance Arctio lappae TX. 1937* is certain.

Type: Galio-Alliarietalia petiolatae OBERD. in GÖRS & T.MÜLLER 1969*: 154 [holotypus]

Syn.: Artemisietaia vulgaris sensu RIVAS-MARTÍNEZ et al. 1991*, non (LOHMEYER et al. ex VON ROCHOW 1951*) RIVAS GODAY & BORJA CARBONELL 1961* [Art. 24a]


Type: Calystegia sepium is absent from the listed relevés of the Petasito hybridi-Aegopodietum podagrariae, which is the holotype of the alliance. However, ICPN Art. 3f only requires that the name-giving taxon must be indicated in the original diagnosis but not that it must be present in the relevés of its type association. Moreover, the ICPN does not give a precise definition of what belongs to an original diagnosis. But in ICPN Art. 7, it is made clear that the relevés are not the original diagnosis itself but only form part of it. In this sense those relevés published in the original diagnosis of an alliance, but not included in a validly published association, as well as the verbal description must also be considered as part of the protologue. However, the relevé of the Convolvulo sepium-Cuscutetum europaeae TX. 1947* nom. inval. [Art. 3f] subordinated to the Calystegion includes Calystegia sepium, so that the alliance is validly published in our opinion. Furthermore, Dr. W. WILLNER (in litt.) supports the opinion that the Arctio lappae TX. 1937* must be considered as holotype of the order Artemisietaia vulgaris, since TÜXEN (1947: 176) would have given ‘unambiguous’ reference to TÜXEN (1937), where the Arctio lappae is validly published. We can not accept this opinion since the source citation on the page referred to is not placed in any relationship to the order Artemisietaia vulgaris or the Arctio lappae.

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Excl.: Convolvuletalia sepium T X. 1950* [Art. 8]

C: Aegopodium podagraria, Alliaria petiolata, Anthriscus sylvestris, Arctium lappa, Armoracia rusticana, Artemisia verlotiorum, Carduus crispus, Chaerophyllum aureum, Crucia taeipeps, Galium aparine, Gernum urbanum, Glechoma hederacea, Helianthemum tuberosum, Lamium album, Lamium maculatum, Leonurus cardiaca, Rumex obtusifolius, Galeopsis pubescens, Urtica dioica

D: Artemisia vulgaris (with Agropyrenea and Artemisienea), Elymus repens (with Agropyrenea and Artemisienea), Galeopsis tetraphylla (with Epilobienea), Heracleum sphondylium (excl. subsp. elegans), Poa trivialis

Note: The name Galio-Urticenea (PASSARGE ex KOPECKÝ 1969*) T.MÜLLER 1983 a* can not be used for this subclass because it would then have to be typified with one of the orders included in our system. This is not possible, however, since KOPECKÝ (1969: 250), according to ICPN Art. 8, did not publish the order Lamio albi-Chenopodietalia boni-henrici validly and therefore only one of the two other orders (Convolvuletalia sepium and Petasito-Chaerophylletalia respectively) are possible lectotypes. Both of them are validly published names because either unambiguous reference to validly published alliances is given or alliances are validly published anew by documenting subordinate associations with relevés. However, as we now understand them, these two orders do not belong to the class Artemisietea vulgaris but to the Phragmito-Magno-Caricetea KLIKA in KLIKA & V. NOVÁK 1941* (as in BERG et al. 2003) or to a separate class of tall-herb and fringe communities from hydromorphic sites (Filipendulo-Convolvuletea GÉHU & GÉHU-FRANCK 1987*). The name Alliario-Glechomenea herbaceae RIVAS-MARTÍNEZ & COSTA 1998* is not validly published, since these authors actually designate a type order (Glechometalia hedera-ceae Tx. & BRUN-HOOL 1975*) but fail to give a bibliographic reference to its protologue.

