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RESEARCH ARTICLE

Simplifying the nomenclature of *Sorbus* sensu lato: new nomenclatural solutions in *Aria* and *Hedlundia* (*Rosaceae*)

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Abstract. Various options for generic delimitation in *Maleae* (*Rosaceae*), specifically the taxa earlier included in *Sorbus* L. s. l., are discussed. Following the positive decision of the General Committee regarding our recent proposal to conserve the name *Aria* (Pers.) Host against the earlier names *Chamaemespilus* Medik. and *Torminalis* Medik., we conclude that for simplification of the taxonomic schemes and nomenclature in the group of *Sorbus* and its relatives, an expanded circumscription of *Aria* (including *Chamaemespilus* and *Torminalis*) is desirable; in particular, for preserving numerous names already available in *Aria*, especially those used for better known species. The European taxa of *Sorbus* s. l. accepted by Sennikov and Kurtto (2017) and in *Atlas Florae Europaeae* mostly in hybridogenous genera *Karpatiosorbus* Sennikov & Kurtto (combining in their genomes the subgenomes of the segregate genera *Aria* and *Torminalis*) and *Majovskya* Sennikov & Kurtto (with subgenomes of *Aria* and *Chamaemespilus*) are here transferred to *Aria* s. l. The names applied to hybridogenous genera *Normeyera* Sennikov & Kurtto and *Scandosorbus* Sennikov (≡ *Borkhausenia* Sennikov & Kurtto, nom. illeg.) that supposedly emerged from hybridization events combining *Aria* × *Chamaemespilus* × *Sorbus* and *Aria* × *Sorbus* × *Torminalis*, respectively, are here treated as synonyms of the hybridogenous generic name *Hedlundia* Sennikov & Kurtto (*Aria* s. l. × *Sorbus*), and the taxa earlier treated in *Normeyera* and *Scandosorbus* are here transferred to *Hedlundia*. In total, 104 new species-rank combinations are validated: 91 in *Aria* and 13 in *Hedlundia*. Comments are provided on hybrids (but not for hybridogenous species) between *Aria* and *Sorbus*, for which the nothogeneric name ×*Arsorbus* Su Liu & Z.H. Feng was recently proposed.

Keywords: *Aria*, *Chamaemespilus*, *Hedlundia*, *Karpatiosorbus*, *Majovskya*, nomenclature, *Normeyera*, *Rosaceae*, *Scandosorbus*, *Sorbus*, taxonomy, *Torminalis*

Introduction

In this article we briefly discuss various options for generic delimitation in the tribe *Maleae* (*Rosaceae*), specifically the taxa earlier included in *Sorbus* L. s. l. (sensu lato). We also propose here some nomenclatural actions aimed at simplification of the genus- and species-level nomenclature, in particular, the

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reduction of the number of genera and nothogenera to a more rational and easier-to-handle number, which, as we hope, will be more convenient to many users of scientific names in this important group of the European dendroflora.

The group of *Sorbus* s. l. is characterized not only with extensive hybridization between species in different evolutionary lineages (clades) but also the establishment of many of these as stabilized apomictic or sexually reproducing species. Thus, the group is characterized by "exceptional diversity resulting from the interplay of polyploidisation, hybridization, and apomixis" (Hajrudinović-Bogunić et al., 2023; see also Vít et al., 2012; Hajrudinović-Bogunić et al., 2015; Majeský et al., 2017; Levin et al., 2018; Feulner et al., 2019; Lepší et al., 2019; Velebil et al., 2022, and references therein). Due to these factors, sometimes morphologically quite different stabilized "microspecies" (morphotypes and genotypes) may emerge or evolve from different hybridization events between the same species. Thus, it is problematic or even sometimes impossible to use the concept of nothospecies and nothogenera to "microspecies" of that group because, according to Art. H.4.1 of the *International Code of Nomenclature for algae, fungi, and plants* (*ICN*; Turland et al., 2018, 2025; see additional references below), "a nothotaxon is circumscribed so as to include all individuals recognizably derived from the crossing of representatives of the stated parent taxa (i.e. not only the F1 but subsequent filial generations and also back-crosses and combinations of these). There can thus be only one correct name corresponding to a particular hybrid formula; this is the earliest legitimate name (Art. 6.5) at the appropriate rank (Art. H.5), and other names corresponding to the same hybrid formula are synonyms of it".

