



Typification of four species names published by William Hudson

Javier Fabado¹ & P. Pablo Ferrer-Gallego²

Summary. Based on Hudson's collections sent to Linnaeus and currently preserved at LINN, lectotypes are designated for four species names published by Hudson: *Alopecurus myosuroides*, *Festuca sylvatica* (currently *Brachypodium sylvaticum*), *Polygonum minus* (currently *Persicaria minor*), and *Scutellaria minor*.

Key Words. *Alopecurus myosuroides*, *Brachypodium sylvaticum*, *Festuca sylvatica*, lectotype, *Polygonum minus*, *Scutellaria minor*, typification.

Introduction

William Hudson (1730 – 1793) was a British apothecary and botanist. When Hudson published the first edition of his *Flora anglica* (Hudson 1762), it was the first book on the British flora to use the new system of classification and binomial nomenclature developed by Linnaeus (1753). According to Pulteney (1790), Hudson's *Flora* "marks the establishment of Linnean principles of botany in England". Furthermore, Hudson (1762) seems to have followed the Linnean methodology in using nomen specificum legitimum accompanied by a specific epithet to constitute a binomial and pre-Linnean names as synonyms.

A considerably enlarged edition of this *Flora* appeared 16 years later (Hudson 1778). Unfortunately, an important part of his legacy, such as his notes and the herbarium sheets were destroyed in 1783 because the author's house took fire (see below). Hudson worked at the British Museum Library from 1756 to 1758 (Anonymous 1805) and, as he was Demonstrator of Plants and Praefectus Horti of the Society of Apothecaries in Chelsea between 1765 and 1771 (Stafleu & Cowan 1979), he had excellent access to the contemporary literature (Molina *et al.* 2008; Jarvis 2007).

Currently the Spanish flora has thirty-five Hudson names in use (Pando *et al.* 2020). A third of these names have already been typified (Reveal *et al.* 1991; Röser 1995; Egorova 1999; Nelson 2000; Molina *et al.* 2008; Chiapella 2009; Llamas & Acedo 2019).

In this contribution, four of Hudson's untypified names pertaining to the Iberian flora were closely examined: *Alopecurus myosuroides*, *Festuca sylvatica*, *Polygonum minus* and *Scutellaria minor*. These four names are discussed as part of ongoing studies on the original

material for plants present in the Valencian flora and its related Iberian species. We have found original material for these four names in the Linnean Herbarium at LINN. This material has been traced with the help of a letter sent by Hudson to Linnaeus (see below).

The first edition of *Flora anglica* (Hudson 1762) was published a few months before the first volume of the second edition of Linnaeus's *Species plantarum* (Linnaeus 1762) (Pryor 1881: 74). Therefore, the name *Alopecurus myosuroides*, included in this work, has priority over the Linnean name *A. agrestis* L. The name *Scutellaria minor* is also currently used. Finally, the names *Polygonum minus* and *Festuca sylvatica* are currently accepted, respectively, in the genus *Persicaria* Mill. (\equiv *Persicaria minor* (Huds.) Opiz) (Decraene & Akeroyd 1988; Uotila 2017) and *Brachypodium* P.Beauv. (\equiv *Brachypodium sylvaticum* (Huds.) P.Beauv.) (Saint-Yves 1934; Tateoka 1968; Smith 1980; Schippmann 1991; Catalán & Olmstead 2000; Steinwand *et al.* 2013; Catalán *et al.* 2014, 2016).

Historical background and Hudson's original material

In the *Flora anglica* (1762), Hudson provided for each species a diagnostic phrase name, or *nomen specificum legitimum*, mainly from Linnaeus (1753, 1755, 1759), gave some (generally two or three) earlier polynomials cited as synonyms, especially from a number of pre-Linnean English authors, among them Plukenet (1691), Morison (1699), and Ray (1724).