4.9.3 Agropyrenea intermedio-repentis (OBERD. et al. ex T.MÜLLER & GÖRS 1969) DENGLER & WOLLERT subcl. nov. hoc loco

This subclass comprises semi-ruderal communities from sites of medium to low soil moisture, mostly dominated by rhizomatous geophytes. In addition to the type order Agropyretalia intermedio-repentis OBERD. et al. ex T.MÜLLER & GÖRS 1969*, with the three alliances Convolvulo arvensis-Agropyron repentis GÖRS 1966*, Poion compressae (see 4.9.5) und Artemisio absinthii-Agropyron intermedii T.MÜLLER & GÖRS 1969*, we include as second order the newly described Rubo caesii-Calangrostietalia epigeci (see 4.9.4). As mentioned above, the Agropyrenea intermedio-repentis form the mainly negatively characterised central subclass of the Artemisietea vulgaris.


Type: Agropyretalia intermedio-repentis OBERD. et al. ex T.MÜLLER & GÖRS 1969*: 211 [holotypus (Art. 27a)]


Incl.: Agropyretea repentis OBERDORFER et al. 1967* [Art. 8]

C: Asparagus officinalis, Bromus inermis, Falcaria vulgaris, Rumex thyrsiflorus, Silene tatarica

D: Achillea millefolium agg. (with Artemisienea), Artemisia vulgaris (with Galio-Urticenea and Artemisienea), Centrodon purpureus (with Artemisienea), Convvolva arvensis (with Artemisienea), Elymus repens (with Galio-Urticenea and Artemisienea), Poa angustifolia (with Artemisienea)

4.9.4 Rubo caesii-Calangrostietalia epigeci DENGLER & WOLLERT ord. nov. hoc loco

In the original diagnosis of the class Agropyretea intermedio-repentis in MÜLLER & GÖRS (1969), ruderal swards with Calangrostis epigeci were not included. In later treatises, such as GUTTE & HILBIG (1975), BRANDES (1986), WOLLERT (1991), KLOTZ (in SCHÜBERT et al. 2001) or RENNWALD (2002), the stands in question, on account of their structural similarity, i.e. the dominance of a rhizomatous grass-species, are often included in the alliance Convvolvo-Agropyron GÖRS 1966* within this class, mostly as informal communi-
ties. As discussed in Dengler (1997), in addition to the ruderal community dominated by Wood Small-reed (Rubo caesii-Calamagrostetum epigeji Coste 1985*), there are two associations closely resembling this in terms of their species composition, structure and site conditions: the common Elymo repens-Rubetum caesii Dengler 1997* and the Peta-sitetum spurii Steffen 1931* nom. mut. propos. a rare and special community on the coast of the Baltic Sea and in stream valleys in regions with a (sub-)continental climate. Because of their deviating characteristics, these three associations were then united in a suballiance of their own within the Convolvulo-Agropyriion, named Rubo-Calamagrostienion epigeji Dengler 1997*. When revising the numerous Agropyrene-communities described from Central Europe (Dengler in prep.), it appeared to be appropriate to introduce further hierarchical levels to reflect better the similarity relationships between the individual associations, or to make them classifiable at all using the central syntaxon concept. In Dengler (2003: 109), the advantages of ‘graduated’ hierarchies over ‘flat’ ones from the point-of-view of information theory are pointed out, and are illustrated using the example of the Central European Agropyrene-communities (l.c.: 204). Four groups of associations could thus be worked out, which are treated here as alliances. One of these, the Rubo caesii-Calamagrostion epigeji raised to alliance level (see 4.9.5), differs so much from the three others that it should be separated from them within a new monotypic order. This classification scheme was outlined for the first time and confirmed in a synoptic table in Dengler (2001d), though without the alliance Artemisio absinthii-Agropyrion intermedii T.Müller & Görs 1969* which is distributed in warm-continental regions and is therefore absent from Mecklenburg-Vorpommern.

Type: Rubo caesii-Calamagrostion epigeji (Dengler 1997*) Dengler & Wollert hoc loco: 4.9.5 [holotypus]


C: Calamagrostis epigejos, Rubus caesius
D: Equisetum arvense, Galium mollugo agg.

4.9.5 Rubo caesii-Calamagrostion epigeji (Dengler 1997) Dengler & Wollert all. nov. hoc loco

For the reasons for the erection and composition of this alliance, see 4.9.4. All three associations included can be characterised as tall-growing, ruderal communities of dry to medium moist sites, dominated by rhizomatous geophytes.