In the present article we are dealing with hybridogenous genera and hybridogenous species: for distinctions between hybridogenous taxa and nothotaxa, especially in *Sorbus* s. l., see comments in Sennikov and Kurtto (2017) and Mosyakin and McNeill (2023). In particular, we proposed to define hybridogenous genera and species as follows: "For the purposes of this *Code*, a hybridogenous genus is a genus that is derived from and has evolved from an intergeneric hybridization event or events and that contains one or more hybridogenous species, i.e. evolutionarily stabilized species that, although of hybrid origin, are regularly treated similarly to other species of non-hybrid origin" (Mosyakin, McNeill, 2023: 462). However, our proposal to amend Art. H.11.1 of the *International Code of Nomenclature for algae, fungi, and plants* was not accepted.

Generic delimitation in the group of *Sorbus* s. l.

Both traditional morphological and, especially, new molecular phylogenetic and genetic data (Morgan et al., 1994; Campbell et al., 1995, 2007; Evans, Campbell, 2002; Potter et al., 2007; Li Q.-Y. et al., 2012; Lo, Donoghue, 2012; Li M. et al., 2017; Levin et al., 2018; Sun et al., 2018, 2024; Liu et al., 2019, 2020; Németh et al., 2020; Ulaszewski et al., 2021; Hajrudinović-Bogunić et al., 2023; Andersen et al., 2024; Wang et al., 2024, etc.) have much improved our understanding of the complex evolutionary patterns in the group and, among other results, clearly demonstrated that the genus *Sorbus* in its traditional rather wide circumscription (see Hedlund, 1901; Gabrielian, 1972, 1978; Kalkman, 2004; Rich et al., 2010, etc.) is a non-monophyletic group. Consequently, various nomenclatural solutions reflecting this taxonomic pattern have been proposed (see, e.g., Phipps et al., 1990; Robertson et al., 1991; Ohashi, Iketa, 1993; Aldasoro et al., 1998; Lu, Ku, 2002; Mezhenskyj et al., 2012; Sennikov, 2014, 2018; Lepší et al., 2015; Fedoronchuk, 2017, 2022; Sennikov, Kurtto, 2017; Mezhenska et al., 2018; Kurtto et al., 2018; Christenhusz et al., 2018; Rushforth, 2018, 2019a; Mosyakin et al., 2022; Fay, Rich, 2022a, and references therein).

In our opinion (see Mosyakin et al., 2022), the currently preferred approaches to the genus-level taxonomy and nomenclature of taxa of European or western Eurasian *Maleae* (*Rosaceae*) earlier placed in the genus *Sorbus* are either too complicated, recognizing numerous segregate and hybridogenous genera and nothogenera (see Sennikov, Kurtto, 2017; Kurtto et al., 2018; see also new segregate Asian genus-rank taxa: Rushforth, 2018) or too simplistic, preferring a huge catch-all genus *Pyrus* L. s. l. (including *Aria* (Pers.) Host, *Aronia* Medik., *Chaenomeles* Lindl., *Chamaemeles* Lindl., *Chamaemespilus* Medik., *Cormus* Spach, *Cotoneaster* Medik., *Cydonia* Mill., *Docynia* Decne., *Eriobotrya* Lindl., *Heteromeles* M. Roem., *Malus* Mill., *Micromeles* Decne., *Osteomeles* Lindl., *Photinia* Lindl., *Pourthiaea* Decne., *Pseudocydonia* (C.K. Schneid.) C.K. Schneid., *Rhaphiolepis* Lindl., *Sorbus* s. l., *Stranvaesia* Lindl., etc.) (see the treatment by Fay and Christenhusz in *The Global Flora*: Christenhusz