There is little information about the collectors quoted by Hudson and the materials he consulted. Hudson's collections of insects and original herbarium

Accepted for publication 7 January 2021. Published online 20 April 2021

¹ Jardín Botánico, Universitat de València, C/ Quart 80, 46008, Valencia, Spain. e-mail: Francisco.Fabado@uv.es

² Servicio de Vida Silvestre, Centro para la Investigación y Experimentación Forestal, Generalitat Valenciana, Avda. Comarques del País Valencià 114, 46930, Quart de Poblet, Valencia, Spain.

were totally destroyed by the fire at his house in Panton Street (London) in 1783, caused “by the villainy of a confidential servant” (Dixon 1959). Hudson retired to Jermyn Street (London), actually very near Panton Street. Consequently, there are only scattered specimens in existence, mainly those he had given away to other botanists. The LINN herbarium has the relevant collections because Hudson sometimes gave specimens of his new species to Linnaeus. Also, the BM herbarium contains relevant original material because the collections of Sir Hans Sloane were consulted by Hudson in preparing his *Flora anglica*, at least while he was an assistant librarian of the British Museum (Anonymous 1805), as Hudson himself indicates in the introduction of his work, mentioning the herbaria of Buddle, Petiver and Plukenet, which are in the Sloane Herbarium (Dandy 1958).

Materials and Methods

The designation of the corresponding types is based on the consultation of Hudson’s original material and the relevant literature cited in the respective protologues. As evidenced by a letter sent by Hudson to Linnaeus in 1760 (available at the Linnean Society of London, at <http://linnean-online.org/777771652/>), we can verify the shipment of a package of plants to Linnaeus. The letter lists a total of 76 herbarium sheets, with the names of the plants and a bibliographical reference to Ray (1724).

Through this information, we have been able to correlate these sheets with the names that Hudson published in his *Flora anglica*. This material is available for consultation thanks to digital images provided at JSTOR Global Plants web (available at <http://plants.jstor.org>) and other online sources of these images (http://linnean-online.org/linnean_herbarium.html). Hudson’s original material for the names included in this paper was only found in the Linnaean herbarium at LINN. We have been unable to locate any further original specimens in any herbaria that contain Hudson’s material (e.g., BM, CGE, K, OXF, UPS [Thunberg herbarium]) (see Stafleu & Cowan 1979; Jarvis, 2007). Acronyms are according to Thiers (2020 [continuously updated]).

The typified names are arranged in alphabetic order, followed by homotypic synonyms, indicated with the symbol (\equiv). The currently accepted names are set in bold typeface.

Typifications of the names

Alopecurus myosuroides

Hudson’s protologue (1762: 23) of *Alopecurus myosuroides* consists of the phrase name

“ALOPECURUS spica cylindrica longissima glumis glabris; culmo suberecto” followed by five synonyms: (1) “Gramen myosuroides majus, spica longiore, aristas rectis. R. Syn. 397” (Ray 1724: 397); (2) “Gramen typhoides spica angustiore. Bauh. pin. 4. Th. 53” (Bauhin 1623: 4; 1658: 53); (3) Gramen alopecuroides spica longa majus et minus. Park. 1169” (Parkinson 1640: 1169); (4) “Gramen alopecuroides minus. Ger. Em. 10” (Gerard 1633: 10); and (5) “Gramen myosuroides minus, spica brevior aristas recurvis. R. Syn. 397” (Ray 1724: 397) as an unnamed variety indicated with the Greek letter “ β ”.

The references to Bauhin (1658), Gerard and Parkinson provide illustrations that are original material used by Hudson to describe *Alopecurus myosuroides*, and are identifiable with the species to which this name is generally applied. Gerard’s drawing “Gramen alopecuroides minus” is a complete plant, with leaves and the inflorescence (image available at <https://archive.org/details/herballorgeneral00gera/page/10>). Parkinson’s drawing “Gramen alopecuroides minus spica aspera longa” represents a plant with several leaves and two inflorescences (image available at <https://www.biodiversitylibrary.org/item/256142#page/1193/mode/1up>), and finally Bauhin’s illustration “Gramen typhoides spica angustiore” shows a plant very similar to the illustration published by Parkinson (image available at <https://bibdigital.rjb.csic.es/viewer/12188/?offset=9#page=39&viewer=picture&o=bookmark&n=0&q=>).

In the Linnaean herbarium at LINN, there is a relevant specimen, Herb. Linnaeus No. 82.2 (LINN), which has a label handwritten by Hudson himself, with the number 29, and the same annotation that appears in the above-mentioned letter sent to Linnaeus by Hudson with the same number “29” and “*alopecurus spica cylindrica longissima glabra culmo erecto* Fl. angl. gr. myosuroides R. Syn. 371.1” referring to his *Flora anglica*. In consequence, the protologue, Hudson’s letter sent to Linnaeus, and the specimen at LINN are linked, and therefore the specimen at LINN can be identified as original material on which Hudson based his diagnosis of *Alopecurus myosuroides*. We could not trace any further original material and did not find any effective typification (see e.g. Paunero 1952; Tzvelev 1971; Doğan 1999; Soreng *et al.* 2003).

