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An update on the taxonomy of *Festuca* (Poaceae) with a focus on Central European taxa

Peter Englmaier

"Oeconsult", Expert consultancy for scientific ecology, Einsiedlergasse 23/8, 1050 Vienna, Austria; University of Vienna, Faculty for Life Sciences, Djerassiplatz 1, 1030 Vienna, Austria; e-mail: peter.franz.josef.englmaier@univie.ac.at

Dedicated to Manfred A. Fischer in recognition of his enormous contributions to the Excursion Flora of Austria.

Abstract: To keep the Excursion Flora of Austria and other Central European floras up to date, systematics, taxonomy and nomenclatural correctness within the *Festuca-Lolium* group (core of the subtribe Loliinae) were critically evaluated in light of recent molecular phylogenetic investigations. This resulted in a taxonomic concept based on two monophyletic main genera, *Lolium* and *Festuca*, both being associated with various basal groups, which can be separated at generic rank as required, allowing phylogenetic relationships to be reflected as reliable as possible. Within the area covered by the upcoming fourth edition of the Excursion Flora of Austria and the Eastern Alps, only one such basal group (*Drymochloa*) is of relevance. New names and combinations required by this updated taxonomy are provided.

Key words: *Festuca*; *Lolium*; taxonomy; nomenclatural novelties

Zusammenfassung: **Ein Update zur Taxonomie von *Festuca* (Poaceae) mit Schwerpunkt auf mitteleuropäischen Taxa**
Um die „Exkursionsflora von Österreich" und andere mitteleuropäische Florenwerke aktuell zu halten, wurden Systematik, Taxonomie und Nomenklatur der Gattungsgruppe *Festuca-Lolium* (der zentrale Bereich der Subtribus Loliinae) im Lichte neuester molekularphylogenetischer Untersuchungen einer kritischen Betrachtung unterzogen. Daraus ging ein Konzept hervor, das auf zwei monophyletischen Leitgattungen, *Lolium* und *Festuca*, aufbaut. Aus beiden Leitgattungen lassen sich basale Gruppen im Gattungsrang abtrennen, um die phylogenetischen Verhältnisse möglichst getreu abbilden zu können. Für das von der neu erscheinenden 4. Auflage der „Exkursionsflora für Österreich und die gesamten Ostalpen" abgedeckte Gebiet ist davon allerdings nur eine, mit *Lolium* assoziierte Gattung (*Drymochloa*) relevant. Dazu sind einige neue Namen und Neukombinationen einzuführen, die hier präsentiert werden.

Introduction

In the last decades, numerous molecular phylogenetic studies have revealed multifarious and astonishing insights into evolution and phylogenetic relationships, although their results are often based on only a few, experimentally easily accessible genetic markers and thus cannot necessarily explain specific characteristics of the objects under study. In several cases, these molecular phylogenetic data contradict conventional morphological-anatomical criteria used for classification. This will render a synthesis difficult, requiring careful consideration of all available arguments if one wants to approach the ideal image of a "natural system" and to reflect this as far as possible in taxonomy and nomenclature. Usually, this implies accepting only groups if they are identified as monophyletic, although from a paleontological perspective of biological Earth history, paraphyletic taxa were argued to have to be accepted, if they either include or exclude

the ancestors of new sister clades (Carter & al. 2015). However, it is still to be kept in mind, that systematics, taxonomy and at least nomenclature, even if intended to approximate a natural system as far as possible, are all based on man-made concepts and rules. This means that they also need to be orientated towards practicability.

In most cases, it will be intended to classify verified monophyletic units as taxa, and this may require a split of traditionally broadly defined genera. Within grasses (Poaceae), good examples for such a successful split of segregate genera are *Sesleriella* and *Psilathera* from *Sesleria* (Kuzmanović & al. 2017) or *Oloptum* from *Piptatherum* (Hamasha & al. 2012). However, in some cases a split of large genera, for whatever reason, would result in segregate units nested within paraphyletic "residual" taxa. For example, traditionally morphologically defined subunits of *Bromus*, which have been repeatedly elevated to generic rank (particularly *Anisantha*), do not match clades based on molecular phylogenetic data. Thus, *Bromus* rightly remains in its traditional delimitation, rendering it monophyletic (Saarela & al. 2007). Another well-known example is the genus *Vulpia*. Annuals united under this generic name were found to be closely related to several different subunits of *Festuca* (e. g. Catalan & al. 2004), and a re-integration into *Festuca* is without any alternative. Therefore, in such cases, the only way out is to accept broadly defined higher taxa.

However, under different conditions such as reticulate coherences, this approach will not provide any acceptable solution. Although merging of *Aegilops* and *Triticum* (Triticeae), for example, may seem acceptable due to their reticulate relations, the *Trisetaria* complex (Avenae) is neither sufficiently resolved by a single genus concept (as in Kellogg 2015) nor by an approach followed by Soreng & al. (2017: 268): "In order to salvage *Koeleria, Trisetum*, […] *Trisetopsis* along with *Trisetaria* we propose to resurrect *Acrospelion* […]." There is no doubt that taxonomy should not be guided solely by considerations of "saving" traditional concepts, thus, contributions like this do not really solve any problem at hand. Therefore, a more practicable approach will be to maintain a broad genus *Trisetaria* as well as some clearly separable taxa (e. g. *Koeleria*) at generic rank. But neither the resurrection of genera such as *Acrospelion* Besser nor the creation of new ones such as *Haeupleria* G. H. Loos (Loos 2010: 122) will improve the situation if they do not themselves meet the criterion of monophyly or if they cause new paraphyletic taxa elsewhere. Meanwhile, different concepts for this group were presented (Barberá & al. 2018, 2025). Nevertheless, the application of generic names as mentioned above is still under critical debate.

Another case is represented by the large genus *Sporobolus*. The genus *Crypsis* is well embedded within *Sporobolus* and its integration into *Sporobolus* is without any alternative (Peterson & al. 2014). On the other hand, the integration of *Spartina* is not fully accepted by the scientific community (Bortolus & al. 2019) and is still controversially debated, with valid arguments from both sides.

Taxonomic background of *Festuca* and its relatives

In the last two decades, numerous molecular-based investigations were published, dealing with systematics and evolutionary history of the core group of subtribe Loliinae (comprising *Lolium* and *Festuca*, including its segregate genera *Drymochloa*, *Leucopoa*, *Patzkea*, *Schedonorus* and *Micropyrum*, *Nardurus*, *Psilurus*, *Vulpia*, respectively, within the area covered here). All of

them (e. g. Darbyshire & Warwick 1992, Charmet & al. 1997, Torrecilla & Catalán 2002, Catalán & al. 2004, 2007, Inda & al. 2008, Cheng & al. 2016, Minaya & al. 2017, Mucko & al. 2024) have clearly confirmed the subdivision of *Festuca* in its traditional delimitation into two monophyletic clades, one representing mainly broad-leaved species, the other exclusively narrow-leaved ones. The genus *Lolium* is part of the clade of broad-leaved species, whereas *Vulpia* has been recognised as an integral part of the clade of narrow-leaved species.

Almost all research done in the last two decades has consistently shown a tendency to reinforce the integrity of the narrow-leaved clade by incorporating segregate genera, while gradually splitting the broad-leaved clade into an increasing number of segregate genera for several distinct subclades (Soreng & al. 2015, 2017, 2022, Peterson & al. 2025). Their validation and circumscription sometimes raise doubts, especially since there are clear inconsistencies between different molecular phylogenetic investigations, which not only concern details within infrageneric units, but also the hierarchical arrangement of the subclades and their delimitation from one another, resulting in irreconcilable hypotheses on relationships. For example, in comparison to Catalán & al. (2004, 2007), Inda & al. (2009), and Minaya & al. (2017), the presentation of Peterson & al. (2025) would group the "*Hesperochloa* clade" much closer to *Drymochloa* than to *Lolium*. Consequently, neither the development of biogeographic scenarios, for instance dispersal pathways, has been sufficiently addressed, nor a harmonised classification and subdivision of this core group based on recently available data has been established.

Possible causes for this include:

● **Selective sampling:** By far not all known and putative subgroups and biogeographical units are equally represented among the taxa analysed so far. For example, Minaya & al. (2017) covered 163 taxa in total (out of 658: POWO 2026), but presented *Festuca sibirica*, the type of *Leucopoa* occurring in Siberia, just in their supplement (Minaya & al 2017: Tab. S1.1.) with an incomplete dataset, thus representing their "*Leucopoa* clade" only by the Californian species *L. kingii*. Peterson & al. (2025) placed *L. albida* (= *F. sibirica*) and *L. komarovii* quite distant from *L. kingii* and renamed the latter as *Hesperochloa kingii. Lolium spectabile* and *L. pulchellum* are placed in a distant neighbourhood to *H. kingii*. The two datasets are not directly comparable.

● **Restricted methodology:** Molecular markers are the same in nearly all papers up to Minaya & al. (2017), Mucko & al. (2024) and Peterson & al. (2025). The use of more markers and more advanced methods may help to gain new insights in future works.

