

Alien grasses (Poaceae) in the flora of the Eastern Alps: First supplement

Peter ENGLMAIER

Faculty of Life Sciences, University of Vienna, Althanstraße 14, 1090 Vienna, Austria; e-mail:
peter.franz.josef.englmaier@univie.ac.at

Gräser-Neophyten (Poaceae) in der Flora der Ostalpen: Erster Nachtrag

Key words: alien plants; distribution; naturalization; invasive species; taxonomy

Introduction

Knowledge on non-native grasses is perpetually increasing; thus, an overview like ENGLMAIER & WILHALM (2018) needs periodic updates. This first supplement reports several taxonomical and nomenclatural notes as well as previously overlooked or recently published observations.

Taxonomical and nomenclatural remarks

Merging or splitting established genera due to new evolutionary insights may cause taxonomical and nomenclatural problems, mostly with homonyms or unclear circumscription of taxa. In the recent past, one of these problems discussed here (the *Cenchrus orientalis-setaceus* complex) was even a subject of EU regulations (EUROPEAN UNION 2017).

When merging *Pennisetum* with *Cenchrus*, several nomenclatural problems were already mentioned in ENGLMAIER & WILHALM (2018). *Cenchrus americanus* has to be used instead of *Pennisetum glaucum* and *Cenchrus purpurascens* instead of *Pennisetum alopecuroides*, non *Cenchrus alopecuroides* Thunb.

Cenchrus longisetus has to be used instead of *Pennisetum villosum* R.Br. ex Fresen. in Mus. Senckenberg. 2: 134 (1837) and, based on the latter, the illegitimate name *Cenchrus villosus* (R.Br. ex Fresen.) Kuntze, Revis. Gen. Pl. 3(3): 347 (1898), non (Spreng.) Spreng., Syst. Veg. 1: 301 (1824) ≡ *Anthephora villosa* Spreng., Neue Entd. 3: 14 (1822) = *Anthephora hermaphrodita*.

For the South African *Cenchrus macrourus* ≡ *Pennisetum macrourum* Trin., Gram. Panic.: 64 (1826), *Cenchrus caudatus* (Schrad.) Kuntze, Revis. Gen. Pl. 3(3): 346 (1898) ≡ *Gymnotrix caudata* Schrad. in Gött. Gel. Anz. 1821(3): 2073 (1821) has priority. A lectotype has not yet been designated.

As *Cenchrus setaceus* (*Pennisetum setaceum*, *P. ruppelii*) is only known as an invasive neophyte in the Mediterranean area of Europe, the North African–Near Eastern ***Cenchrus orientalis-setaceus*** complex was not mentioned in ENGLMAIER & WILHALM (2018). Nevertheless, seeds and adult plants labelled as *C. setaceus* are commercially available everywhere in Europe, so this species is discussed in ENGLMAIER & MÜNCH (2019). It is also a subject of EU regulations (EUROPEAN UNION 2017). In contrast, most of the red-leaved cultivars, occasionally confused with *C. setaceus* but commonly ascribed to *C. orientalis* (*Pennisetum orientale*, *P. triflorum*) or *C. advena* (*Pennisetum advena*), seem to be apomictic and partially sterile, thus of limited distribution. They have a long tradition of cultivation for ornamental use. In rejection of the EU regulations (EUROPEAN UNION 2017), several horticultural communities such as ZVG (2017) mentioned studies conducted in the Netherlands (without any citations) to consolidate their arguments that red-leaved cultivars of the *Cenchrus orientalis-setaceus* complex are not invasive. For *C. advena*, a cultivar from horticultural areas in College Station (Texas) and described as a new species by WIPFF & VELDKAMP (1999), a hybridogenous origin and possible identity with *Cenchrus ×cupreus* (*Cenchrus elegans* × *setaceus*) are still in dispute. Following VELDKAMP (2014), its characteristics, despite its reddish colour, correspond to *C. orientalis*, and, as expected, not to *C. setaceus* (for details see ENGLMAIER & MÜNCH 2019). *Cenchrus orientalis* and *C. setaceus* are not only different in their ploidy (*C. orientalis* is di-, tetra- and hexaploid, *C. setaceus* is apparently diploid; VELDKAMP 2014) but are also well-separated in molecular phylogenetic studies (CHEMISQUY & al. 2010). *Cenchrus advena* is assumed to be hexaploid, thus a further criterion for its conspecificity with *C. orientalis* (DUJARDIN & HANNA, 1984 sub nom. “*Pennisetum macrostachyum*”), but only molecular phylogenetic investigations can clarify its relationships within the *C. orientalis-setaceus* complex. Unfortunately, none of the published studies on molecular phylogenetics of *Pennisetum/Cenchrus* (DONADÍO & al. 2009, CHEMISQUY & al. 2010, ROBERT & al. 2011) was dealing with these problems.