et al., 2018). Since many taxa of *Sorbus* s. l. are popular ornamentals or minor fruit trees widely used in horticulture, landscape design, and forestry, and many geographically restricted species are of conservation concern (see Rivers et al., 2019), both these extreme approaches are probably not convenient for taxonomists, horticulturalists, conservationists, and other practitioners of the mentioned applied fields; see further discussion in the article by Fay and Rich (2022a), who, for the time being and for pragmatic considerations, in their series of articles (Fay, Rich, 2022b; Rich et al., 2022a, 2022b, etc.) preferred to use the genus *Sorbus* in its traditional wide circumscription.

In contrast, Rushforth (2018, 2019a, 2019b, 2019c) accepted a much finer generic subdivision of the "*Sorbus*" group, with many additional genera recognized, such as *Sorbus* s. str., *Cormus*, *Aria*, *Chamaemespilus*, *Torminalis*, *Micromeles*, *Pleiosorbus* Li H. Zhou & C.Y. Wu (Zhou, Wu, 2000; see, however, Lu, Ku, 2002), five hybridogenous genera newly proposed by Sennikov and Kurtto (2017, see below), and five newly established genera, *Alniaria* Rushforth, *Dunnaria* Rushforth, *Griffitharia* Rushforth, *Thomsonaria* Rushforth, and *Wilsonaria* Rushforth.

As a partial response to these concerns, in our recent publication (Mosyakin et al., 2022) we proposed to conserve the generic name *Aria* (Pers.) Host against earlier names *Chamaemespilus* Medik. and *Torminalis* Medik. The main nomenclatural reasons for that proposal were summarized as follows: "If this proposal is accepted, the name *Aria* will be the correct name for a combined genus including *Chamaemespilus* and *Torminalis*, but it will not preclude the use of the two latter generic names for those who would prefer to keep them as separate genera distinct from *Aria* s. str. Also, if *Aria* s. l. is recognized, only one generic name will be needed for the hybridogenous genus resulting from hybridization of *Aria* s. l. and *Sorbus* s. str., while many other names of hybridogenous genera and nothogenera will become unnecessary" (Mosyakin et al., 2022: 481).

The Committee for Vascular Plants in its decision (see Applequist, 2024: 293) succinctly but comprehensively commented that "*Sorbus* L. sensu lato is a very complicated group, now known to be polyphyletic. A variety of competing generic-level treatments have been published. These include an ultra-lumping treatment that is unlikely to gain acceptance and the treatment of Sennikov & Kurtto (in Memoranda Soc. Fauna Fl. Fenn. 93: 1–78. 2017), which, though thoughtful and well-informed, is considered by Mosyakin & al. to be too complicated to be acceptable to the public. The treatment Mosyakin & al. favor, following Sun & al. (in BioMed Res. Int. 2018: 7627191. 2018), would break *Sorbus* s. l. into two genera, the pinnate-leaved species (*Sorbus*) and the simple-leaved species. The latter genus would combine the segregate genera of *Aria* (Pers.) Host, *Chamaemespilus* Medik., and *Torminalis* Medik." The Committee found these arguments as "reasonable grounds for conservation" and emphasized that "The proposed action [conservation — SM] would not impair the use of Sennikov & Kurtto's treatment, for those who favor it."

Accordingly, our proposal to conserve the name *Aria* against two earlier names, *Chamaemespilus*, and *Torminalis*, was recommended for acceptance by the Committee for Vascular Plants (see Applequist, 2024) and after that was accepted by the General Committee (see Wilson, 2024: 1082). Consequently, the name *Aria* is now conserved against the two earlier generic names.