In conclusion, from among the original elements mentioned, the illustrations of Bauhin, Gerard, Parkinson and the specimen at LINN, we designate the specimen as the lectotype of the name *Alopecurus myosuroides*. This specimen is well preserved, complete and shows several of the diagnostic characters for this taxon: annual herb with leaves 2 – 8 mm wide; upper sheaths somewhat inflated; panicle usually narrowly cylindrical, with glabrous and smooth branches bearing 1 or 2 spikelets; spikelets 4.5 – 7 mm long and

glumes acute; it also matches with the traditional concept and current application of the name *A. myosuroides* (see e.g., Paunero 1952; Tzvelev 1971; Clarke 1980; Doğan 1999; Federov 1999).

The specimen at LINN was previously designated as the lectotype of the Linnaean name *Alopecurus agrestis* (Linnaeus 1762) by Cope (in Cafferty *et al.* 2000). Therefore, both names become homotypic synonyms (see e.g., Pryor 1881; Paunero 1952; Clarke 1980; Jarvis 2007).

***Alopecurus myosuroides* Huds.** (Jan. – June 1762: 23). Lectotype (designated here): Hudson 29, Herb. Linnaeus No. 82.2 (LINN; image available at <http://linnean-online.org/927/>).

≡ *Alopecurus agrestis* L. (Linnaeus, Sept. 1762: 89) ≡ *Tozzettia agrestis* (L.) Bubani (Bubani 1901 – 1902: 274). Lectotype (designated by Cope in Cafferty *et al.* (2000: 245)): Hudson 29, Herb. Linnaeus No. 82.2 (LINN).

Festuca sylvatica

Hudson (1762: 38) described *Festuca sylvatica* providing a short diagnosis “FESTUCA spicata, spiculis alternis subdistichis sessilibus aristatis” followed by three synonyms: (1) “Festuca culmo alternatim spicato, spicis teretibus. Fl. Lapp. 29. Roy lugdb. 67” (Linnaeus 1737: n. 29 [on page 21]; Van Royen 1740: 67); (2) “Festuca graminea nemoratis latifolia mollis. Bauh. Pin. 10” (Bauhin 1623: 10); and (3) “Gramen avenaceum dumetorum spicatum. R. Syn. 394” (Ray 1724: 394). None of these references provides illustrations of this species.

In the Linnaean herbarium at LINN, the specimen Herb. Linnaeus No. 93.47 bears a label handwritten by Hudson: “36 / cum Nova Genera. valvula infer / in arist: rect: terminal / Gramen Avenaceum dumetorum / spicatum R. Syn 394.1”. This specimen consists of three stems, one of them with leaves and flowers (an undeveloped inflorescence), another with only a well-developed inflorescence, and the third stem with only a leaf. The sheet also bears an annotation “non *B. distachyos*” by James Edward Smith.

In the letter sent to Linnaeus by Hudson, under the number 36 appears the same annotation that appears on the label of the specimen at LINN: “Gram. avenaceum dumetorum spicatum R. Syn 394. 1 [...]”. Therefore, this specimen, the letter and the protologue are linked, and the specimen can be identified as Hudson’s original material of *Festuca sylvatica*.

The specimen at LINN is in a good state of preservation, and it matches the traditional concept and the current use of the name (as *Brachypodium sylvaticum* subsp. *sylvaticum*; e.g. Smith 1980; Schippmann 1991), showing some diagnostic features:

stems more than 25 cm tall, erect; raceme 7 – 20 cm long; spikelets terete; glumes acute, lower ones 6 – 9 mm long, upper ones 8 – 11 mm long, shortly aristate.

We have not found any effective typification for this Hudson’s name (see Schippmann 1991; Soreng *et al.* 2003), and we could not trace any further original material in any consulted herbaria (see materials and methods). We designate the specimen at LINN as the lectotype of *Festuca sylvatica*.