Cenchrus spinifex was proposed as the valid name for *Cenchrus incertus* by SIMON (2010) and VERLOOVE & SÁNCHEZ GULLÓN (2012). These proposals should be followed.

As already mentioned in ENGLMAIER & WILHALM (2018), ***Sporobolus*** should be merged with the smaller genera ***Crypsis***, ***Heleochoa*** and ***Spartina*** (PETERSON & al. 2014). *Sporobolus* was conserved against these names (see ICN, App. III: TURLAND & al. 2018). Thus, *Crypsis aculeata* is now validly named *Sporobolus aculeatus*, *Crypsis alopecuroides* (*Heleochoa alopecuroides*) is named *Sporobolus alopecuroides*, and *Crypsis schoenoides* (*Heleochoa schoenoides*) is named *Sporobolus schoenoides* (all of them indigenous in eastern Austria). *Spartina pectinata* (*Spartina michauxiana*) is, as already mentioned in ENGLMAIER & WILHALM (2018), validly named *Sporobolus michauxianus* Bosc ex Link (non *Sporobolus pectinatus* Hack.).

Further observations

Avena strigosa was historically recorded in GRB (Landquart) on sandy soil (SCHILPEROORD & HEISTINGER 2011). Additional information on South Tyrolean (BZ) occurrences is found in RACHEWILTZ (1980: 18–20).

The first record of *Chasmanthium latifolium* for Austria, from North Tyrol (NT), in PAGITZ & LECHNER PAGITZ (2015) was overlooked. Additional records are known from Graz (ST), from abandoned public plantings (S. Leonhartsberger 2018, pers. comm.).

Not any natural stands of *Festuca valesiaca*, neither of subsp. *valesiaca*, nor of subsp. *parviflora* were ever known from Styria (TRACEY 1978, ENGLMAIER 2006). Recently, **hybrids of *Festuca valesiaca* subsp. *parviflora* and subsp. *valesiaca*** have been recorded in Styria (ST) along roadsides (ENGLMAIER 2018b).

The first record of *Melica altissima* for Italy, from Trento (TN), in PROSSER (1996: 215) was overlooked. This is a common garden escape; thus further records can be expected.

Panicum capillare subsp. *capillare* was newly found in the Bavarian Alps (BAV): Landkreis Oberallgäu, Höfen near Steibis (south of Oberstaufen), 10°01'07" E 47°32'13" N (8426/3); 740 msm; roadside; Peter Englmaier: 27 July 2018 (Hb. P. Englmaier.)

The record of *Psathyrostachys juncea* from BZ (WILHALM & SCHOLZ 2000) was missing. This is an ephemeral, perennial neophyte locally introduced with seed mixtures.

The following observations have been recently published: *Festuca danthonii* (*Vulpia ciliata*), new – but not explicitly mentioned – for Burgenland (B): REICH & al. (2018), corrected in GILLI & al. (2019); *Festuca rubra* subsp. *litoralis*, new for Styria (ST): ENGLMAIER (2018a); *Nassella tenuissima*, new for Upper Austria (O): HOHLA (2018a); *Sporobolus neglectus*, new for Styria (ST): KNIELY (2018) and *Sporobolus vaginiflorus*, new for Styria (ST): HOHLA (2018b).

The latest additions to the alien grass flora of Austria provided by different authors can be found in GILLI & al. (2019) in this volume: *Glyceria grandis*: new for Styria (ST); *Lolium rigidum* subsp. *rigidum*: new for Lower Austria (N) and Vienna (W); *Miscanthus sinensis*: new for Lower Austria (N) and Vienna (W); *Panicum dichotomiflorum*: new for Lower Austria (N) and Vienna (W); *Phleum paniculatum*: new for Lower Austria (N) and a recent record for Vienna (W); *Setaria faberi*: new for Lower Austria (N) and Vienna (W); *Setaria viridis* subsp. *pynocoma*: new for Vienna (W).

Erratum

Muhlenbergia frondosa was reported from Trento Province (TN) by BERTOLLI & PROSSER (2014). During a critical re-examination, the voucher specimen was revised as *Muhlenbergia mexicana* (T. Wilhalm, pers. comm.), new for TN. Both species are highly confusable. *Muhlenbergia mexicana* seems to be steadily spreading; it was additionally reported from Upper Austria (HOHLA 2018a).