● **Incorrect taxonomic assignment of taxa:** In some cases, the correct assignment of individual species remained doubtful, e. g. "*Festuca jurana*" (Loos 2010: 121); in others it was based on erroneous interpretation of molecular data, e. g. placing *Festuca laxa* within the broad-leaved clade and finally renaming it as *Leucopoa laxa* (Host) H. Scholz & Foggi, Willdenowia 35: 243 (2005), which was later shown to belong to sect. *Dimorphae* of the narrow-leaved clade (see Müller & Catalán 2006, Minaya & al. 2017).

● **Unresolved hybridization effects:** Phylogenies inferred from either nuclear or plastid molecular markers occasionally result in mutually contradictory patterns of relationships as seen in the positions of the *Leucopoa*- and the *Scariosae*-clade (Torrecilla & al. 2003) or the positions of some taxa within *Festuca* sect. *Eskia* (Mucko & al. 2024). Such contradictory patterns mainly depend on who is the maternal partner in hybridization events or are caused by effects of poorly understood plastid-nuclear discordance (see Rose & al. 2021).

● **Considerable genetic variability within broadly accepted species:** Excellent examples for this include *Festuca nigrescens* and *F. trichophylla* within *F.* sect. *Aulaxyper* (de Nova & al. 2006) but can also be found among broad-leaved species now assigned to *Lolium* (Dani & al. 2014).

● **Lack of reliable paleontological data:** Phylogenetic relationships in space and time, especially over long distances, cannot be considered certain if they are only based on molecular genetic datasets, and there is insufficient evidence of available fossils, suitable paleohabitats and possible migration pathways (impressive examples in Coiro & al. 2019 and Koch & Parry 2020). In particular, a lack of sufficiently identifiable and reliably datable fossil evidence to support immigration events or phylogenetic splits makes age determinations based solely on molecular genetic investigations rather questionable, especially when contradicted by geological and paleoclimatological facts (see Herold & al. 2010 for an example).

All these points need further research and require consolidation of the data pool as well as verified knowledge of constraints in geosciences – a challenge for further research. It is not the aim of this contribution to discuss such implications in detail, but rather to present and validate a simple, stable and sustainable solution for taxonomic and nomenclatural problems within this group.

Treatment in current floristic literature

Since the last edition of the Excursion Flora of Austria (Fischer & al. 2008) several European floras have been updated, and they show quite different ways of dealing with the current state of knowledge taxonomically. Some of them have followed the traditional concept (*Festuca*, *Lolium*, *Vulpia*, occasionally *Psilurus* and *Micropyrum*: Lauber & al. 2018, Kaplan 2019, Parolly & Rohwer 2019, Müller & al. 2021). Others have partially adopted some recently proposed novelties (*Drymochloa*, *Schedonorus*, *Patzkea*), but keep *Vulpia* and occasionally *Psilurus* and *Micropyrum* as separate genera (Tison & de Foucault 2014, Pignatti 2019, Stace 2019).

Only Hassler & Muer (2022) include *Schedonorus* in *Lolium* and *Vulpia* in *Festuca*, but treat *Festuca pulchella* as *Leucopoa*.

The concept of an all-encompassing genus *Festuca* (including *Lolium*) dates back to Krause (1898: 340), but does not appear in any current European flora. Recently, a similar concept was adopted again by Columbus & Smith (2010: 65) for the Californian flora, combining *Lolium perenne* under *Festuca* as *F. perennis*. A subdivision into two groups ("Bovinae" and "Ovinae") roughly corresponding to the two main clades of *Festuca* was already anticipated by Fries in Andersson (1852), but has never been realised in recent floristic literature.

These different treatments in reference floras are obstructive not only for users but mainly for supra-regional data exchange in floristic and biodiversity research and thus need to be urgently resolved and harmonised.

During the ongoing revision of floras, e. g. the upcoming 4th edition of the Austrian excursion flora (see Fischer & Englmaier 2018) or the German "Schmeil-Fitschen" flora (Parolly & Rohwer 2024), the latest data on phylogenetic relationships within the Loliinae had to be taken into account and a balanced and acceptable taxonomic solution had to be found. It is unavoidable that the usual diagnostic characters for genus classification, such as the inflorescence form in *Lolium* and *Psilurus* or the annuality in *Vulpia*, are no longer applicable, and this fact had to be presented to the user in a coherent well-reasoned manner.

Requirements for a conclusive taxonomic concept

Systematics and taxonomy should largely reproduce evolutionary history, but can never represent all the complex and multi-layered interconnections of evolutionary processes. The aim is, therefore, to depict relationships and parallel developments as simple as possible and to avoid blatant misclassifications as far as possible.

At least the following requirements should be met:

- **Comparable treatment of clades and taxonomic units:** In the current classification, the broad-leaved clade is split into several segregate genera (*Lolium*, *Schedonorus*, *Patzkea*, *Leucopoa*), whereas all the species within the narrow-leaved clade (including *Vulpia* and other segregate genera) are merged in the single genus *Festuca.* A suitable solution must be found for the equivalent treatment of both clades.
- **Reliable representation of the state of phylogenetic knowledge:** As the understanding of phylogenetic relationships is limited, excessive splitting of genera may have disadvantages, because there is a risk of establishing a paraphyletic genus for the remainder (such as *Schedonorus* alongside *Lolium*), and it may result in a cascade of changes in generic names. A subdivision at the rank of subgenus or section can adequately represent subgroups without consequences for generic naming.
- **Flexibility for new discoveries:** Taxa belonging to the subtribe Loliinae are found worldwide, but detailed phylogenetic studies have mainly focused on species from their main distribution area in Europe. Thus, numerous insufficiently studied taxa, mainly from the broad-leaved clade, are still assigned to *Festuca*, following traditional classification, while other, well-characterised ones have already been assigned to several segregated genera. In contrast, when establishing the two, well known main clades at generic rank, a reliable classification is possible for any taxon within the Loliinae, even based on morphological characteristics only. Subdivisions at subgeneric rank are already established and, if necessary and justified, it would still be possible to separate further basal groups at generic rank, as exemplified with *Drymochloa.*
- **Comprehensibility and practicability:** Cladistically adjacent units should be brought together and placed at an appropriate rank. Furthermore, a solution is preferable that minimises the need for extensive nomenclatural changes and the number of taxonomic groups as far as possible.
- **Wide-ranging acceptance and application:** It is still too early to conclusively evaluate this aspect. However, the practical concept proposed here has already been successfully implemented in the latest issue of "Schmeil-Fitschen" (Parolly & Rohwer 2024) and will be applied in the upcoming edition of the Austrian excursion flora.

Based on these considerations, a solution with two genera, corresponding to the two main clades, can be identified as the best compromise. It avoids considerable confusion of generic names, and minimizes nomenclatural consequences. Subdivisions can be realised at infrageneric ranks, valid names for several infrageneric groups being already available. Unexpected relationships inferred from molecular phylogenetic data, e. g. in sect. *Loretia*, can be reliably manifested in this way.

On the other hand, a solution with a broadly defined large genus *Festuca* in the conventional sense does not represent the two main clades satisfactorily and would only result in a monophyletic genus if all the genera of the entire core Loliinae were joined in this genus. This treatment

has already been discussed, but the proposal by Krause (1898) has received little attention due to the many not validly published names cited. A comparable solution was proposed by Kellogg (2015) for a much more confusing group (*Trisetaria* s. latiss.), which was not broadly accepted, for similar reasons (Soreng & al. 2015, 2017, 2022).

An alternative option is further splitting, which may also be extended to the narrow-leaved clade. Such an approach would, however, result in an increased need for nomenclatural changes, likely leading to unnecessary confusion.

Nomenclatural consequences

Within the core group of Loliinae treated here, Linnaeus listed two generic names, *Festuca* (Linnaeus 1753: 73) and *Lolium* (Linnaeus 1753: 83), both qualified for priority and applicable to the two clades according to the concept explained above.

Later, additional segregate genera were created, which over time were interpreted differently and in some cases discarded again (e. g. *Loretia*, *Micropyrum*, *Nardurus*, *Psilurus*; Catalan & al. 2004, 2006, 2007), but no general overview was provided.

In recent years, some segregate genera within the broad-leaved clade have been resurrected (*Schedonorus*, *Leucopoa*), others have been newly established (*Patzkea*: Loos 2010: 122). However, understanding the impact of such segregation is limited, because only a small number of species have been studied in detail.

The concept of Darbyshire (1993), which is completed here, resulted in a re-merging of lineages, mainly of parts of *Schedonorus* and *Lolium*, and the designation of segregate genera is limited to the basal groups that have been well circumscribed in all studies to date. In the area of the floras under consideration, this only applies to *Drymochloa*. Some of the Macaronesian diploids (Menezes de Sequeira & al. 2009) and the sect. *Lojaconoa* (Müller & Catalán 2006, recently named "*Locajonoa*" at generic rank: Peterson & al. 2025) seem to be further promising candidates for such basal genera.

Taxonomic overview

All new names used here are marked with asterisks in square brackets (a single asterisk for new taxa and new combinations, double asterisks for existing nomina nuda) and are validated subsequently in the chapter "Nomenclatural novelties".

Subtribe **Loliinae** Dumort., Agrost. Belg. Tent. 95: 182 (1823).