Festuca sylvatica Huds. (Hudson 1762: 38) ≡ *Bromus sylvaticus* (Huds.) Lyons (1763: 15) ≡ *Bromus sylvaticus* (Huds.) Pollich (1776: 118) [isonym] ≡ *Triticum sylvaticum* (Huds.) Moench (1777: 54) ≡ *Festuca pinnata* var. *sylvatica* (Huds.) Huds. (Hudson 1778: 48) ≡ *Triticum sylvaticum* (Huds.) Salisb. (Salisbury 1796: 27) ≡ ***Brachypodium sylvaticum* (Huds.) P.Beauv. subsp. sylvaticum** (Palisot de Beauvois 1812: 101) [‘*sylvaticum*’] ≡ *Agropyron sylvaticum* (Huds.) Chevall. (Chevallier 1827: 196) ≡ *Brachypodium pinnatum* var. *sylvaticum* (Huds.) St.-Yves (Saint-Yves 1934: 431) ≡ *Brevipodium sylvaticum* (Huds.) Á.Löve & D.Löve (Löve & Löve 1961: 37). Lectotype (designated here): Herb. Linnaeus No. 93.47 (LINN; image available at <http://linnean-online.org/981/>).

Polygonum minus

The protologue of *Polygonum minus* (Hudson 1762: 148) in Latin “POLYGONUM floribus hexandris digynis, foliis lanceolatis, stipulis ciliatis, caule divaricato patulo” followed by two synonyms “*Persicaria pusilla repens*. Ger. Em. 446. Park. 857. R. Syn 145” (Gerard 1633: 446; Parkinson 1640: 857; Ray 1724: 145), and “*Persicaria minor*. Bauh. Pin. 101. Hist. Ox. II. s. 5. t. 29. f.” (Bauhin 1623: 101; Morison 1680: sect. 5, t. 29, fig. 5).

The references to Gerard, Parkinson and Morison provide illustrations which serve as original materials used by Hudson and are identifiable with the current concept and use of the name. Gerard’s and Parkinson’s drawings, both of them “*Persicaria pusilla repens*” (image available at <https://archive.org/details/herballorgeneral00gera/page/446/mode/2up> and image available at <https://www.biodiversitylibrary.org/item/256142#page/881/mode/1up>), are identical and show a complete plant, with leaves and flowers. Morison’s drawing “*Persicaria minor pusilla repens*” represents a plant with leaves and flowers and three detailed fruits (<https://bibdigital.rjb.csic.es/viewer/14341/?offset=#page=747&viewer=picture&o=bookmark&n=0&q=>).

There is also a specimen, Herb. Linnaeus No. 510.11 (LINN), which bears a label handwritten by

Hudson: “51 / *Persicaria pusilla repens* / R. Syn: 145.2”. In the letter sent by Hudson to Linnaeus, the same reference appears “51 persicaria Syn: 145: 2”. Therefore, the specimen at LINN, Hudson’s letter and the protologue are linked, and the specimen can be identified as original material for *P. minus*. The specimen consists of a stem with leaves and immature flowers. The sheet is also annotated “Hydropiper” by Linnaeus. We designate the specimen at LINN as the lectotype of *Polygonum minus*.

Although the LINN specimen bears inflorescences with flowers at pre-anthesis, it nevertheless shows important diagnostic features: ochreae with long, coarse cilia; leaves 25 – 75 × 4 – 9 mm, usually 6 – 9 times as long as wide, narrowly oblong-lanceolate, subsessile; spikes erect, slender, lax, often interrupted below; perianth without glands and 2 – 2.5 mm long; which distinguish the species from other related taxa (e.g., Webb & Chater 1964; Villar 1990).

Polygonum minus Huds. (Hudson 1762: 148) ≡ *Peutalis minor* (Huds.) Raf. (Rafinesque 1837: 14) ≡ ***Persicaria minor*** (Huds.) Opiz (1852: 72) ≡ *Polygonum persicaria* subsp. *minus* (Huds.) Celak. (Celakovsky 1871: 165). Lectotype (designated here): Herb. Linnaeus No. 510.11 (LINN image available at <http://linnean-online.org/5708/>).

Scutellaria minor

Hudson’s protologue (1762: 232) shows the diagnosis as “SCUTELLARIA foliis cordato-ovatis subintegerrimis floribus axillaribus” followed by three synonyms: (1) “*Cassida palustris minima*, flore purpurascens. Tourn. 182. R. Syn 244” (Tournefort 1719: 182; Ray 1724: 244); (2) “*Lysimachia galericulata minor*. R. Syn II. 132” (Ray 1696: 132); and (3) “*Gratiola latifolia*. Ger. Em. 581. f. nostras minor. Park 221” (Gerard 1633: 581; Parkinson 1640: 220).