Protologue: ‘Rubo-Calamagrostienion epigeji’ (Dengler 1997: 278)

Type: Saponario-Petasitetum spurii [‘Passarge ex’] Walther 1977*: 14 (= Peta-sitetum spurii Steffen 1931* nom. mut. propos.) [holotypus (Art. 27a)]

Syn.: Hyperico-Vicion angustifoliae Passarge 1975* p. min. p. [typo excl.]

C/D: [to be dropped because it is the sole alliance within the order]

4.9.6 Poion compressae T.Müller & Görs ex Dengler & Wollert all. nov. hoc loco

Müller & Görs (1969) had already realised the autonomy of the semi-ruderal swards of Poa compressa, which they therefore removed as an association group separate from the other communities of the Convolvulo-Agropyriion T.Müller & Görs 1969*. In this association group they included the Poo compressae-Tussilaginetum farfarae Tx. 1931* and the Poa compressa-Anthemis tinctoria-community (= Poo compressae-Anthemidetum tinctoriae T.Müller & Görs ex Brandes 1986*). Dengler (1997) was able to demonstrate by use of affinity calculations that these two associations do indeed differ considerably from all other Convolvulo-Agropyriion associations and are floristically even slightly more closely related to the alliance Daucus-Meliotion Görs ex Rostanski & Gutte 1971* (subclass Artemisienea). However, a revision of table material of the class Artemisietea vulgaris from the whole of Central Europe (Dengler in prep.) has revealed that the Poa compressa communities should best be treated as an alliance of their own, but within the Agropyretalia intermedio-repentis. This classification concept was adopted for the first time in Dengler (2001d). In addition to the two associations already mentioned by Müller & Görs (1969),
the Poetum humili-compressae B ORNKAMM 1961* nom. mut. propos. is included here as a central association.

Type: Poo compressae-Tussilaginetum farfarae TX. 1931*: 84 [holotypus]

Incl.: Anthemido-Poenion compressae PASSARGE 1989* p. p. [typo excl.]

‘Assoziationsgruppe mit Poa compressa’ [Convulvulo arvensis-Agropyron repentinis] sensu T.MÜLLER & GöRS 1969*

C: Poa compressa

D: Anthemis tinctoria (with Artemisio-Agro-pyrion intermedii), Artemisia vulgaris (with Convolvulo-Agropyrion repentis), Dactylis glomerata (with Convolvulo-Agropyrion repentis), Medicago lupulina, Taraxacum sect. Ruderalia (with Convolvulo-Agropyrion repentis)

4.9.7 Stachyo sylvaticae-Dipsacetum pilosi (TX. ex. OBERD. 1957) PASSARGE ex WOLLERT & DENGLER nom. nov. hoc loco

Protologue: ‘Cephalarietum pilosae (TX. 42)’ (OBERDORFER 1957: 78) [Art. 32b]

Type: Urtica dioica 4, Brachythecium rutabulum 3, Plagiomnium undulatum 3, Poa trivialis 3, Dipsacus pilosus 2, Brachythecium rivulare 1, Carex acutiformis 1, Erychymichum hians 1, Geum urbanum 1, Plagiomnium cuspidatum 1, Brachypodium sylvaticum 1, Circaea lutetiana 1, Cirsium oleraceum 1, Im-patiens parviflora 1, Chaerophyllum temulatum 1, Silene dioica 1, Silene dioica +, Circaea lutetiana +, Festuca gigantea, Impatiens noli-tangere, Stachys sylva-tica (all with Epilobio montani-Gera-nietum robertianii), Calystegia sepium, Carduus crispus, Silene dioica

Note: JOUANNE & CHOUARD (2929: 988) explicitly described an alder-ash-forest association under the (illegitimate) name Dipsacetum pilosi. A tall-herb community with Dipsacus pilosus was published by OBERDORFER (1957) for the first time. However, he used the name Cephalarietum pilosae which as a later homonym is illegitimate. The replacement of this name with a nomen novum by PASSARGE (2002) therefore was legitimate, but according to ICPN Art. 3i the new name was not published validly by him.