Drymochloa Holub, Folia Geobot. Phytotax. 19: 95 (1984).
Type: *Poa sylvatica* Pollich, Hist. Pl. Palat. 1: 83 (1776) ≡ *Drymochloa sylvatica.*
= *Festuca* sect. *Phaeochloa* Griseb., Spic. Fl. Rumel. 2: 433 (1846) sensu lectotypi (typified by Alexeev 1983 with *Festuca drymeja*), non sensu orig.
= *Festuca* sect. *Montanae* Hack., Monogr. Festuc. Eur.: 195 (1882).
= *Festuca* subg. *Drymanthele* V. I. Krecz. & Bobrov in V. L. Komarov, Fl. URSS 2: 532 (1934).

Included taxa:

D. sylvatica (Pollich) Holub, Folia Geobot. Phytotax. 19: 99 (1984).
= *Festuca altissima* All., Auct. Fl. Pedem.: 43 (1789), non Boiss. (1838).

D. drymeja (Mert. & W. D. J. Koch) Holub, Folia Geobot. Phytotax. 19: 99 (1984) ≡ *Festuca drymeja* Mert. & W. D. J. Koch in Röhling, Deutschl. Fl., ed. 3, 1: 670 (1823).

Lolium L., Sp. Pl. 1: 83 (1753) (s. lat., incl. *Amphigenes*, *Leucopoa*, *Patzkea*, *Schedonorus* and *Xanthochloa*).
Type: *Lolium perenne* L., Sp. Pl. 1: 83 (1753).

subg. ***Hesperochloa*** [*] ≡ *Hesperochloa* (Piper) Rydb., Bull. Torrey Bot. Club 39: 106 (1912).

Considering current knowledge, this is the valid name to be used for a heterogenous group with *Festuca kingii* as its type. If further investigations show substantial differences between the group of European species and *F. kingii*, a North American species, the European representatives may be separated as another subgenus based on *Amphigenes* (type: *F. nutans* Wahlenb. = *F. pulchella*: Müller & Catalán 2006) or as a section within the subgenus *Hesperochloa* (see discussion in Müller & Catalán 2006). *Leucopoa* with its type: *L. albida* (Turcz. ex Trin.) V. I. Krecz. & Bobrov in V. L. Komarov, Fl. URSS 2: 495 (1934) = *Festuca sibirica* (Griseb.) Hack. ex Boiss., Fl. Orient. 5: 626 (1884) is insufficiently investigated, but according to preliminary results obtained by Minaya & al. (2017: supplementary table S1.1., "*Leucopoa* pro partim clade") and Peterson & al. (2025, treated at generic rank) it likely merits to be treated as a separate subgenus or section.

Included taxa:

L. pulchellum [*]
subsp. ***juranum*** [*]
subsp. ***pulchellum***

L. spectabile [*]
subsp. ***affine*** [*]
subsp. ***carniolicum*** [*]
subsp. ***spectabile***

subg. ***Subbulbosae*** [*]
= *Patzkea* G. H. Loos, Jahrb. Bochum. Bot. Verein 1: 126 (2010).
= *Xanthochloa* (Krivot.) Tzvelev, Bot. Zhurn. 91: 275 (2006), proposed by Peterson & al. (2025).

Note: In its original circumscription, *Patzkea* is a heterogeneous group comprising, in addition to the type: *Festuca paniculata*, also *F. coerulescens* and *F. triflora*. Müller & Catalán (2006) placed the latter two in sect. *Lojaconoa* (phylogenetic position still unresolved, but close to the basal groups around *Drymochloa*, confirmed by Peterson & al. 2025) and these two species are to be excluded here. Contrary to these facts, new combinations for *F. coerulescens* and *F. patula* (also belonging to sect. *Lojaconoa*, but not investigated using molecular data yet) under *Patzkea* were made by H. Scholz in Greuter & Raus (2010: 200).

Festuca sect. *Phaeochloa* Griseb., Spicil. Fl. Rum. 2: 433 (1846) was originally created to accommodate *F. fibrosa* (ibid.: n. sp. No. 31) = *F. paniculata* (L.) Schinz & Thell. This name was, in contrast to the intention of A. Grisebach, lectotypified with the second of the two species listed by Grisebach in this group (ibid.: No. 32), *F. drymeja* Mert. & W. D. J. Koch (Alexeev 1983). Later on, this name was frequently misapplied and used in the circumscription of *Drymochloa*, mainly by Spanish and Russian authors, whereas Kreczetovich & Bobrov (1934: 525) and later on Janchen & Markgraf-Dannenberg (1960) wrongly used it at subgeneric rank for a group containing *F. varia*.

Included taxon:

L. paniculatum [*]

subg. ***Schedonorus*** (P. Beauv.) Darbysh., Novon 3: 241 (1993) ≡ *Schedonorus* P. Beauv., Ess. Agrostogr.: 99 (1812), misspelled as "Schenodorus" on p. 177 (index), in an emended sense, following Darbyshire (1993) and Holub (1998), whereas Palisot de Beauvois used this genus in a much wider sense, among others explicitly including *Festuca altissima* All., *F. nigrescens* Lam., *F. pulchella* Schrad. and *F. violacea* Gaudin.
Type: *Festuca elatior* L., Sp. Pl. 1: 75 (1753), nom. utique rej. (= *Festuca arundinacea* Schreb.), designated by Niles & Chase (1925: 193).
= *Festuca* sect. *Bovinae* (Fr. ex Andersson) Hack., first used by Fries in Andersson (1852: 17) without rank, placed on section rank in an emended sense, excl. sect. *Montanae* by Hackel (1882: 148).

sect. ***Schedonorus*** (*Lolium pratense* agg.)

Included taxa:

L. pratense (Huds.) Darbysh., Novon 3: 242 (1993) ≡ *Festuca pratensis* Huds., Fl. Angl.: 37 (1762).

L. apenninum (De Not.) Ardenghi & Foggi, Taxon 64: 1039 (2015) ≡ *Festuca apennina* De Not., Repert. Fl. Ligust.: 468 (1844).

L. arundinaceum (Schreb.) Darbysh., Novon 3: 241 (1993) ≡ *Festuca arundinacea* Schreb., Spic. Fl. Lips.: 57 (1771).

subsp. ***arundinaceum*** ≡ *F. a.* subsp. *arundinacea*

subsp. ***fenas*** (Lag.) Banfi, Bracchi & Galasso, Mem. Soc. Ital. Sci. Nat. Mus. Civico Storia Milano 33: 8 (2005) ≡ *Festuca fenas* Lag., Gen. Sp. Pl.: 4. (1816) ≡ *Festuca arundinacea* subsp. *fenas* (Lag.) Arcang. Comp. Fl. Ital., ed. 2: 61 (1894).

subsp. ***orientale*** (Hack.) G. H. Loos, Jahrb. Bochum. Bot. Verein 1: 124 (2010) ≡ *Festuca elatior* subvar. *orientalis* Hack., Monogr. Festuc. Europ.: 154 (1882) ≡ *Festuca arundinacea* subsp. *orientalis* (Hack.) K. Richt., Pl. Eur. 1: 102 (1890).

subsp. ***uechtritzianum*** [*]

L. ×***aschersonianum*** (Dörfl.) Banfi, Galasso, Foggi, Kopecký & Ardenghi, Taxon 66: 710 (2017) ≡ *Festuca* ×*aschersoniana* Dörfl., Herb. Norm. n.° 5380 (1911) (*L. arundinaceum* subsp. *arundinaceum* × *L. pratense*).

sect. ***Plantynia*** [*]

Included taxon:

L. giganteum (L.) Darbysh., Novon 3: 241 (1993) ≡ *Bromus giganteus* L., Sp. Pl. 1: 77 (1753) ≡ *Festuca gigantea* (L.) Vill., Hist. Pl. Dauphiné 2: 110 (1787) ≡ *Schedonorus giganteus* (L.) Holub, Preslia 70: 113 (1998).

Note: The combination under *Schedonorus* by Holub, Preslia 70: 113 (21 July 1998) has priority over *Schedonorus giganteus* (L.) Soreng & Terrell, Phytologia 83: 86 (27 July 1998). *Schedonorus giganteus* (L.) Roem. & Schult., Syst. Veg., ed. 15, 2: 644 (1817), ascribed to Gaudin (from a manuscript version of Gaudin's "Flora Helvetica", without any additional information) is not validly published (Art. 36.1 ICN: Turland & al. 2025). Holub (1998) gives further details on the publication history of "Flora Helvetica", where Gaudin did not accept *Schedonorus* as a separate genus.

subg. ***Lolium*** (genus *Lolium* in the traditional sense)

Included taxa:

L. perenne L., Sp. Pl. 1: 83 (1753).

L. multiflorum Lam., Fl. Franç. 3: 621 (1779).

L. ×boucheanum Kunth, Révis. Gramin. 3: t. 220 (1834).
= *L. ×hybridum* Hausskn., Mitt. Geogr. Ges. Thüringen 5: 32 (1887) (*L. perenne* × *L. multiflorum*).