Gerard as well as Parkinson provided the illustrations “*Gratiola latifolia*” (image available at <https://archive.org/details/herballgeneral00gera/page/580/mode/2up>) and “*Gratiola angustifolia minor*” (image available at <https://www.biodiversitylibrary.org/item/256142#page/248/mode/1up>), respectively, which are clearly identifiable as *Scutellaria minor* as generally understood and are original material used by Hudson to describe the species. These two illustrations are the same and show a complete plant: a stem with leaves and flowers, and three details of corolla, calyx and seeds.

There is also a relevant specimen, Herb. Linnaeus No. 751.8 (LINN), which consists of two stems with leaves, one of the stems with flowers, and a label handwritten by Hudson “50 / *Cassida palustris minima* / flore purpurascens / R. Syn. 244. 2” (see also Jarvis

2007). The sheet is also annotated “minor” by Linnaeus at the base of the specimen. Therefore, the label on this sheet links the specimen with the letter sent by Hudson to Linnaeus. In this letter appears the same reference “50 *Cassida*. R. Syn: 244. 2”, and the specimen can be identified as original material of *Scutellaria minor*.

We could not trace any further original material in any consulted herbaria (see materials and methods). Therefore, among the extant original elements used by Hudson, the illustrations provided by Gerard, Parkinson and the specimen at LINN, we designate the specimen at LINN as the lectotype of *Scutellaria minor*. The specimen shows several of the diagnostic characters for this taxon: leaves with petiole 1 – 3 and lamina 8 – 20 (– 40) × 4 – 10 (– 20) mm, base rounded to cordate, margin entire or with 2, rarely more, small crenations proximally; bracts mostly leaf-like; calyx 2 – 3 mm long, eglandular pubescent; corolla 6 – 10 mm long; this corresponds well to the historical application of the name *S. minor* in several works (e.g. Boissier 1879; Bubani 1897) as well as its current application (e.g. Richardson 1972; Edmondson 1982; Webb *et al.* 1988; Paton 1989, 1990, sub “*S. galericulata* species-group”; Villar 2010).

Scutellaria minor Huds. (Hudson 1762: 232) ≡ *Cassida minor* (Huds.) Bubani, (Bubani 1897: 424). Lectotype (designated here): Herb. Linnaeus No. 751.8 (LINN; image available at <http://linnean-online.org/6684/>).

References

- Anonymous (1805). *Acts and votes of Parliament relating to the British Museum with the Statutes and rules thereof, and the succession of trustees and officers*. W. Bulmer & Co, London. <https://www.biodiversitylibrary.org/item/159849#page/7/mode/1up>
- Bauhin, C. (1623). *Pinax theatri botanici*. Ludovici Regis, Basileae. <https://bibdigital.rjb.csic.es/records/item/10754-redirect>
- (1658). *Theatri botanici*. Impensis Joannis Regis, Basileae.
- Beauvois, P. (1812). *Essai d'une nouvelle agrostographie; ou nouveaux genres des graminées; avec figures représentant les caractères de tous les genres*. Chez l'auteur, Paris.
- Boissier, E. (1879). *Scutellaria* L. In: E. Boissier (ed.), *Flora Orientalis*, Vol. 4: 681 – 691. Basileae & Lugduni, Geneva.
- Bubani, P. (1897). *Flora pyrenaea per Ordines Naturales gradatim digesta*, Vol. 1. Hoepli, Mediolani, Ulricus.
- (1901 – 1902). *Flora pyrenaea per Ordines Naturales gradatim digesta*, Vol. 4. Hoepli, Mediolani, Ulricus.