This nomenclatural decision necessitates, in our opinion, several nomenclatural adjustments aimed at considerable simplification of the nomenclature of many European and some western Asian taxa earlier mainly placed in *Sorbus* sensu lato.

In nomenclatural actions we follow the *International Code of Nomenclature for algae, fungi, and plants*. In addition to the currently available online version, the *Shenzhen Code* (Turland et al., 2018), and while the new *Madrid Code* (Turland et al., 2025, in press) is still in preparation or in press, we used the official publications in *Taxon* reflecting the changes introduced by the XX International Botanical Congress (Turland, Wiersema, 2024; Turland et al., 2024; Turland, 2025) and the *Madrid Code* version in Spanish translated and edited by Greuter et al. (2025).

Results and Discussion

If we recognize two larger, more widely circumscribed genera, *Sorbus* for the pinnate-leaved species and *Aria* (including *Chamaemespilus* and *Torminalis*) for simple-leaved species, then we need only one hybridogenous genus to house the hybridogenous species and infrageneric taxa that have emerged from hybridization events between *Sorbus* and *Aria*, instead of the three hybridogenous genera proposed by Sennikov and Kurtto (2017; see also

Kurtto et al., 2018), morphological distinctions of which are mainly minor and rather unreliable (see also the identification key in Rushforth, 2018).

Consequently, the genera *Normeyera* Sennikov & Kurtto and *Scandosorbus* Sennikov (≡ *Borkhausenia* Sennikov & Kurtto, nom. illeg.), members of which supposedly emerged from hybridization events combining *Aria* × *Chamaemespilus* × *Sorbus* and *Aria* × *Sorbus* × *Torminalis*, respectively, should be treated as synonyms of the hybridogenous generic name *Hedlundia* Sennikov & Kurtto (*Aria* s. l. × *Sorbus*), and thus the taxa earlier treated in *Normeyera* and *Scandosorbus* are here transferred to *Hedlundia*, which we accept as a hybridogenous genus, members of which resulted from hybridization events between *Aria* s. l. (incl. *Chamaemespilus* and *Torminalis*) and *Sorbus*.

Moreover, under a wider circumscription of *Aria* sensu lato (including *Chamaemespilus* and *Torminalis*), the genera *Karpatiosorbus* Sennikov & Kurtto (combining in their genomes the subgenomes of the segregate genera *Aria* and *Torminalis*) and *Majovskya* Sennikov & Kurtto (with subgenomes of *Aria* and *Chamaemespilus*) are no longer necessary and their taxa should be placed in *Aria* sensu lato.

In our opinion, our proposed nomenclatural actions will considerably simplify the overly complicated nomenclature of predominantly European or western Eurasian taxa earlier placed in *Sorbus* sensu lato. However, in our present publication we do not consider the recently validated generic segregates proposed for predominantly Asian taxa by Rushforth (2018), *Alniaria*, *Dunnaria*, *Griffitharia*, *Thomsonaria*, and *Wilsonaria*, because phylogenetic relationships of these taxa still remain insufficiently understood. Probably at least some of them in the future will be merged with *Aria* or *Micromeles*.

Some special cases and comments

It should be noted that some taxa accepted by Sennikov and Kurtto (2017) in *Karpatiosorbus* and *Majovskya* already have names available in *Aria*, as well as some taxa which they placed in *Normeyera* and *Scandosorbus* already have names available in *Hedlundia*.

As an example, we provide here an explanation for the species recently accepted as *Karpatiosorbus* ×*hybrida* (Borkh.) Sennikov & Kurtto (see Sennikov, Kurtto, 2017, and POWO, 2025–onward: https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:77164944-1).

Aria decipiens (Bechst.) M. Roem., Fam. Nat. Syn. Monogr. Rosiflorae 3: 129. 1847 ≡ *Crataegus hybrida* Bechst., Diana (Waltershausen) 1: 81. 1797, nom. illeg., non L. 1761 ≡ *Azarolus hybrida* Borkh., Theor. Prakt. Handb. Forstbot. 2: 1239. 1803 ≡ *Pyrus decipiens* Bechst., Forstbot. 1: 236. 1810 ≡ *Sorbus decipiens* (Bechst.) Petz. & G. Kirchn., Arbor. Muscav.: 301. 1864 ≡ *Karpatiosorbus* ×*hybrida* (Borkh.) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 47. 2017.