L. remotum Schrank, Baier. Fl. 1: 382 (1789).

L. temulentum L., Sp. Pl. 1: 83 (1753).

L. rigidum Gaudin, Agrost. Helv. 1: 334 (1811).

subsp. ***rigidum***

subsp. ***loliaceum*** [*] (– subsp. *lepturoides*)

Note: Bory & Chaubard validly described *Rottboellia loliacea*, Exp. Sci. de Morée 3 Bot., Paris: 46, Pl. 3 fig. 2 (1832). This name and the drawing in Chaubard & Bory, Nouv. Fl. Peloponnes: 9, Pl. 3 fig. 2 (1838) were cited in the detailed description of *Lolium lepturoides* by Boissier (Diagn. Pl. Orient. 13: 67. 1854), making this name illegitimate at species rank. *Lolium rigidum* var. *lepturoides* Fiori & Paoli, Fl. Analit. Italia 1: 104 (1896) was based on it, unfortunately including the different taxon *L. subulatum* Vis., Fl. Dalmat. 1: 90 (1842). Further on, Sennen & Mauricio newly combined *L. rigidum* subsp. *lepturoides* (Cat. Fl. Rif Orient.: 135, 1933) based on Boissier's name alone, rendering it also illegitimate (Art. 6.10 ICN: Turland & al. 2025).

Hybrids between representatives of subg. *Schedonorus* and subg. *Lolium*, previously treated as "intergenerics" between *Lolium* and *Festuca*:

L. ×elongatum (Ehrh.) Banfi, Galasso, Foggi, Kopecký & Ardenghi, Taxon 66: 711 (2017) ≡ *Festuca elongata* Ehrh., Beitr. Naturk. 6: 133 (1791).

= *Lolium* ×*festucaceum* Link, Linnaea 2: 235 (1827), "*L.* ×*loliaceum*" auct. mult. (*L. perenne* × *L. pratense*).

L.* ×*subnutans (Holmb.) Banfi, Galasso, Foggi, Kopecký & Ardenghi, Taxon 66: 715 (2017) ≡ *Festuca* ×*subnutans* Holmb., Bot. Not. 1930: 94 (1930).
= *L.* ×*braunii* auct., non K. Richt. (*L. multiflorum* × *L. pratense*).

Festuca L., Sp. Pl. 1: 73 (1753) (incl. *Micropyrum*, *Nardurus*, *Psilurus*, *Vulpia*).
Type: *Festuca ovina* L., Sp. Pl. 1: 73 (1753), designated by Hitchcock (1920: 28).

In the traditional circumscription of *Festuca* (including broad-leaved species), this emended extent of the genus is correctly named as subg. *Festuca* (e. g. Šmarda & al. 2005), in some earlier publications invalidly named as subg. "Eu-Festuca" (following Grisebach 1844: 432) or [unranked] *Ovinae* by Fries (in Andersson 1852) or as sect. Ovinae by Hackel (1882: 81).

The traditional subdivisions at sectional rank are sufficient and can be retained, since no further infrageneric rank is needed for classification. It would be conceivable to contrast taxa around *Festuca varia* and *F. dimorpha* with the remainder of the genus at subgeneric rank, but this will not be discussed further due to still insufficient data.

In most floristic works, numerous groups of closely related taxa, especially among the sheep's fescue in a wide sense (sect. *Festuca*), are listed provisionally under "species groups", "aggregates" ("cycles" in Kreczetovich & Bobrov 1934: 503 ff), or "charakterystyka grupy *Festuca ovina*" (Pawlus 1983). The term "aggregate" has the disadvantage that it is not a taxonomic rank, but is commonly applied to a group of taxa difficult to determine. Therefore, the taxonomic rank "series" is used here for such groups, in case their recognition is deemed useful (accordingly, not each section is divided into series and not all species of a section containing series need to be assigned to a series). Since Kreczetovich & Bobrov (1934), numerous series were already named within *Festuca*, but some of them are not validly published, e. g., instead of autonyms, Art. 22.2 ICN: Turland & al. 2025) or are nomina nuda (all the series named in Janchen & Markgraf-Dannenberg 1960, as these are without description and/or designation of a type:). Some of them are not really useful, e. g. ser. *Supinae* V. I. Krecz. & Bobrov, ser. *Psammophilae* Pawlus (both are part of ser. *Festuca* in a wide sense as used here) or ser. *Trachyphyllae* Pawlus (ser. *Duriusculae* V. I. Krecz. & Bobrov sensu descr., non sensu typi) as a part of ser. *Sulcatae*.

sect. ***Dimorphae*** Joch. Müll. & Catalán, Taxon 55: 142 (2006).
– sect. *Laxae* Janchen & Markgr.-Dann., Cat. Fl. Austr. I, 4: 802 (1960 ["1959"]), nom. nud.
Type: *Festuca dimorpha* Guss. (1826).

Included taxa:

F. laxa Host, Icon. Descr. Gram. Austr. 2: 58 (1802).

F. dimorpha Guss., Pl. Rar.: 34 (1826).

sect. ***Eskia*** Willk., Prodr. Fl. Hispan. 95 (1861).

Type: *F. eskia* Ramond ex DC., Fl. Franc. ed. 3. 3: 52 (1805).
= sect. *Variae* Hack., Monogr. Festuc. Eur.: 169 (1882).

Included taxa:

Species not assigned at series rank:

F. bosniaca Kumm. & Sendtn., Flora 32: 756 (1849).

F. pumila Chaix, Pl. Vapinc.: 12 (1785).

ser. ***Variae*** [**] (*F. varia* agg.)

F. alpestris Roem. & Schult., Syst. Veg. 2: 722 (1817).

F. calva (Hack.) K. Richt., Pl. Eur. 1: 104 (1890).

F. acuminata Gaudin, Agrost. Helv. 2: 287 (1811).

F. varia Haenke in Jacq., Collectanea 2: 94 (1789 [“1788”]).

subsp. ***varia***

subsp. ***winnebachensis*** [*]

F. scabriculmis (Hack.) K. Richt., Pl. Eur. 1: 104 (1890)

subsp. ***scabriculmis***

subsp. ***luedii*** Markgr.-Dann., Bot. J. Linn. Soc. 76: 324 (1978) ≡ *Festuca luedii* (Markgr.-Dann.) Foggi, Gr. Rossi, Parolo & Wallossek, Inform. Bot. Ital. 39: 213 (2007).

subsp. ***handel-mazzettii*** [*]
= *F. pseudovaria* Vetter, Ann. Naturhist. Mus. Wien 57: 131 (1950), sensu typi, non sensu descr.!

Among the four hexaploid taxa of the Alpine region, the latter two (subsp. *luedii* and subsp. *handel-mazzettii* from the Southern Alps) are closely related to each other and to *F. acuminata* as their diploid ancestor (Englmaier & Wilhalm 2025), thus being placed at subspecific rank under *F. scabriculmis* besides the Western Alpine subsp. *scabriculmis*. In contrast, subsp. *winnebachensis* (from the surrounding of the uppermost Drau valley) seems to result from hybridizations among Eastern Alpine taxa (Mucko & al. 2024) and is therefore placed as a subspecies under *F. varia*.

F. brachystachys (Hack.) K. Richt., Pl. Eur. 1: 104 (1890) (*F. versicolor* s. lat. p. p.) ≡ *F. varia* var. *brachystachys* Hack., Monogr. Festuc. Eur.: 174 (1882).

subsp. ***brachystachys*** ≡ *F. versicolor* subsp. *brachystachys* (Hack.) Markgr.-Dann., Bot. J. Linn. Soc. 76: 325 (1978).

subsp. ***pallidula*** (Hack.) K. Richt., Pl. Eur. 1: 104 (1890) ≡ *F. varia* subvar. *pallidula* Hack., Monogr. Festuc. Eur.: 174 (1882) ≡ *F. versicolor* subsp. *pallidula* (Hack.) Markgr.-Dann., Bot. J. Linn. Soc. 76(4): 326 (1978).

F. versicolor Tausch, Flora 4: 559 (1821). [s. str.]

sect. ***Aulaxyper*** Dumort., Observ. Gramin. Belg. 104 (1824 [“1823”]), incl. sect. *Rubrae* V. I. Krecz. & Bobrov in V. L. Komarov, Fl. URSS 2: 517 (1934), incl. *Vulpia* C. C. Gmel., Fl. Bad. Alsat. 1: 8 *(*1805) p. p., typo excl.
Type: *Festuca rubra* L. (Catalán & al. 2007: 402).

Included taxa:

Species not assigned at series rank:

F. heterophylla Lam., Fl. Franç. 3: 600 (1779).

F. bromoides L., Sp. Pl. 1: 75 (1753) ≡ *Vulpia bromoides* (L.) Gray, Nat. Arr. Brit. Pl. 2: 124 (1821).

ser. ***Rubrae*** V. I. Krecz. & Bobrov in V. L. Komarov, Fl. URSS 2: 517 (1934) (*F. rubra* agg.).
Type: *F. rubra* L.

– ser. *Rubrae* s. str. (= Eu-Rubrae) Janchen & Markgr.-Dann., Cat. Fl. Austr. I, 4: 802 (1960 [“1959”]), nom. nud.

F. rubra L., Sp. Pl. 1: 74 (1753).

subsp. ***rubra***

subsp. ***megastachys*** Gaudin, Fl. Helv. 1: 287 (1828).
= subsp. *fallax* (Thuill.) Nym., Consp. Fl. Eur.: 827 (1882).
= *F. heteromalla* Pourr., Hist. & Mém. Acad. Roy. Sci. Toulouse 3: 319 (1788).

subsp. ***juncea*** (Hack.) K. Richt., Pl. Eur. 1: 99 (1890).

subsp. ***litoralis*** (G. Mey.) Auquier, Bull. Jard. Bot. Natl. Belg. 36: 191 (1968).

subsp. ***asperifolia*** (St.-Yves) Markgr.-Dann., Veröff. Geobot. Inst. E. T. H. Stiftung Rübel Zürich 56: 143 (1976) ≡ *Festuca trichophylla* subsp. *asperifolia* (St.-Yves) Al-Bermani, Anales Jard. Bot. Madrid 50: 219 (1992).