- Cafferty, S., Jarvis, C. E. & Turland, N. J. (eds) (2000). Typification of Linnaean plant names in the Poaceae (Gramineae). *Taxon* 49: 239 – 260.
- Catalán, P., Chalhoub, B., Chochois, V., Garvin, D. F., Hasterok, R., Manzaneda, A. J., Mur, L. A. J., Pecchioni, N., Rasmussen, S. K., Vogel, J. P. & Voxeur, A. (2014). Update on the genomics and basic biology of *Brachypodium*. *Trends Pl. Sci.* 19: 414 – 418.
- _____, López-Álvarez, D., Díaz-Pérez, A., Sancho, R. & López-Herránz, M. L. (2016). Phylogeny and evolution of the genus *Brachypodium*. In: J. P. Vogel (ed.), *Genetics and Genomics of Brachypodium*, 9 – 38. Springer, Switzerland.
- _____ & Olmstead, R. G. (2000). Phylogenetic reconstruction of the genus *Brachypodium* P. Beauv. (Poaceae) from combined sequences of chloroplast ndhF gene and nuclear ITS. *Pl. Syst. Evol.* 220: 1 – 19. <https://doi.org/10.1007/BF00985367>
- Celakovsky, L. J. (1871). *Prodromus der Flora von Böhmen*, Vol. 2. Selbstverlag des Comité's, Praga.
- Chevallier, F. F. (1827). *Flore Generale des Environs de Paris*, Vol. 2. Chez Ferra Jeune, Paris.
- Chiapella, J. (2009). Neotypification of *Aira setacea* Hudson (Poaceae). *Watsonia* 27: 239 – 242.
- Clarke, G. C. S. (1980). *Alopecurus*. In: T. G. Tutin, V. H. Heywood, N. A. Burges, D. M. Moore, D. H. Valentine, S. M. Walters & D. A. Webb (eds), *Flora Europaea*, 5: 241 – 243. Cambridge University Press, Cambridge.
- Dandy, J. E. (ed.) (1958). *The Sloane herbarium: An annotated list of the Horti Sicci composing it; With biographical accounts of the principal contributors*. Trustees of the British Museum, London.
- Decraene, L. P. R. & Akeroyd, J. R. (1988). Generic limits in *Polygonum* and related genera (Polygonaceae) on the basis of floral characters. *Bot. J. Linn. Soc.* 98: 321 – 371.
- Dixon, P. S. (1959). Notes on two important algal herbaria. *Brit. Phycol. Bull.* 7: 35 – 42.
- Doğan, M. (1999). A concise taxonomic revision of the genus *Alopecurus* L. (Gramineae). *Turkish J. Bot.* 24: 245 – 262.
- Edmondson, J. R. (1982). *Scutellaria* L. In: P. H. Davis (ed.), *Flora of Turkey and the east Aegean islands* 7: 78 – 100. Edinburgh University Press, Edinburgh.
- Egorova, T. V. (1999). *Sedges (Carex L.) of Russia and Adjacent States within the Limits of the Former USSR*. St Petersburg State-Pharmaceutical Academy and Missouri Botanical Garden, St. Petersburg and St. Louis.
- Federov, A. A. (1999). *Flora of Russia, the European part and bordering regions*, 1. A. A. Balkema, Rotterdam.
- Gerard, J. (1633). *The herball; or Generall historie of plantes*. A. Islip, J. Norton & R. Whitakers, London.
- <https://archive.org/details/herballorgeneral00gera/page/10>
- Hudson, W. (1762). *Flora Anglica, Exhibens Plantas per Regnum Angliae Sponte Crescentes, Distributas Secundum Systema Sexuale*. J. Nourse & C. Moran, London. <https://www.biodiversitylibrary.org/item/217308#page/254/mode/1up>
- _____ (1778). *Flora Anglica, Exhibens Plantas per Regnum Angliae Sponte Crescentes, Distributas Secundum Systema Sexuale. Editio altera, emendata et aucta*. J. Nourse, London.
- Jarvis, C. E. (2007). *Order out of chaos: Linnaean plant names and their types*. The Linnean Society of London and the Natural History Museum, London.
- Linnaeus, C. (1737). *Flora Lapponica*. Apud Salomonem Schouten, Amsterdam.
- _____ (1753). *Species plantarum. Laurentii Salvii, Holmiae*.
- _____ (1755). *Centuria I, Plantarum*. Reg. Acad. Typogr., Upsaliae
- _____ (1759). *Systema Naturae*, ed. 10, Vol. 2. Laurentii Salvii, Holmiae.
- _____ (1762). *Species plantarum*, ed. 2, Vol. 1. Laurentii Salvii, Holmiae.
- Llamas, F. & Acedo, C. (2019). Typification of eight current and seven related names and a new section in the genus *Bromus* (Bromeae, Pooideae, Poaceae). *PhytoKeys*: 121: 53 – 72. <https://doi.org/10.3897/phytokeys.121.30254>.
- Löve, Á. & Löve, D. (1961). Some nomenclatural changes in the European flora. 1. Species and supraspecific categories. *Bot. Not.* 114: 33 – 47.
- Lyons, I. (1763). *Fasciculus Plantarum Cantabrigiam nascentium quae post Rajum observatae fuere*. A. Millar, London.
- Moench, C. (1777). *Enumeratio Plantarum Indigenarum Hassiae*. Printed by the author, Kassel.
- Molina, A., Acedo, C., Jarvis, C. & Llamas, F. (2008). Typification of some of Hudson's plant names in *Carex* L. *Taxon* 55: 1009 – 1013
- Morison, R. (1680). *Plantarum Historiae Universalis Oxoniensis pars secunda seu Herbarum Distributio Nova, per tabulas cognationis & affinitatis ex Libro Naturae Observata & detecta*. Oxford. <https://bibdigital.rjb.csic.es/records/item/14341-plantarum-historiae-universalis-oxoniensis-pars-secunda>
- _____ (1699). *Plantarum Historiae universalis Oxoniensis pars tertia*. Theathro Sheldoniano, Oxford.
- Nelson, E. C. (2000). A history, mainly nomenclatural, of St Daboec's Heath. *Watsonia* 23: 47 – 58.
- Opiz, P. M. (1852). *Seznam rostlin květeny české*. V Kommissí u Fr. Řivnáce, Prague.
- Pando, F., Castilla, F., Muñoz Rodríguez, P. & Cezón, K. (2020). *List of taxa of the Spanish vascular flora*. Version 1.12. GBIF-Spain. Checklist dataset