The name *Aria decipiens* (Bechst.) Roem. was superfluous (but not illegitimate) when published in 1847; however, it has the legitimate basionym, *Pyrus decipiens* Bechst. (see above), and thus Art. 52.4 of the *ICN* (Turland et al., 2018, 2025 (in press); see also Greuter et al., 2025) is applicable here: "A name that was nomenclaturally superfluous when published is not illegitimate on account of its superfluity if it has a basionym (which is necessarily legitimate; see Art. 6.10)…". Also, a new combination in *Aria* based on *Azarolus hybrida* Borkh. would be illegitimate because of the earlier homonym *Aria hybrida* (L.) Beck (in Fl. Nieder-Osterreich 2: 711. 1892). Consequently, *Aria decipiens* (Bechst.) Roem. is the correct name in *Aria* for this taxon.

Also, for the species recently accepted as *Karpatiosorbus latifolia* (Lam.) Sennikov & Kurtto (see Sennikov, Kurtto, 2017, and POWO, 2025–onward: https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:77164952-1), the combination *Aria latifolia* is available:

Aria latifolia (Lam.) M. Roem., Fam. Nat. Syn. Monogr. 3: 128. 1847 ≡ *Crataegus latifolia* Lam., Fl. Franç. 3: 486. 1779 ≡ *Sorbus latifolia* (Lam.) Pers., Syn. Pl. 2: 38. 1806 ≡ *Pyrus latifolia* (Lam.) R. Thomps., Hort. Soc. Lond., Cat. Fr.: 183. 1826 ≡ *Torminaria latifolia* (Lam.) Dippel, Handb. Laubholzk. 3: 388. 1893 ≡ *Sorbus aria* subsp. *latifolia* (Lam.) Rouy & E.G. Camus in Rouy & J. Foucaud, Fl. France 7: 22. 1901 ≡ *Tormaria latifolia* (Lam.) Mezhenskyj, Netradytsiyni plodovi kultury: 28. 2012, pro hybr. ≡ *Karpatiosorbus latifolia* (Lam.) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 47. 2017.

The recently accepted name *Karpatiosorbus parviloba* has been already transferred to *Aria* by Sennikov and Kurtto (in Rich et al., 2018):

Aria parviloba (T.C.G. Rich) Sennikov & Kurtto, Edinburgh J. Bot. 76: 178. 2018 (vol. of 2019) ≡ *Sorbus parviloba* T.C.G. Rich, Watsonia 27: 306.

2009 ≡ *Karpatiosorbus parviloba* (T.C.G. Rich) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 49. 2017 ≡ *Pyrus parviloba* (T.C.G. Rich) M.F. Fay & Christenh., Global Fl. 4: 115. 2018.

It has been recently demonstrated (Németh et al., 2020) that the taxa known as *Sorbus liljeforsii* T.C.G. Rich (also *Scandosorbus liljeforsii* (T.C.G. Rich) Sennikov or *Pyrus liljeforsii* (T.C.G. Rich) M.F. Fay & Christenh.), *Sorbus semipinnata* Borbás (also *Hedlundia semipinnata* (Borbás) Sennikov & Kurtto, *Sorbus dacica* Borbás, nom. superfl.; see Somlyaly, Sennikov, 2016), *Sorbus paxiana* Jáv. (also *Karpatiosorbus paxiana* (Jáv.) Sennikov & Kurtto or *Pyrus paxiana* (Jáv.) M.F. Fay & Christenh.), *Sorbus tauricola* Zaik. ex Sennikov (also *Aria tauricola* (Zaik. ex Sennikov) Fedor., *Karpatiosorbus tauricola* (Zaik. ex Sennikov) Sennikov & Kurtto, or *Pyrus tauricola* (Zaik. ex Sennikov) M.F. Fay & Christenh.) originated from triparental hybridization events involving taxa from *S. aria* agg., *S. aucuparia*, and *S. torminalis*. In our scheme treating *Aria* in a wide sense, these taxa should be placed in *Hedlundia*. Consequently, ***Hedlundia semipinnata*** is the correct name for the taxon earlier known as *Sorbus semipinnata* or "*Sorbus dacica*". For other species, we provide below the new combinations in *Hedlundia*.