F. nigrescens Lam., Encycl. 2: 460 (1788).

F. trichophylla (Ducros ex Gaudin) K. Richt., Pl. Eur. 1: 100 (1890).

sect. ***Loretia*** [*]

The broad circumscription of this section (including subsect. *Exaratae* St.-Yves, Candollea 1: 21, 1922) reflects the sparse molecular phylogenetic knowledge of the taxa placed here (primarily according to Inda & al. 2008). As far as it is currently known, this section is monophyletic. A further subdivision into monophyletic units at subsectional rank would be possible.

Included taxa:

Species not assigned at series rank:

F. maritima L., Sp. Pl. 1: 75 (1753).

= *Vulpia unilateralis* (L.) Stace, Bot. J. Linn. Soc. 76: 350 (1978).

F. geniculata (L.) Lag. & Rodr., Anales Ci. Nat. 6: 150 (1803) ≡ *Vulpia geniculata* (L.) Link, Hort. Berol. 1: 148 (1827) ≡ *Bromus geniculatus* L., Mant. Pl.: 33 (1767).

F. ligustica (All.) Bertol., Opusc. Sci. 1: 64 (1817) ≡ *Bromus ligusticus* All., Fl. Pedem. 2: 249 (1785) ≡ *Vulpia ligustica* (All.) Link, Hort. Berol. 1: 148 (1827).

F. amethystina L., Sp. Pl. 1: 74 (1753).

subsp. ***amethystina***

subsp. ***nemoralis*** [*] (– subsp. *ritschlii*)

ser. ***Violaceae*** [**] (*F. violacea* agg.)

F. picturata Pils, Pl. Syst. Evol. 136: 92 (1980).

F. norica (Hack.) K. Richt., Pl. Eur. 1: 99 (1890).

F. nigricans (Hack.) K. Richt., Pl. Eur. 1: 99 (1890).

F. nitida Kit. ex Schult., Oestr. Fl., ed. 2, 1: 239 (1814).

sect. ***Micropyrum*** (Gaudin) Asch. & Graebn., Syn. Mitteleur. Fl. 2: 537 (1900) ≡ *Triticum* sect. *Micropyrum* Gaudin, Fl. Helv. 1: 366 (1828) ≡ *Micropyrum* (Gaudin) Link, Linnaea 17: 397 (1843).
Type: *F. lachenalii* (C. C. Gmel.) Spenn. (1829).
= *Festuca* sect. *Nardurus* (Bluff, Nees & Schauer) W. D. J. Koch, Syn. Fl. Germ. Helv.: 809 (1837) ≡ *Brachypodium* sect. *Nardurus* Bluff, Nees & Schauer, Comp. Fl. German. ed. altera 1: 193 (1836).

Included taxon:

F. lachenalii (C. C. Gmel.) Spenn., Fl. Friburg. 3: 1050 (1829) ≡ *Triticum lachenalii* C. C. Gmel., Fl. Bad. Alsat. 1: 291 (1805).
= *Micropyrum tenellum* (L.) Link, Linnaea 17: 398 (1843).

sect. ***Vulpia*** (C. C. Gmel.) Endl., Gen. Pl.: 101 (1836) ≡ *Vulpia* C. C. Gmel., Fl. Bad. Alsat. 1: 8 (1805), excl. several species to be transferred to sect. *Aulaxyper* and sect. *Loretia*, incl. *Psilurus* Trin., Fund. Agrost.: 93 (1820).
Type: *Vulpia myuros* (L.) C. C. Gmel., designated by Hitchcock (1920: 28).
= *Mygalurus* Link, Enum. Hort. Berol. 1: 92 (1821).

This genus includes six annual species, the first is *M. caudatus* Link, a synonym of *Vulpia myuros*.

Included taxa:

F. ambigua Le Gall, Fl. Morbihan: 731 (1852).
= *F. danthonii* Asch. & Graebn., Syn. Mitteleur. Fl. 2: 550 (1901), nom. illeg. superfl.
= *F. aetnensis* (Tineo) Walp., Ann. Bot. Syst. 1 :943 (1849), nom. illeg., non C. Presl, Gram. Sicul.: 19 (1818).
= *F. ciliata* Link, J. Bot. (Schrader) 1799(2): 315 (1800), nom. illeg., non Goüan, Hortus Monsp.: 48 (1762) ≡ *F. ciliata* Pers., Syn. Plant 1: 94 (1805) ≡ *F. ciliata* Host, Icon. Descr. Gram. Austriac. 4: 37, t. 65 (1809) ≡ *Vulpia ciliata* Dumort., Observ. Gramin. Belg.: 100 (1824).
= *F. ciliata* Danthoine ex DC., Fl. Franç., ed. 3, 3: 55 (1805), nom. illeg.

subsp. ***ambigua***

subsp. ***ciliata*** [*]

subsp. ***plumosa*** [*]

Note: As noted above, the oldest designation of this taxon as *Festuca ciliata* dates back to Link (1800: 315), but this name is illegitimate, as it had already been introduced by Goüan (1762: 48), also illegitimately for *Brachypodium distachyon*. Persoon (1805: 94) and Host (1809: 37) adopted this name, on which *Vulpia ciliata* is also based. Independently, Danthoine (in Lamarck & Candolle 1805: 55) described this taxon again under the same name.

Since all these names are illegitimate, Ascherson & Graebner (1901: 550–551) re-described this taxon as *Festuca danthonii* with explicit reference to Danthoine and not to Link. The reason given for this was that Link supposedly had another taxon in mind (*F. alopecuros* Schousboe, Iagttag. Vextrig. Marokko: 40 [Kong. Danske Vidensk. Selsk. Skriv. 1800], 1801). However, neither the description nor the specified location "am sandigen Ufer des Douro bei Porto" provide any conclusive indication for this.

"*Festuca ciliata*" is a variable taxon and allows a separation of the Western European *F. ambigua* Le Gall, Fl. Morbihan: 731 (1852), appropriately treated at subspecific rank (Stace & Auquier 1978, Stace 2022).

Ascherson & Graebner (1901: 551) did not take into account that the species name *Festuca ambigua*, which they explicitly mentioned, is legitimate and must not be overlooked. Therefore, it needs to be taken up again and "*Festuca ciliata*" must now be assigned to it at subspecific rank. This also applies to the Eastern Mediterranean subsp. *plumosa*, which was first described by Boissier (1884: 629) at variety rank. The combination at subspecific rank under *Vulpia ciliata* by Faramarzi & al. (2012) was not validly published (Art. 41.5 ICN: Turland & al. 2025). Various slightly different populations described at variety rank (such as var. β *imberbis* Vis., Fl. Dalmat. 1: 75, 1842) do not appear to merit subspecific rank.

Both taxa, subsp. *ambigua* and subsp. *ciliata* appear to be increasingly spreading in Europe as neophytes (Reich & al. 2018, Amarell & Himpel 2025).

F. myuros L., Sp. Pl. 1: 74 (1753) ≡ *Vulpia myuros* (L.) C. C. Gmel., Fl. Bad. 1: 8 (1805).

F. incurva (Goüan) Gutermann, Phyton (Horn) 54: 190 (2014) ≡ *Psilurus incurvus* (Goüan) Schinz & Thell., Vierteljahrsschr. Naturf. Ges. Zürich 58: 40 (1913) ≡ *Nardus incurva* Goüan, Hortus Monsp.: 33 (1762).

sect. ***Festuca***

– "Intravaginales" Hack., Monogr. Festuc. Eur.: 81 (1882), without rank.

– sect. *Amnopoa* Dumort., Observ. Gramin. Belg.: 102 (1824 ["1823"]), nom. inval. (Art. 22.2 ICN: Turland & al. 2025).

Included taxa:

ser. ***Hallerianae*** [**] (*F. halleri* agg.)

F. stenantha (Hack.) K. Richt., Pl. Eur. 1: 96 (1890).

F. pseudodura Steud., Syn. Pl. Glumac. 1: 306 (1854).

F. halleri All., Fl. Pedem. 2: 253 (1785).

F. intercedens Lüdi ex Bech., Ber. Schweiz. Bot. Ges. 50: 388 (1940).

F. rupicaprina (Hack.) A. Kern., Sched. Fl. Exs. Austro-Hung. 3: 145 (1884).

F. alpina Suter, Helvet. Fl. 1: 55 (1802).

F. austrodolomitica Pils & F. Prosser, Pl. Syst. Evol. 195: 188 (1995).

The following two series jointly comprise *F. ovina* agg. s. lat.:

ser. ***Sulcatae*** V. I. Krecz. & Bobrov in V. L. Komarov, Fl. URSS 2: 508 (1934) (*F. valesiaca* agg.).

Type: *F. ovina* [subsp. *sulcata*] var. *pseudovina* Hack., Monogr. Fest.: 102 (1882) (= *F. valesiaca* subsp. *parviflora*).
= ser. *Valesiacae* Pawlus, Fragm. Florist. Geobot 29: 276 (1985 [“1983”]).
– ser. *Valesiacae* Janchen & Markgr.-Dann., Cat. Fl. Austr. I, 4: 803 (1960 [“1959”]) nom. nud.