- 10.15468/opn9ki accessed via GBIF.org on 2020-11-14)
- Parkinson, J. (1640). *Theatrum Botanicum*. Tho. Cotes, London. <https://www.biodiversitylibrary.org/bibliography/152383#/summary>
- Paton, A. (1989). The phytogeography of *Scutellaria* L. *Notes Roy. Bot. Gard. Edinburgh* 46: 345 – 359.
- (1990). A global taxonomic investigation of *Scutellaria* (Labiatae). *Kew Bull.* 45: 399 – 450.
- Paunero, E. (1952). Las especies españolas del género *Alopecurus*. *Anal. Inst. Bot. Cavanilles*: 301 – 346.
- Plukenet, L. (1691). *Phytographia, sive, Stirpium illustriorum & minus cognitarum icones tabulis aeneis: summa diligentia elaborate*. Printed by the author, London.
- Pollich, J. A. (1776). *Historia Plantarum in Palatinatu Electorali sponte nascentium incepta*, Vol. 1. C. F. Schwan, Mannheim.
- Pryor, R. A. (1881). Notes of the herbarium of Abbot, with remarks on the synonymy of some of the species. *J. Bot.* 19: 40 – 46, 67 – 75.
- Pulteney, R. (1790). *Historical and biographical sketches of the progress of botany in England, from its origin to the introduction of the Linnæan system*. Vol. 2. T. Cadell, London. <https://www.biodiversitylibrary.org/item/184335#page/7/mode/lup>
- Rafinesque, C. S. (1837). *Flora Telluriana, Pars tertia*. Printed by H. Probasco, Philadelphia.
- Ray, J. (1696). *Synopsis Methodica Stirpium Britannicarum*, ed. 2. S. Smith & B. Walford, London.
- (1724). *Synopsis Methodica Stirpium Britannicarum*, ed. 3. Guilielmi & Joannis Innys, London.
- Reveal, J., Terrel, E. E., Wiersema, J. H. & Scholz, H. (1991). Proposal to reject *Festuca elatior* L., with comments on the typification of *F. pratensis* and *F. arundinacea* (Poaceae). *Taxon* 40: 135 – 137
- Richardson, I. B. K. (1972). *Scutellaria* L. In: T. G. Tutin, V. H. Heywood, N. A. Burges, D. M. Moore, S. M. Valentine & D. A. Webb (eds), *Flora Europaea*, 3: 135 – 137. Cambridge University Press, Cambridge.
- Röser, M. (1995). Typification of the names of two widespread Eurasian grass species: *Avena pratensis* L. and *A. pubescens* Huds. (Poaceae: Helictotrichon). *Taxon* 44: 395 – 399. <https://doi.org/10.2307/1223412>
- Saint-Yves, A. (1934). Contribution à l'étude des *Brachypodium* (Europa et Région méditerranéenne). *Candollea* 5: 427 – 493.
- Salisbury, R. A. (1796). *Prodromus Stirpium in Horto ad Chapel Allerton vigentium*. Reg. Soc. Lond. Ac Linn, London.
- Schippmann, U. (1991). Revision der europäischen Arten der Gattung *Brachypodium* Palisot de Beauvois (Poaceae). *Boissiera* 45: 1 – 250.
- Smith, P. M. (1980). *Brachypodium* Beauv. In: T. G. Tutin, V. H. Heywood, N. A. Burges, D. M. Moore, S. M. Valentine, S. M. Walters & D. A. Webb (eds), *Flora Europaea* 5: 189 – 190. Cambridge University Press, Cambridge.