4.9.8 Typifications

Artemisietalia vulgaris TX. 1947*: 276:
Calystegion sepium TX. 1947*: 276 [lectotypus DENGLER & WOLLERT hoc loco] – The reasons are given in DENGLER (2002: 66) as to why this alliance is the only possible type element according to ICPN. Since the order with the Arc-tion lappae TX. 1947* nom. inval. [Art. 8] comprises another alliance, the type alliance, in contrast to the conclusions of DENGLER (l.c.), is for formal reasons not a holotype but a lecto-type.

Agropyretalia intermedio-repentis OBERD. et al. ex T.MÜLLER & GöRS 1969*: 211:
Convolvulo-Agropyron GöRS 1966*: 530 [lectotypus DENGLER & WOLLERT hoc loco]

Galio-Alliarietalia petiolatae OBERD. in GöRS & T.MÜLLER 1969*: 154:

Onopordetalia acanthii B R.-BL. & TX. ex KLIKA & HADAČ 1944b: 291:
Onopordion [‘BR.-BL. 1926’] B R.-BL. ex KLIKA & HADAČ 1944b*; 291 (= Onopordion acanthii BR.-BL. in BR.-BL. et al. 1936*) [lectotypus (Art. 20)]

Aegopodion podagrariae TX. 1967*: 440:
Dactyl-Aegopodion PASSARGE 1967*: 157:
Arctio nemorosi Tx. ex PASSARGE 1967* [*Tx. (1931) 1950*]: 157 [lectotypus DENGLER & WOLLERT hoc loco]

Dauco-Melilotton GÖRS ex ROSTAŃSKI & GUTTE 1971*: 173:
Centauere diffusae-Berteroetum OBERD. 1957*: 69 (=Berteroetum incanae SISSINGH & TIDEMAN in SISSINGH 1950*) [lectotypus DENGLER & WOLLERT hoc loco] – Görs (1966) only published the alliance provisionally (ICPN Art. 3b), and OBERDORFER et al. (1967) did not validate it (ICPN Art. 8). The validation selected here is thus probably the earliest one.

Epilobion angustifolii Tx. ex OBERD. 1957*: 98:
Epilobio angustifolii–Senecionetum sylvatici TX. (1931) 1950*: 157 [lectotypus D ENGLER & WOLLERT hoc loco]. – This name is thus probably the earliest one.


Onopiorion acanthii BR.-BL. in BR.-BL. et al. 1936*: 27:
Onopordetum acanthii BR.-BL. in BR.-BL. et al. ['1926'] 1936*: 29 (= Onopordetum acanthii LIBBERT 1932*) [lectotypus (Art. 20)]

Agropyretum repentinis FELFÖLDY 1942*:
FELFÖLDY (1942: tab. 3, rel. 2) [lectotypus DENGLER & WOLLERT hoc loco] – The name would thus be an earlier syntaxonomic synonym of the Convulvulo arvensis-Agropyretum repentinis FELFÖLDY 1943* nom. invers. propos. We propose to reject it as a nomen ambiguum, since on the one hand two of the five relevés in the protologue now belong to different associations (rel. 4: Leonuro-Ballotetum nigrae, alliance Arctio lappae; rel. 5: Falcario-Agropyretum), whilst on the other hand numerous associations with very different contents have been described under the name ‘Agropyretum repentinus’ (cf. TUXEN 1976: 46, 153).

Alliario-Chaerophylletum temuli LOHMeyer ex OBERD. 1957*: 77:
Chaerophyllum temulum 3, Galium aparine 2, Geum urbanum 2, Poa trivialis 2, Allaria petiolata 1, Dactylis glomerata 1, Lamium album 1, Urtica dioica 1, Anthriscus sylvestris +, Calystegia sepium +, Galeopsis tetrahit +, Glechoma hederacea +, Impatiens parviflora +, Poa nemoralis +, Taraxacum sect. Ruderalia +, Viola reichenbachiana +; number of species 16, forest fringe exposed SE, Germany: Leine-Werra hilly region – relevé taken from DIERSCHE (1974: tab. 9, rel. 12) [neotypus DENGLER & WOLLERT hoc loco]

Arctietum lappae FELFÖLDY 1942*:
FELFÖLDY (1942: tab. 13, rel. 1) [lectotypus DENGLER & WOLLERT hoc loco] – This name thus becomes an earlier syntaxonomic synonym of the Artio lappae-Artemisietum vulgaris OBERD. et al. ex SEYBOLD & T.MÜLLER 1972*. As it has commonly been used in the sense of the Leonuro-Ballotetum nigrae SLAVNÍC 1951* (e.g. MUCINA 1993c; SCHUBERT et al. 2001) we propose its rejection as nomen ambiguum.