We also added here new combinations in *Aria* for some geographically restricted taxa recently described by German botanists in *Sorbus* (Meyer, Meierott, 2021). One of those new species already has a combination available in *Hedlundia*, ***H. lippertiana*** (N. Mey. & Meierott) N. Mey. (*Sorbus lippertiana* N. Mey. & Meierott) (Hassler, Muer, 2024).

One species recently described from Slovakia as *Sorbus petraea* Velebil, M. Lepší & P. Lepší (Velebil et al., 2022) is transferred below to *Aria*. According to the authors (Velebil et al., 2022: 323), "The most similar species to *Sorbus petraea* in the area studied are *S. collina* and *S. danubialis*", the taxa now recognized as *Aria collina* (M. Lepší, P. Lepší & N. Mey.) Sennikov & Kurtto (2017: 23) and *A. danubialis* (Jáv.) Sennikov & Kurtto (2027: 21), respectively.

We omitted here some still taxonomically unplaced and/or invalidly published names, for example, "*Sorbus carniolica*" Kárpáti, nom. inval. ("*Pyrus carniolica*" (Kárpáti) M.F. Fay & Christenh., nom. inval.), "*Sorbus istriaca*" Kárpáti, nom. inval. ("*P. istriaca*" (Kárpáti) M.F. Fay & Christenh., nom. inval.), etc.

Some better known or widespread species already have names available in their proper genera, e.g. ***Aria sudetica*** (Tausch) Beck (≡ *Pyrus sudetica* Tausch, ×*Chamaearia sudetica* (Tausch) Mezhenskyj, pro hybr., *Majovskya sudetica* (Tausch) Sennikov & Kurtto, *Sorbus sudetica* (Tausch) Bluff, Nees & Schauer, etc.) and ***Hedlundia hybrida*** (L.) Sennikov & Kurtto (≡ *Crataegus hybrida* L., *Sorbus hybrida* (L.) L., *Pyrus hybrida* (L.) Sm., *Aria hybrida* (L.) Beck, ×*Ariosorbus hybrida* (L.) Mezhenskyj, pro hybr., etc.).

Validation of new combinations for European taxa

The nomenclatural combinations needed for European taxa under a wider circumscription of *Aria* (including *Chamaemespilus* and *Torminalis*) are provided below.

The species concept for species-rank taxa listed here mainly follows the treatments of *Sorbus* s. l. by Sennikov and Kurtto (2017; updated in Sennikov, 2018) and in Volume 17 of the *Atlas Florae Europaeae* (Kurtto et al., 2018), with some additions or minor modifications. Additional information, full synonymy, and citations of types are available from the article by Sennikov and Kurtto (2017) and other cited sources, and are not repeated here.

Aria (Pers.) Host, Fl. Austriaca 2: 7. 1831, nom. cons.
≡ *Sorbus* subgen. *Aria* Pers., Syn. Pl. 2: 38. 1806 ≡ *Pyrus* sect. *Aria* (Pers.) DC., Prodr. 2: 635. 1825 ≡ *Sorbus* sect. *Aria* (Pers.) Dumort., Fl. Belg.: 93. 1827.
= *Chamaemespilus* Medik., Philos. Bot. 1: 138. 1789, nom. rej.
= *Torminalis* Medik., Philos. Bot. 1: 134. 1789, nom. rej. ≡ *Hahnia* Medik., Gesch. Bot.: 81. 1793, nom. superfl.
= *Torminaria* (DC.) Opiz, Oekon. Neuigk. Verh. 58: 522. 1839 ≡ *Pyrus* sect. *Torminaria* DC., Prodr. 2: 636. 1825.
= *Karpatiosorbus* Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 46. 2017.
= *Majovskya* Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 63. 2017.