References

- BERTOLLI A. & PROSSER F. (2014 [“2013”]): Segnalazioni floristiche Tridentine IX. – Ann. Mus. Civici-Rovereto **29**: 131–174.
- CHEMISQUY M. A., GIUSSANI L. M., SCATAGLINI M. A., KELLOGG E. A. & MORRONE O. (2010): Phylogenetic studies favour the unification of *Pennisetum*, *Cenchrus* and *Odontelytrum* (Poaceae): A combined nuclear, plastid and morphological analysis, and nomenclatural combinations in *Cenchrus*. – Ann. Bot. (Oxford) **106**: 107–130. <https://doi.org/10.1093/aob/mcq090>
- DONADÍO S., GIUSSANI L. M., KELLOGG E. A., ZUOLAGA F. O. & MORRONE O. (2009): A preliminary molecular phylogeny of *Pennisetum* and *Cenchrus* (Poaceae-Paniceae) based on the *trnL-F*, *rpl16* chloroplast markers. – Taxon **58**: 392–404. <https://doi.org/10.1002/tax.582007>
- DUJARDIN M. & HANNA W. (1984): Microsporogenesis, reproductive behavior, and fertility in five *Pennisetum* species. – Theor. Appl. Genet. **67**: 197–201. <https://doi.org/10.1007/BF00317033>
- ENGLMAIER P. (2006): *Festuca* (Schwingel). – In MAURER W. (Hrsg.), SCHEUER C. (Red.): Flora der Steiermark **II/2**: 155–169. – Eching bei München: IHW-Verlag.
- ENGLMAIER P. (2018a): *Festuca rubra* subsp. *litoralis* (Poaceae). – In ZERNIG K., BERG C., BURKARD R., ENGLMAIER P., HEBER G., HOHLA M., KNIELY G., NOWOTNY G., PÖTL M. & WENDELIN I.: Bemerkenswertes zur Flora der Steiermark 6. – Joannea Bot. **15**: 225–226.
- ENGLMAIER P. (2018b): *Festuca valesiaca-pseudovina*-Übergangspopulationen (Poaceae). – In ZERNIG K., BERG C., BURKARD R., ENGLMAIER P., HEBER G., HOHLA M., KNIELY G., NOWOTNY G., PÖTL M. & WENDELIN I.: Bemerkenswertes zur Flora der Steiermark 6. – Joannea Bot. **15**: 226–227.
- ENGLMAIER P. & MÜNCH M. (2019): Potentiell verwilderungsfähige Gräserarten aus dem Zierpflanzen- und Saatguthandel: Steht die nächste Invasionswelle vor der Türe? – Neilreichia **10**: 97–125.
- ENGLMAIER P. & WILHALM T. (2018): Alien grasses (Poaceae) in the flora of the Eastern Alps: Contribution to an excursion flora of Austria and the Eastern Alps. – Neilreichia **9**: 177–245.
- EUROPEAN UNION (2017): Commission Implementing Regulation (EU) 2017/1263 of 12 July 2017 updating the list of invasive alien species of Union concern established by Implementing Regulation (EU) 2016/1141 pursuant to Regulation (EU) No 1143/2014 of the European Parliament and of the Council. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2017.182.01.0037.01.ENG [accessed 15 Jan 2019].
- GILLI C., PACHSCHWÖLL C. & NIKLFELD H. (Eds.) (2019): Floristische Neufunde (305–375). – Neilreichia **10**: 197–274.
- HOHLA M. (2018a): *Physalis grisea* und *Sedum pallidum* neu für Österreich sowie weitere Beiträge zur Adventivflora von Österreich. – Stapfia **109**: 25–40.
- HOHLA M. (2018b): *Sporobolus vaginiflorus*, Scheiden-Samenwerfergras (Poaceae). – In ZERNIG K., BERG C., BURKARD R., ENGLMAIER P., HEBER G., HOHLA M., KNIELY G., NOWOTNY G., PÖTL M. & WENDELIN I.: Bemerkenswertes zur Flora der Steiermark 6. – Joannea Bot. **15**: 234–235.
- KNIELY G. (2018): *Sporobolus neglectus*, Verkanntes Samenwerfergras (Poaceae). – In ZERNIG K., BERG C., BURKARD R., ENGLMAIER P., HEBER G., HOHLA M., KNIELY G., NOWOTNY G., PÖTL M. & WENDELIN I.: Bemerkenswertes zur Flora der Steiermark 6. – Joannea Bot. **15**: 234.
- PAGITZ K. & LECHNER PAGITZ C. (2015): Neues zur Neophytenflora Nord- und Osttirols (Österreich). – Neilreichia **7**: 29–44.
- PETERSON P. M., ROMASCHENKO K., HERRERA ARRIETA Y. & SAARELA J. M. (2014): A molecular phylogeny and new subgeneric classification of *Sporobolus* (Poaceae: Chloridoideae: Sporobolinae). – Taxon **63**: 1212–1243. <https://doi.org/10.12705/636.19>
- PROSSER F. (1996): Segnalazioni floristiche Tridentine. V. – Ann. Mus. Civici-Rovereto **11**: 201–230.
- RACHEWILTZ S. W. (1980): Brot im südlichen Tirol. – Arunda, Südtiroler Kulturzeitschrift **10a**. – Innsbruck: Studienverlag.
- REICH D., BARTA T., PILSL P. & SANDER R. (2018): Beitrag zur Kenntnis der Gattung *Vulpia* (Poaceae) in Österreich mit besonderer Berücksichtigung von *Vulpia ciliata*, neu für Wien und Niederösterreich. – Neilreichia **9**: 247–267. <https://doi.org/10.5281/zenodo.1196421>