- Stafleu, F. A. & Cowan, R. S. (1979). Taxonomic literature, 2nd ed., Vol. 2. *Regnum Veg.* 98. Bohn, Scheltema & Holkema, Utrecht. <https://doi.org/10.5962/bhl.title.48631>
- Soreng, R. J., Peterson, P. M., Davidse, G., Judziewicz, E. J., Zuloaga, F. O., Filgueiras, T. S. & Morrone, O. (2003). Catalogue of New World grasses (Poaceae): IV. subfamily Pooideae. *Contr. U.S. Natl. Herb.* 48: 1 – 730.
- Steinwand, M. A., Young, H. A., Bragg, J. N., Tobias, C. M. & Vogel, J. P. (2013). *Brachypodium sylvaticum*, a model for perennial grasses: Transformation and inbred line development. *PLoS ONE* 8: e75180.
- Tateoka, T. (1968). Phytogeographical notes on the genus *Brachypodium* P. Beauv. (Gramineae). *Bol. Soc. Argent. Bot.* 12: 44 – 56.
- Thiers, B. (2020). *Index Herbariorum: A global directory of public herbaria and associated Staff*. New York Botanical Garden's Virtual Herbarium. Available from: <http://sweetgum.nybg.org/ih/>.
- Tournefort, J. P. de (1719). *Institutiones rei herbariae, 3e ed., 1er Tomo*. Typographia Regia, Paris.
- Tzvelev, N. N. (1971). Ron *Alopecurus* L. v SSSR [The genus *Alopecurus* L. in USSR]. *Novosti Sist. Vyssh. Rast.* 8: 12 – 22.
- Uotila, P. (2017). Polygonaceae. In: *Euro+Med Plantbase-the information resource for Euro-Mediterranean plant diversity*. <http://ww2.bgbm.org/EuroPlusMed/> [accessed 15 May 2020]
- Van Royen, A. (1740). *Florae Leydensis prodromus, exhibens plantas quae in Horto academico Lugduno-Batavo abuntur*. Lugduni Batavorum, Leiden.
- Villar, L. (1990). *Polygonum* L. In: S. Castroviejo, M. Laínz, G. López González, P. Montserrat, F. Muñoz Garmendia, J. Paiva & L. Villar (eds), *Flora Iberica*, 2: 571 – 586. Real Jardín Botánico de Madrid, CSIC, Madrid. http://www.floraiberica.es/floraiberica/texto/pdfs/02_054_01_Polygonum.pdf
- (2010). *Scutellaria* L. In: R. Morales, A. Quintanar, F. Cabezas, A. J. Pujadas & S. Cirujano (eds), *Flora Iberica*, 12: 172 – 178. Real Jardín Botánico de Madrid, CSIC, Madrid. <http://bibdigital.rjb.csic.es/spa/FichaLibro.php?Libro=6273>
- Webb, C. J., Sykes, W. R & Garnock-Jones, P. J. (1988). *Flora of New Zealand* Vol. 4. R. E. Owen, Government Printer, Wellington. https://floraseries.landcareresearch.co.nz/pages/TaxonIndex.aspx?id=_739d3705-7314-495a-95ec-9037e0f26bfc&fileName=Flora%204.xml
- Webb, D. A. & Chater, A. O. (1964). *Polygonum* L. In: T. G. Tutin, V. H. Heywood, N. A. Burges, D. M. Moore, D. H. Valentine, S. M. Walters & D. A. Webb (ed.), *Flora Europaea* 1: 76 – 80. Cambridge University Press, Cambridge.

Publisher's Note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.