Aria acutiserrata (C. Németh) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus acutiserrata* C. Németh, Kitaibelia 14: 90. 2009, as '*acutiserratus*' ≡ *Karpatiosorbus acutiserrata* (C. Németh) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 61. 2017 ≡ *Pyrus vertesica* M.F. Fay & Christenh., Global Fl. 4: 125. 2018 (non *Pyrus acutiserrata* Gladkova, Novosti Sist. Vyssh. Rast. 24: 104. 1987).

Aria adamii (Kárpáti) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus adamii* Kárpáti, Hung. Acta Biol. 1: 112. 1949, as '*adami*' ≡ *Karpatiosorbus adamii* (Kárpáti) Sennikov & Kurtto Memoranda Soc. Fauna Fl. Fenn. 93: 57. 2017 ≡ *Pyrus adamii* (Kárpáti) M.F. Fay & Christenh., Global Fl. 4: 94. 2018.

Aria adeana (N. Mey.) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus adeana* N. Mey., Ber. Bayer. Bot. Ges. Sonderband (Beitr. Sorbus Bayern): 139. 2005 ≡ *Karpatiosorbus adeana* (N. Mey.) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 52. 2017 ≡ *Pyrus adeana* (N. Mey.) M.F. Fay & Christenh., Global Fl. 4: 94. 2018.

Aria admonitor (M. Proctor) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus admonitor* M. Proctor, Watsonia 27: 207. 2009 ≡ *Karpatiosorbus admonitor* (M. Proctor) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 48. 2017 ≡ *Pyrus admonitor* (M. Proctor) M.F. Fay & Christenh., Global Fl. 4: 94. 2018.

Aria albensis (M. Lepší, Boublík, P. Lepší & Vít) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus albensis* M. Lepší, Boublík, P. Lepší & Vít, Preslia 81: 76. 2009 ≡ *Karpatiosorbus albensis* (M. Lepší, Boublík, P. Lepší & Vít) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 51. 2017 ≡ *Pyrus albensis* (M. Lepší, Boublík, P. Lepší & Vít) M.F. Fay & Christenh., Global Fl. 4: 94. 2018.

Aria alnifrons (Kovanda) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus alnifrons* Kovanda, Verh. Zool.-Bot. Ges. Österreich 133: 356. 1996 ≡ *Karpatiosorbus alnifrons* (Kovanda) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 50. 2017 ≡ *Pyrus alnifrons* (Kovanda) M.F. Fay & Christenh., Global Fl. 4: 95. 2018.

Aria amici-petri (Mikoláš) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus amici-petri* Mikoláš, Thaiszia 13: 128. 2004 (vol. of "2003") ≡ *Karpatiosorbus amici-petri* (Mikoláš) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 54. 2017 ≡ *Pyrus amici-petri* (Mikoláš) M.F. Fay & Christenh., Global Fl. 4: 95. 2018.

Aria andreanszkyana (Kárpáti) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus andreanszkyana* Kárpáti, Agrártud. Egyet. Kert- Szölögazdaságtud. Karának Évk. 1(14): 34. 1950 ≡ *Karpatiosorbus andreanszkyana* (Kárpáti) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 58. 2017 ≡ *Pyrus andreanszkyana* (Kárpáti) M.F. Fay & Christenh., Global Fl. 4: 95. 2018.