Arctio nemorosi Tx. ex OBERD. 1957*: 103: Arctium nemorosum 3, Rubus fruticosus agg. (H) 3, Lapsana communis 2a, Pinus sylvestris (T) 2a, Plagiognium affine 2a, Barbula unguiculata 2m, Brachythyecium rutabulum 2m, Dicranella staphylina 2m, Hypnum cupressiforme var. cupressiforme 2m, Poa trivialis 2m, Rhytidoped us squarrosum 2m, Agrostis stolonifera 1, Carex hirta 1, Cerasium holostoeides 1, Cirsiurn vulgare 1, Elymus repens subsp. repens 1, Galium aparine 1, Rumunculus repens 1, Stellararia media 1, Veronica chamaedrys 1, Achillea millefolium agg. +, Capsella bursa pastoris +, Crataegus sp. (H) +, Festuca gigantea +, Hypericum perforatum +, Moehringia trinervia +, Prunella vulgaris +, Rubus idaeus +, Taraxacum sect. Ruderalia +, Torilis japonica +, Trifolium repens +, Anthriscus sylvestris r; number of species 32, relevé area 5 m², cover tree layer 10%, cover herb layer 60%, cover cryptogam layer 10%, fringe within a forest, pH (H₂O) = 7.5, Lower Saxony: administrative district Lüchow-Dannenberg, MBT 2832/3, RW 4433.439 km, HW 5887.140 km, 31.07.02 – relevé taken from EISENBERG, DENGLER & WOLLERT hoc loco]

Arctio tomentosi-Rumicetum obtusifolii PASSARGE 1959*:
PASSARGE (1959: tab. 18, rel. 4) [lectotypus DENGLER & WOLLERT hoc loco]

Artemisietum vulgaris SCHREIER 1955*:
SCHREIER (1955: tab. 2, rel. 5) [lectotypus DENGLER & WOLLERT hoc loco] – This name thus becomes a later syntaxonomic synonym of the Tanaceto-Artemisietum SISSINGH 1950*.

Asparago-Chondrilietum junceae PASSARGE 1978b*:
PASSARGE (1978b: tab. 3, rel. 1) [lectotypus DENGLER & WOLLERT hoc loco]

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Cichorietum intybi TX. ex SISSINGH 1969*: SISINGH (1969: tab. 4, rel. 2) [lectotypus DENGLER & WOLLERT hoc loco] – This name would thus become an earlier syntaxonomic synonym of the Rubo caesii-Calamagrostietum epigeji COSTE 1985*. Since it has been mostly used in the literature in a different sense, i.e. for a community from forest clearings, it should be rejected as a nomen ambiguum.

Cichorietum intybi TX. ex SISINGH 1969*: SISINGH (1969: tab. 4, rel. 2) [lectotypus DENGLER & WOLLERT hoc loco]


Convolvulo arvensis-Agropyretum repentis FELFÖLDY 1943* nom. cons. et invers. propos. (original form: Agropyro repentis-Convolvulo arvensis): FELFÖLDY (1943: tab. 4, rel. 6) [lectotypus DENGLER & WOLLERT hoc loco] – The inversion of the name is proposed according to ICPN Art. 42, because Elymus repens dominates in five out of six relevés in the protologue over Convolulus arvensis (in the 6th they have the same cover-abundance-value). This widely used association name should be protected against the earlier Agropyretum repentis FELFÖLDY 1942*. It is not a nomen novum for this since FELFÖLDY (1943) did not refer explicitly to it. The author citation with brackets, which usually appears in the literature, is not authorised.