Incl. ser. *Trachyphyllae* Pawlus, Fragm. Florist. Geobot 29: 246 (1985 [“1983”]) = ser. *Duriusculae* V. I. Krecz. & Bobrov in V. L. Komarov, Fl. URSS 2: 507 (1934), sensu descr., non sensu typi!

F. valesiaca Schleich. ex Gaudin, Agrost. Helv. 1: 242 (1811).

subsp. ***valesiaca*** (*F. valesiaca* s. str.)

subsp. ***parviflora*** (Hack.) R. Tracey, Pl. Syst. Evol. 128: 291 (1977).
= *F. pseudovina* Hack. ex Wiesb., Österr. Bot. Z. 30: 126 (1880).
= ? *F. pulchra* Schur, Enum. Pl. Transsilv.: 785 (1866).

F. pseudodalmatica Krajina, Acta Bot. Bohem. 8: 61 (1929).

F. stricta Host, Icon. Descr. Gram. Austriac. 2: 62 (1802).

F. trachyphylla (Hack.) R. P. Murray, Flora of Somerset: 418 (1896).

subsp. ***trachyphylla***

subsp. ***brevipila*** [*]

F. rupicola Heuff., Verh. K. K. Zool.-Bot. Ges. Wien 8: 233 (1858).

F. javorkae Májovský, Acta Fac. Rer. Nat. Univ. Comen., Bot., 7: 325 (1962) (s. str., excl. *F. wagneri*).

Note: *Festuca javorkae* shall refer to a tetraploid species, mainly from the sandy area of Čenkov, southern Slovakia, but it is illegitimate, as it includes the validly published *F. wagneri* (Degen, Thaisz & Flatt) Krajina (1929). For this reason it is noted here that *F. wagneri* should be explicitly excluded when applying this name.

The proposed replacement name *Festuca majovskyi* Holub, Folia Geobot. Phytotax. 18: 204 (1983) is typified with a specimen belonging to *F. rupicola* (Šmarda 2008) and thus is also inapplicable for this taxon.

If proposed as a hybrid (*Festuca rupicola* × *F. vaginata*, as Šmarda 2008 did), *F.* ×*interjecta* J. Vetter, Sitzungsber. Verh. K. K. Zool. Bot. Ges. Wien, 67: (175)–(176) (1917) must be taken into consideration, but it is also inapplicable: This name was correctly lectotypified by Foggi & al. (2017) with a specimen from Oberweiden, Sandberg in Lower Austria (W0102251), however, its attribution remains doubtful. From a morphological perspective a spontaneous hybrid *F. vaginata* × *F. valesiaca* subsp. *parviflora* is more likely. This hybrid was already recognized by Hackel (1882: 98) and named as *Festuca* ×*hackelii* by Richter (1890: 101); the plants on the type sheets W0366171 and W0366172, “In colle aprico arenoso: Türkenschanze prope Viennam inter parentes, Majo 1880, leg. Ed. Hackel” (in his own handwriting) correspond with the type material of *F.* ×*interjecta*, thus making the latter name illegitimate.

Since there is no legitimate name available for this taxon, detailed investigations should result in a new description.

F. bauzanina (Pils) S. Arndt, Pl. Syst. Evol. 271: 135 (2008).

F. laevigata Gaudin, Alpina 3: 60 (1808), s. lat., incl. *F. bauzanina* subsp. *rhaetica* S. Arndt, Pl. Syst. Evol. 271: 136 (2008) and *F. guinochetii* (Bidault) S. Arndt, Pl. Syst. Evol. 271: 136 (2008) – detailed investigations are currently in progress, thus nomenclatural changes are deferred for now.

ser. ***Festuca*** (*F. ovina* agg. s. str.)
– ser. *Ovinae* V. I. Krecz. & Bobrov in V. L. Komarov, Fl. URSS 2: 503 (1934) nom. inval. (Art. 22.2 ICN).
– ser. *Ovinae* Pawlus, Fragm. Florist. Geobot 29: 228 (1985 [“1983”]) nom. inval. (Art. 22.2 ICN).
– ser. *Vulgares* Janchen & Markgr.-Dann., Cat. Fl. Austr. I, 4: 803 (1960 [“1959”]) nom. inval. (Art. 22.2 ICN).

Incl. ser. *Psammophilae* Pawlus, Fragm. Florist. Geobot 29: 259 (1985 [“1983”]), incl. ser. *Supinae* V. I. Krecz. & Bobrov in V. L. Komarov, Fl. URSS 2: 504 (1934), incl. ser. *Duriusculae* V. I. Krecz. & Bobrov in V. L. Komarov, Fl. URSS 2: 507 (1934) p. p.

Included taxa:

F. ovina L., Sp. Pl. 1: 73 (1753), s. str.

F. filiformis Pourr., Hist. & Mém. Acad. Roy. Sci. Toulouse 3: 319 (1788).

F. guestfalica Boenn. ex Rchb., Fl. Germ. Excurs.: 1403 (1831).

At species rank, this name has priority for a complex of tetraploid sheep fescues. It includes various taxa of different distribution areas and from various substrates, which are best placed at subspecific rank, as mentioned by Boeuf & al. (2022: tab. 7). As far as recently known, taxa included here grow

● on calcareous rocks: subsp. *guestfalica*, locally in the Sauerland area;

● on ultramafic sites: subsp. *ophioliticola*, at species rank *F. ophioliticola* Kerguelen (1975), in northwestern France;

● on acidic and intermediate soils, also on heavy metal ore outcrops: subsp. *calaminaria*, at species rank *F. aquisgranensis* Patzke & G. Brown (1990) = ? *F. medioeuropaea* Boeuf & Portal (2024), in western Central Europe;

● on acidic to moderately alkaline sites: subsp. *hirtula*, at species rank *F. hirtula* (Hack. ex Travis) Kerguélen (1982), in Western Europe, and

● predominantly on acidic sites, *F. ovina* subsp. *firmula* (Hack.) K. Richt. (1890), in Central Europe as far as to the Alps. However, the basionym *Festuca ovina* subvar. *firmula* Hack. (Monogr. Festuc. Eur.: 87, 1882) was recently typified by Foggi & al. (2023: 107) with a specimen from Chinon, Dept. Indre-et-Loire, Loire valley, France, ex Herb. Hackel (W 1916-0012530), and this is exactly the same sheet Wilkinson & Stace (1988: 290) designated as the neotype for the hexaploid Western European taxon *Festuca lemanii* Bastard (1809). For this widespread Central European tetraploid taxon, Boeuf & al. (2022) proposed *F. kerneri* J. Vetter, Verh. Zool. Bot. Ges. Wien 72: 111 (1923) at species rank. However, this was described as a hybrid taxon. The protologue contains two completely contradictory descriptions, and on the type sheet (W 1947-0013826, Retz, Lower Austria, leg. J. Vetter, 8 June 1919) two different, overgrown individuals

are mounted, one representing the taxon under concern, the other *Poa angustifolia*, making this name inapplicable. Further on, a treatment of all of these taxa at species rank (Boeuf & Portal 2024) seems to be not appropriate (see also Englmaier 1995 and Gregor & al. 2023).

F. eggleri R. Tracey, Pl. Syst. Evol. 128: 290 (1977).

F. airoides Lam., Encycl. 2: 464 (1788).

F. supina Schur, Enum. Pl. Transsilv.: 784 (1866).

F. vivipara (L.) Sm., Comp. Fl. Brit. 1: 114 (1800).

F. vaginata Waldst. & Kit. ex Willd., Enum. Pl. Hort. Berol.: 116 (1809).

subsp. ***vaginata***

subsp. ***dominii*** (Krajina) Soó, Magyar Növényvilág Kézikönyve 2: 921 (1951), incl. *F. psammophila* (Hack. ex Čelak.) Fritsch, Excursionsfl. Österr: 64 (1897).

F. pallens Host, Icon. Descr. Gram. Austriac. 2: 63 (1802), s. lat.

F. csikhegyensis Simonk., Magyar Bot. Lapok 5: 377 (1906).

F. glaucina Stohr, Schlechtendalia 7: 29 (2001) (– *F. pallens* subsp. *scabrifolia* auct.).

F. heteropachys (St.-Yves) Patzke ex Auquier, Nouv. Fl. Belg., Grand-Duché Luxemb., Nord France: 759 (1973).

Nomenclatural novelties

Lolium subg. ***Hesperochloa*** (Piper) Englmaier, **comb. nov.**
Basionym: *Festuca* subg. *Hesperochloa* Piper, Contr. U. S. Natl. Herb. 10(1): 40 (1906).
Type: *Festuca confinis* Vasey, Bull. Torrey Club 11: 126 (1884), nom. illeg. = *Poa kingii* S. Watson in C. King (ed.): US geol. exploration of the fortieth parallel 5: 387 (1871) ≡ *Festuca kingii* (S. Watson) Cassidy, Bull. Colorado Agric. Exp. St. 12: 36 (1890).