- ROBERT T., KHALFALLAH N., MARTEL E., LAMY F., PONCET V., ALLINNE C., REMIGEREAU M. S., REKIMA S., LEVEUGLE M., LAKIS G., SILJAK-YAKOVLEV S. & SARR A. (2011): *Pennisetum*. – In KOLE C. (Ed.): Wild crop relatives: Genomic and breeding resources, millets and grasses: pp. 217–255. – Berlin & Heidelberg: Springer. https://doi.org/10.1007/978-3-642-14255-0_13
- SCHILPEROORD P. & HEISTINGER A. (2011): Literaturstudie alpine Kulturpflanzen Vs.5.0.130320. 277 S. (Update vom 20.03.2013). – <https://doi.org/10.13140/RG.2.1.4754.1844>
- SIMON B. K. (2010): New taxa, nomenclatural changes and notes on Australian grasses in the tribe Paniceae (Poaceae: Panicoideae). – *Austrobaileya* **8**: 187–219.
- TRACEY R. (1978): *Festuca ovina* agg. im Osten Österreichs – Bestimmungsschlüssel und kritische Bemerkungen zur Verbreitung und Abgrenzung. – *Not. Fl. Steiermark* **4**: 7–22.
- TURLAND N. J., WIERSEMA J. H., BARRIE F. R., GREUTER W., HAWKSWORTH D. L., HERENDEEN P. S., KNAPP S., KUSBER W.-H., LI D.-Z., MARHOLD K., MAY T. W., MCNEILL J., MONRO A. M., PRADO J., PRICE M. J. & SMITH F. G. (Eds.) (2018): International Code of Nomenclature for algae, fungi, and plants (Shenzhen Code) adopted by the Nineteenth International Botanical Congress Shenzhen, China, July 2017. – *Regnum Veg.* **159**. – Glashütten: Koeltz Botanical Books. <https://doi.org/10.12705/Code.2018> Appendices: <https://naturalhistory2.si.edu/botany/codes-proposals/>
- VELDKAMP J. F. (2014): A revision of *Cenchrus* incl. *Pennisetum* (Gramineae) in Malesia with some general nomenclatural notes. – *Blumea* **59**: 59–75. <https://doi.org/10.3767/000651914X684376>
- VERLOOVE F. & SÁNCHEZ GULLÓN E. (2012): A taxonomic revision of non-native *Cenchrus* s. str. (Paniceae, Poaceae) in the Mediterranean area. – *Willdenowia* **42**: 67–75. <https://doi.org/10.3372/wi.42.42107>
- WILHALM T. & SCHOLZ H. (2000): Ein bemerkenswertes Vorkommen von *Psathyrostachys juncea* und *Agropyron desertorum* (Poaceae) in der inneralpinen Trockenvegetation. – *Ber. Bayer. Bot. Ges.* **69/70**: 7–17.
- WIPFF J. K. & VELDKAMP J. F. (1999): *Pennisetum advena* sp. nov. (Poaceae: Paniceae): a common ornamental grass throughout the southern United States. – *Sida* **18**: 1031–1036.
- ZVG (2017): *Pennisetum setaceum* rubrum ist nicht invasiv. – Zentralverband Gartenbau e.V., Berlin. – Press release Nr. 33/2017, 2017-11-20. https://www.g-net.de/aktuelle_meldung/pennisetum-setaceum-rubrum-ist-nicht-invasiv.html?file=files/download/Pressemeldung/%20ZVG-PM33_17.pdf [accessed 15 Jan 2019].

Received 6 December 2018

Revision received 16 January 2019

Accepted 4 March 2019

Published 30 April 2019

© 2019 P. Englmaier, CC BY 4.0

ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Neilreichia - Zeitschrift für Pflanzensystematik und Floristik Österreichs](#)

Jahr/Year: 2019

Band/Volume: [10](#)

Autor(en)/Author(s): Englmaier Peter F. J.

Artikel/Article: [Alien grasses \(Poaceae\) in the flora of the Eastern Alps: First supplement 185-189](#)