Corydalido claviculatae-Epiplobi tum angustifolii HÜLBUSCH & TX. 1968*: HÜLBUSCH & TÜXEN (1968: tab., rel. 8) [lectotypus DENGLER & WOLLERT hoc loco]

Corynephoro-Silenetum tataricae LIBBERT 1931*: LIBBERT (1931: tab. 3, rel. 12) [lectotypus DENGLER & WOLLERT hoc loco]. – This name thus becomes a syntaxonomic synonym of the Petasitetum tomentosi STEFFEN 1931*.


Epilobio montani-Geranietum robertiani LOHMEYER ex GÖRS & T.MÜLLER 1969*: 163 nom. cons. propos.: Geranium robertianum 5, Epilobium montanum 1, Geum urbanum 1, Lapsana communis 1, Sambucus nigra (H) 1, Taraxacum sect. Rude- ralá 1, Anthriscus sylvestris +, Cerastium holosteoides +, Chaenorhinum minus +, Chaerophyllum temulum +, Dactylis glomerata +, Galeopsis tetrahit +, Medicago lupulina +, Moehringia trinervia +, Poa nemoralis +, Rosa canina (H) +, Torilis japonica +, Viola reichenbachiana +; number of species 18, forest fringe exposed W, Germany: Leine-Werra hilly region – relevé taken from DIERSCHKE (1974: tab. 11, rel. 1) [neotypus DENGLER & WOLLERT hoc loco] – This association name, which is in current use, should be protected against the older name Circeaetum lutetianae KAISER 1926* (see above).


Hieracio-Poetum compressae PETIT 1978*: PETIT (1978: tab. 1, rel. 19/4) [lectotypus DENGLER & WOLLERT hoc loco] – This name thus becomes a later syntaxonomic synonym of the Poietum humili-compressae BORNKAMM 1961* nom. mut. propos.

Hyoscyamo nigrí-Conietum maculati SLAVNIČ 1951* nom. invers. propos. (original form: Conio-Hyoscyametum nigrí): SLAVNIČ (1951: tab. 12, rel. 5) [lectotypus DENGLER & WOLLERT hoc loco] – The inversion of the name is proposed following ICPN Art. 42, since Conium maculatum in three out of six relevés of the protologue (including the type relevé) has a higher cover-abundance-value compared with Hyoscyamus niger, whereas Hyoscyamus niger dominates in only one relevé.

Leonuro-Ballotetum nigrae SLAVNIČ 1951*: SLAVNIČ (1951: tab. 14, rel. 4) [lectotypus DENGLER & WOLLERT hoc loco] – The designation of a neotype by PASSARGE (1993: 361) was not authorised since the protologue comprises single relevés.

Linario vulgaris-Echietum vulgaris SLAVNIČ 1951*: SLAVNIČ (1951: tab. 17, rel. 1) [lectotypus DENGLER & WOLLERT hoc loco] – This name thus becomes a later syntaxonomic synonym of the Mellitetum albo-officinalis SISSINGH 1950*. Petasitetum spurii STEFFEN 1931*: 260 nom. mut. propos. (original form: Petasitetum tomentosi): Festuca rubra subsp. arenaria 3b, Petasites spurius 3a, Brachythecium rutabulum 2a, Calamagrostis epigejos 2a, Carex arenaria 2m, Ceratodon purpureus 1p, Elymus repens 1p, Leymus arenarius 1p, Tortulauraliformis 1p, × Calamophila baltica +p; number of species 10, relevé area 25 m², cover herb layer 80%.
cover cryptogam layer 10%, Mecklenburg-Vorpommern: Usedom, coastal-km 19.22, 18.05.94 – relevé taken from ISERMANN (1997: tab. A 9.16, rel. 1269 = serial no. 40) [lectotypus DENGLER, ISERMANN & WOLLERT hoc loco]. – Since no relevé of this association from the region of the original diagnosis (coastal dunes of the Baltic Sea on the Courish Spit) has been available, we here designate a neotype which corresponds to these dunes at least ecologically (coastal dunes of the Baltic Sea in E Mecklenburg-Vorpommern). The nomen mutatum is proposed because the name Petasites tomentosus has not been used for the name-giving species for a long time; DINGWALL (in TUTIN et al. 1976: 188) did not even mention it as a synonym.