Lolium spectabile (Jan ex Bertol.) Englmaier, **comb. nov.**
Basionym: *Festuca spectabilis* Jan ex Bertol., Fl. Ital. 1: 612 No. 7 (1834) ≡ *Leucopoa spectabilis* (Jan ex Bertol.) H. Scholz & Foggi, Willdenowia 35: 243 (2006).
= *Festuca sieberi* Tausch, Flora 20: 127 (1837).
= *Festuca nemorosa* Dalla Torre & Sarnth., Fl. Tirol 6: 272 (1906).
– *Festuca spectabilis* Jan, Elench. Pl. 2 (1831 [“1827”]), nom. nud.

Lolium spectabile subsp. ***carniolicum*** (Hack.) Englmaier, **comb. nov.**
Basionym: *Festuca spectabilis* var. *carniolica* Hack., Monogr. Festuc. Eur.: 189 (1882) ≡ *Festuca spectabilis* subsp. *carniolica* (Hack.) Hayek, Repert. Spec. Nov. Regni Veg. 30: 288 (1932).

Lolium spectabile subsp. ***affine*** (Hack.) Englmaier, **comb. nov.**
Basionym: *Festuca affinis* Hack., Exsicc. (Fl. Graec.) 1852: n.° 2776 (1852) ≡ *Festuca spectabilis* subsp. *affinis* (Hack.) Hack., Monogr. Festuc. Eur.: 189 (1882).

= *Festuca croatica* A. Kerner, Sched. Fl. Exs. Austro-Hung. 1: 105 (1881) ≡ *Leucopoa spectabilis* subsp. *croatica* (A. Kerner) Foggi, Parolo, Gr. Rossi, Ardenghi & Quercioli, Inform. Bot. Ital. 42: 351 (2010).

Lolium pulchellum (Schrad.) Englmaier, **comb. nov.**
Basionym: *Festuca pulchella* Schrad., Fl. Germ. 1: 336 (1806).

Lolium pulchellum subsp. ***juranum*** (Gren.) Englmaier, **comb. nov.**
Basionym: *Festuca pulchella* var. *jurana* Gren., Mém. Soc. Émul. Doubs, sér. 3, 10: 925 (1864) ≡ *F. pulchella* subsp. *jurana* (Gren.) Markgr.-Dann., Nachheft Ber. Internat. Fachtagung Pflanzensoziologie. Gumpenstein: Bundesversuchsanst. Alpenländ. Landw.: 342 (1981 [“1979”]).
= *F. pulchella* subvar. *plicata* (Huter) Hack., Monogr. Fest. Europ: 192 (1882).
= *F. pulchella* var. *angustifolia* (Ducomm.) Becherer, Ber. Schweiz. Bot. Ges., 37: 159 (1928).

Lolium subg. ***Subbulbosae*** (Nyman ex Hack.) Englmaier, **comb. et stat. nov.**
Basionym: *Festuca* sect. *Subbulbosae* Nyman ex Hack., Bot. Centralbl. 8: 413 (1881) ≡ *Festuca* [unranked] *Subbulbosae* Nyman in Syll. Fl. Eur.: 417 (1854).
= *Patzkea* G. H. Loos in Jahrb. Bochum. Bot. Vereins 1: 126 (2010) p. p.
Type: *Festuca spadicea* L., Syst. Nat., ed. 12. 2: 732 (1767) = *F. paniculata* (L.) Schinz & Thell., Vierteljahrsschr. Naturf. Ges. Zürich 58: 40 (1913), s. lat. (Lectotype designated by Müller & Catalán 2006).

Lolium paniculatum (L.) Englmaier, **comb. nov.**
Basionym: *Anthoxanthum paniculatum* L. in Sp. Pl. 1: 28 (1753) ≡ *Festuca paniculata* (L.) Schinz & Thell., Vierteljahrsschr. Naturf. Ges. Zürich 58: 40 (1913) ≡ *Patzkea paniculata* (L.) G. H. Loos, Jahrb. Bochum. Bot. Vereins 1: 126 (2010).

Lolium arundinaceum subsp. ***uechtritzianum*** (Wiesb.) Englmaier, **comb. nov.**
Basionym: *Festuca uechtritziana* Wiesb., Österr. Bot. Z. 28: 218 (1878) ≡ *Festuca arundinacea* subsp. *uechtritziana* (Wiesb.) Hack. ex Hegi., Ill. Fl. Mitt.-Eur. 1: 345 (1908).

Note: “*Lolium arundinaceum* subsp. *uechtritzianum* (Wiesb.) M. Hassler”, Fl. Germ. 1: 405 (2022) is not validly published (lacking a clear and full reference to the basionym, Art. 41.5 ICN).

Occasionally, a further citation “*Lolium arundinaceum* subsp. *uechtritzianum* (Wiesb.) B. Bock” is found. Its source is an entry No. 166667 in a database provided by Tela Botanica (BDTFX 2024), assigned as a “proposed new combination”, without a basionym citation and without any bibliographic reference. This does not meet the requirements for an effectively and validly published name according to Art. 29.1, 30.2 and 36.1(a) ICN (Turland & al. 2025).

Lolium sect. ***Plantynia*** (Dumort.) Englmaier, **comb. nov.**
Basionym: *Schedonorus* sect. *Plantynia* Dumort., Fl. Belg. Prodr.: 159 (1827) ≡ *Festuca* sect. *Plantynia* (Dumort.) Tzvelev, Zlaki SSSR: 394 (1976).
= *Drymonaetes* Ehrh., Beitr. Naturk. 4: 147 (1789), validated by Fourreau in Ann. Soc. Linn. Lyon n. ser. 17: 187 (1869) by adding *D. gigantea* as the first element.

Type: *Festuca gigantea* (L.) Vill., Hist. Pl. Dauph. 2: 110 (1787), the only species mentioned by Dumortier.

Lolium rigidum subsp. ***loliaceum*** (Bory & Chaubard) Englmaier, **comb. et stat. nov.**
Basionym: *Rottboellia loliacea* Bory & Chaubard, Exp. Sci. de Morėe 3 Bot., Paris: 46, Pl. 3 fig. 2 (1832) ≡ *Lolium loliaceum* (Bory & Chaubard) Hand.-Mazz., Ann. Naturhist. Mus. Wien 28: 32 (1914).
= *Lolium lepturoides* Boiss., Diagn. Pl. Orient. 13: 67 (1854), nom. illeg. superfl. ≡ *L. rigidum* subsp. *lepturoides* (Boiss.) Sennen & Mauricio, Cat. Fl. Rif Orient.: 135 (1933), comb. illeg.

Festuca ser. ***Variae*** Janchen & Markgr.-Dann. ex Englmaier, **ser. nov.**
– *Festuca* ser. *Variae* Janchen & Markgr.-Dann., Cat. Fl. Austr. I, 4: 802 (1960 ["1959"]), nom. nud., validated here:
Type: *F. varia* Haenke in Jacq., Collectanea 2: 94 (1789).
Description: Innovation shoots strictly intravaginal. Ligule visible, at minimum 0.5 mm long, membranaceous. Leaves convolute, with a sclerenchyma ring, without ribs on the outside, pungent at the tip. Lemmas acute, with scarious margins, usually varicoloured, awnless or with awns less than 0.5 mm long.

Festuca scabriculmis subsp. ***handel-mazzettii*** (Krajina) Englmaier, **comb. et stat. nov.**
Basionym: *Festuca varia* var. *handel-mazzettii* Krajina, Spisy Přír. Fak. Karlovy Univ. 106: 14 (1930).

Festuca varia subsp. ***winnebachensis*** (Wallossek & Markgr.-Dann.) Englmaier, **nomenclatural novelty** [ICN Art. 6.10, Note 5 ICN].
Basionym: *Festuca varia* var. *winnebachensis* Wallossek & Markgr.-Dann., Folia Geobot. Phytotax. 34: 73 (1999) ≡ *Festuca pseudovaria* subsp. *winnebachensis* (Wallossek & Markgr.-Dann.) Joch. Müll., Willdenowia 35: 242 (2005) ≡ *Festuca winnebachensis* (Wallossek & Markgr.-Dann.) Foggi, Gr. Rossi, Parolo & Wallossek, Inform. Bot. Ital. 39: 225 (2007).
= *F. varia* var. *crassifolia* W. D. J. Koch, Syn. Fl. Germ. Helv.: 814 (1837) p. p., nom. illeg. (Krajina 1930, Gutermann 2009).

Festuca sect. ***Loretia*** (Duval-Jouve) Englmaier, **comb. nov.**
Basionym: *Loretia* Duval-Jouve, Rev. Sci. Nat. (Montpellier) sér. 2, 2: 38 (1880) ≡ *Vulpia* sect. *Loretia* (Duval-Jouve) Boiss., Fl. Orient. 5: 630 (1881).
Type: *Loretia geniculata* (L.) Douval-Jouve ≡ *Festuca geniculata* (L.) Lag. & Rodr., Anales Ci. Nat. 6: 150 (1803) (Torrecilla & al. 2004: 130).

Duval-Jouve named four species belonging to his genus: *Loretia setacea* based on *Festuca setacea* Guss.; *L. incrassata* based on *Bromus incrassatus* Lam. (a synonym of *F. geniculata*); *L. geniculata* based on *Bromus geniculatus* L.; and *L. ligustica* based on *Bromus ligusticus* All.

Festuca amethystina subsp. ***nemoralis*** (Ritschl) Englmaier, **comb. et stat. nov.**
Basionym: *Festuca duriuscula* var. [„β"] *nemoralis* Ritschl, Flora des Großherzogthums Posen: 276 (1850).
=? *F. amethystina* var. *cechoslovenica* Krajina, Acta Bot. Bohem. 9: 214 (1930).

– *F. amethystina* var. *ritschlii* Hack. ex Sprib., Z. Bot. Abt. Naturwiss. Vereins Prov. Posen 2: 48 (1895), nom. invalid. This name is not validly published, for two reasons:

● Neither Hackel nor Spribille clearly intended to establish or name this taxon. In a footnote to the mere listing of "*Festuca amethystina* L., non Host" in the main text, Spribille suggested the name "ritschlii" to Hackel only if the latter wished to describe a new variety (Spribille: "Für den ersten Fall schlug ich den Varietätsnamen Ritschlii vor […]"). However, Hackel explicitly rejected this intention (Spribille: "[…] indes hat sich Herr Prof. Hackel für die Erweiterung der Artdiagnose entschieden"). Consequently, the proposed name as well as a description of a new variety in general were not accepted by Hackel. Thus, as specified in Art. 36.1 ICN (Turland & al. 2025), this name is not validly published.

● Spribille clearly cited Ritschl's validly published name at the beginning of his footnote ("= *Festuca duriuscula* L. sp. pl. β *nemoralis* Ritschls in seiner Flora Seite 276"), and this name has priority over any name for this taxon assigned later at the same rank (variety, in accordance to Art. 37.4 ICN: Turland & al. 2025). Thus, Spribille failed to establish a new combination of this name as a variety under *F. amethystina*.

Lacking a validly published basionym, the combination at subspecific rank by Lemke (ex. Markgr.-Dann. in Heywood, Bot. J. Linn. Soc. 76: 327, 1978) is also invalidly published (Art. 6.10 ICN: Turland & al. 2025).

Festuca ser. ***Violaceae*** Janchen & Markgr.-Dann. ex Englmaier, **ser. nov.**
Type: *Festuca violacea* Seringe ex Gaudin, Alpina 3: 57 (1808), **designated here.**
– *Festuca* ser. *Violaceae* Janchen & Markgr.-Dann., Cat. Fl. Austr. I, 4: 802 (1960 [„1959"]), nom. nud., validated here:
Description: Innovation shoots extravaginal. Leaf sheaths closed up to the mouth, leaf cross sections with a single sclerenchyma strand close to each vascular bundle and at the leaf margins, spikelets varicoloured, glossy.

Incl. subsect. *Noricae* Janchen & Markgr.-Dann., Cat. Fl. Austr. I, 4: 802 (1960 ["1959"]), nom. nud.

Festuca ambigua subsp. ***ciliata*** Englmaier, **subsp. nov.**
Holotype: "*Festuca ciliata*" [Hosts handwriting] (W0366091, right side of W-Host 1885-0002234).
Description: Annual, fragile grass, (50) 100–250 (350) mm tall, usually branching at the base. Stems thin, flaccid, usually bent upwards, glabrous or slightly rough towards the top, with 1–2 nodes. Leaves with glabrous sheaths, leaf blades mostly rolled, bristly, smooth on the under side (outer side), short-haired on the upper side (inner side). The uppermost leaf sheath reaches to the panicle and encloses the lower panicle branches. Ligule forming a 0.5 mm wide fringe. Panicle terminal, (25) 50–100 (150) mm long, narrow, straight. Branches short, with 2–5 spikelets. Lowest panicle branch arising immediately above the uppermost stem node. Spikelets (excluding awns) 6–10 mm long, bearing 4–6 (8) flowers. Glumes unequal, the lower one usually atrophied, the upper one 2–3.5 mm long, acute, without an awn. Only the lowest (1) 2 (3) flowers are fertile, of the upper ones only the lemmas are remaining, the paleas are atrophied or absent. Mature spikelets falling out of the glumes as a whole. Lemmas are narrowly linear, those of fertile flowers 4–5 mm long, merging into a 10 mm long, slightly curved awn, those of sterile flowers becoming progressively smaller to the top of the spikelet and their awns are shorter. Lemmas

of the spikelets enclosed in the leaf sheath are only weakly hairy, those of the fertile flowers in free-standing spikelets are long-hairy on the back and ciliate at the margins, those of the sterile flowers are slightly hairy or glabrous on the back, but also ciliate at the margins. The glumes of fertile flowers are almost as long as the lemmas. Flowers are cleistogamous, with 1 stamen. Anthers are 0.5 (–1 mm) mm long. Fruits are 2.5–3 mm long, narrowing at both ends. Growing on gravelly-sandy, acidic, humus-poor soils and in ruderalised locations.
Origin: "In Dalmatiae arenosis, herbidis ad mare: copiose in insula Vergada" (Vrgada, Croatia), as specified in Host (1809: 37), probably collected by F. Portenschlag-Ledermayer.
Note: W0366091 represents the "Typus" of *Vulpia ciliata*, as annotated on the sheet by Lia Pignotti (W) in 2011.

Another collection (W0366092) of the same taxon is mounted on the left side of this sheet (W-Host 1885-0002234), also labelled as "*Festuca ciliata*" by Host and with location details "Ins. Brazza" (Brač, Croatia) in Portenschlag's handwriting.

Festuca ambigua subsp. *ciliata* is newly established here to resolve the confusion with numerous illegitimate names for it, comprising *Festuca ciliata* Danthoine ex DC., Fl. Franç., ed. 3, 3: 55 (1805), nom. illeg., non Goüan, Hort. Monsp.: 48 (1762), *F. aetnensis* (Tineo) Walp., Ann. Bot. Syst. 1: 943 (1849), nom. illeg., non Presl, Gram. Sicul.: 19 (1818), and *F. danthonii* Asch. & Graebn., Syn. Mitteleur. Fl. 2(1): 550 (1901), nom. illeg. superfl. against *F. ambigua* Le Gall, Fl. Morbihan: 731 (1852), as none of these names is suitable as a basionym for a new combination at subspecific rank, according to Art. 6.10 ICN (Turland & al. 2025). The epithet *ciliata* can be legitimately used under *Festuca* at subspecific rank. The description is based on that of *F. danthonii*, slightly modified, corrected and completed, to acknowledge Ascherson & Graebner's precise work (Ascherson & Graebner 1901).

A typification according to Danthoine ex DC., Fl. Franç., ed. 3, 3: 55 (1805): "Elle se trouve sur les Rochers, près Montpellier" was intended, but unfortunately no original material could be found. Therefore, the type of Host, the same as used for the intended typification of *Vulpia ciliata*, was selected; it fully corresponds to the description provided here and all other protologue material given for "*Festuca ciliata*", including tab. 65 in Host (1809). This makes clear, that the assumption of Ascherson & Graebner (1901: 551), the description of Link (1800: 315) and thus also of Host (1809: 37) would refer to *Festuca alopecuros*, is unfounded.

Festuca ambigua subsp. ***plumosa*** (Boiss.) Englmaier, **comb. nov.**
Basionym: *Vulpia ciliata* var. ["β"] *plumosa* Boiss., Fl. Orient. 5: 629 (1884).

Festuca ambigua var. ***imberbis*** (Vis.) Englmaier, **comb. nov.**
Basionym: *Vulpia ciliata* var. ["β"] *imberbis* Vis., Fl. Dalmat. 1: 75 (1842).

Festuca ser. ***Hallerianae*** Janchen & Markgr.-Dann. ex Englmaier, **ser. nov.**
Type: *Festuca stenantha* (Hack.) K. Richt., Pl. Eur. 1: 96 (1890), **designated here**.
– *Festuca* ser. *Hallerianae* Janchen & Markgr.-Dann., Cat. Fl. Austr. I, 4: 802 (1960 ["1959"]), nom. nud., validated here:
Description: Innovation shoots intravaginal. Leaf sheaths closed up to the mouth, auriculate at their edges, leaf cross sections with 3(–5) single sclerenchyma strands, awns length nearly half of their lemma or longer.

Incl. ser. *Glaciales* Janchen & Markgr.-Dann., Cat. Fl. Austr. I, 4: 802 (1960 ["1959"]), nom. nud., incl. ser. *Alpinae* Janchen & Markgr.-Dann., Cat. Fl. Austr. I, 4: 802. (1960 ["1959"]), nom. nud.

Festuca trachyphylla subsp. ***brevipila*** (R. Tracey) Englmaier, **comb. et stat. nov**.
Basionym: *Festuca brevipila* R. Tracey, Pl. Syst. Evol. 128: 287–289 (1977).

Conclusion

Considering the latest predominantly molecular phylogenetic studies on the *Festuca-Lolium* complex and in view of the fact that these have been regarded in very different ways in the floras of Central European countries, it was essential to find a logically structured, consistent taxonomic solution that largely meets phylogenetic requirements. The continuation of the concept introduced by Darbyshire (1993), integrating the broad-leaved *Festuca* species into *Lolium*, made it possible to maintain a subdivision into the two genera *Lolium* and *Festuca*, with a few well-defined and monophyletic basal groups excluded. In the flora of Austria, however, this only applies to the genus *Drymochloa*, with two indigenous species, *D. sylvatica* (= *Festuca altissima*) and *D. drymeja* (= *Festuca drymeja*).

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