Poetum humili-compressae BORNKAMM 1961* nom. mut. propos. (original form: Poetum ancipiti-compressae):

BORNKAMM (1961: tab. 5, rel. 7) [lectotypus DENGLER & WOLLERT hoc loco]

Polygonetum cuspidati GÖRS & T.MÜLLER ex GÖRS 1975*:

GÖRS (1975: tab. 11, rel. 2) [lectotypus DENGLER & WOLLERT hoc loco]

Poo compressae-Tussilaginetum farfarae TX. 1931*:

TÜXEN (1931: 85, rel. 2) [lectotypus DENGLER & WOLLERT hoc loco]. – This name thus becomes a later syntaxonomic synonym of Poetum ancipiti-compressae:

BORNKAMM (1961: tab. 5, rel. 7) [lectotypus DENGLER & WOLLERT hoc loco]

Polygonetum cuspidati GÖRS & T.MÜLLER ex GÖRS 1975*:

GÖRS (1975: tab. 11, rel. 2) [lectotypus DENGLER & WOLLERT hoc loco]

Poo compressae-Tussilaginetum farfarae TX. 1931*:

TÜXEN (1931: 85, rel. 2) [lectotypus DENGLER & WOLLERT hoc loco]

Poo trivialis-Rumicetum obtusifolii HÜLBUSCH 1969*:

HÜLBUSCH (1969: tab., rel. 14) [lectotypus DENGLER & WOLLERT hoc loco]

Rubo caesii-Calamagrostietum epigeji COSTE 1985*:

COSTE (1985: tab. 2, rel. 10) [lectotypus DENGLER & WOLLERT hoc loco]

Saponario-Petasitetum spurii WALTHER 1977*:

WALTHER (1977: tab. 3, rel. 6) [lectotypus DENGLER & WOLLERT hoc loco] – This name thus becomes a later syntaxonomic synonym of the Poo compressae-Tussilaginetum farfarae TX. 1931*.

Tanaceto-Artemisietum SISSINGH 1950*:

SISSINGH (1950: tab. 32, rel. 8) [lectotypus DENGLER & WOLLERT hoc loco]

Torilidetum japonicae LOHMeyer ex GÖRS & T.MÜLLER 1969*: 162:

Torilis japonica 3, Brachythecium rutabulum 2b, Festuca rubra agg. 2b, Populus tremula (T) 2b, Calamagrostis epigejos 2a, Rubus corylifolius agg. (H) 2a, Stellaria holostea 2a, Plagiognium affine 2a, Brachythecium rutabulum (on wood litter) 2m, Elymus repens subsp. repens 2m, Hypnum cupressiforme var. cupressiforme 2m (epigaeic) and 2m (on wood litter), Orthotrichum affine 2m (on wood litter), Poa angustifolia 2m, Scleropodium purum 2m, Agrostis capillaris 1, Galium aparine 1, Achilles millefolium agg., +, Artemisia vulgaris +, Convolvulus arvensis +, Hypericum perforatum +, Medicago lupulina +, Poa palustris 1, Rubus corylifolius agg. (S) +, Urtica dioica +, Vicia tetrasperma r; number of species 23, relevé area 5 m², cover tree layer 20%, cover herb layer 90%, cover cryptogam layer 30%, fringe within a forest, pH (H2O) = 7.6, Lower Saxony: administrative district Lüchow-Dannenberg, MTB 2832/1, RW 4433.991 km, HW 5891.927 km, 19.07.02 – relevé taken from EISENBERG (2003: tab. II, rel. 119 = serial no. 40) [neotypus EISENBERG, DENGLER & WOLLERT hoc loco]

Urtico-Aegopodietum TX. ex GÖRS 1968* nom. cons. propos.:

GÖRS (1968: tab. 46, rel. 6) [lectotypus DENGLER & WOLLERT hoc loco] – This association name, which is in current use, should be protected against the older name Agropyro repentis-Aegopodietum podagrariae TX. 1967*.

Urtico-Cruciatetum laevipedis DIERSCHKE 1973*:

DIERSCHKE (1973: tab. 2, rel. 11) [lectotypus DENGLER & WOLLERT hoc loco]

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