Aria badensis (Düll) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus badensis* Düll, Ber. Bayer. Bot. Ges. Sonderband (Beitr. Sorbus Bayern): 131. 2005 ≡ *Karpatiosorbus badensis* (Düll) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 54. 2017 = *Pyrus aurelia-aquensis* M.F. Fay & Christenh., Global Fl. 4: 96. 2018 (non *Pyrus badensis* hort. ex K. Koch, Dendrologie 1: 192. 1869).

Aria bakonyensis (Jáv.) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus franconica* f. *bakonyensis* Jáv., Magyar Bot. Lapok 25: 87. 1927 (dated as "1926") ≡ *Sorbus bakonyensis* (Jáv.) Jáv., Kertészeti Lapok 32: 284. 1928 ≡ *Karpatiosorbus bakonyensis* (Jáv.) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 59. 2017 ≡ *Pyrus bakonyensis* (Jáv.) M.F. Fay & Christenh., Global Fl. 4: 96. 2018.

Aria balatonica (Kárpáti) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus balatonica* Kárpáti, Hung. Acta Biol. 1: 121. 1949 ≡ *Karpatiosorbus balatonica* (Kárpáti) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 60. 2017 ≡ *Pyrus balatonica* (Kárpáti) M.F. Fay & Christenh., Global Fl. 4: 96. 2018.

Aria barabitsii (C. Németh) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus barabitsii* C. Németh, Acta Bot. Hung. 54: 138. 2012 ≡ *Karpatiosorbus barabitsii* (C. Németh) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 60. 2017 ≡ *Pyrus barabitsii* (C. Németh) M.F. Fay & Christenh., Global Fl. 4: 98. 2018.

Aria barrandienica (Vít, M. Lepší & P. Lepší) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus barrandienica* Vít, M. Lepší & P. Lepší, Preslia 84: 82. 2012 ≡ *Karpatiosorbus barrandienica* (Vít, M. Lepší & P. Lepší) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 52. 2017 ≡ *Pyrus barrandienica* (Vít, M. Lepší & P. Lepší) M.F. Fay & Christenh., Global Fl. 4: 98. 2018.

Aria barthae (Kárpáti) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus barthae* Kárpáti, Agrártud. Egyet. Kert- Szölögazdaságtud. Karának Évk. 1(14): 37. 1950 ≡ *Karpatiosorbus barthae* (Kárpáti) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 60. 2017 ≡ *Pyrus barthae* (Kárpáti) M.F. Fay & Christenh., Global Fl. 4: 98. 2018.

Aria bodajkensis (Barabits) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus bodajkensis* Barabits, Tilia 13: 19. 2007 ≡ *Karpatiosorbus bodajkensis*

(Barabits) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 59. 2017 ≡ *Pyrus bodajkensis* (Barabits) M.F. Fay & Christenh., Global Fl. 4: 98. 2018.

Aria bohemica (Kovanda) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus bohemica* Kovanda, Acta Univ. Carol., Biol. 1961(1): 77. 1961 ≡ *Karpatiosorbus bohemica* (Kovanda) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 51. 2017 ≡ *Pyrus bohemica* (Kovanda) M.F. Fay & Christenh., Global Fl. 4: 98. 2018.

Aria borosiana (Kárpáti) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus borosiana* Kárpáti, Agrártud. Egyet. Kert- Szölögazdaságtud. Karának Közlem. 12: 144. 1948 ≡ *Karpatiosorbus borosiana* (Kárpáti) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 57. 2017 ≡ *Pyrus borosiana* (Kárpáti) M.F. Fay & Christenh., Global Fl. 4: 98. 2018.

Aria bristoliensis (Wilmott) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus bristoliensis* Wilmott, Proc. Linn. Soc. Lond. 146: 76. 1934 ≡ *Karpatiosorbus bristoliensis* (Wilmott) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 48. 2017 ≡ *Pyrus bristoliensis* (Wilmott) M.F. Fay & Christenh., Global Fl. 4: 99. 2018.

Aria carolipolitana (N. Mey. & Meierott) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus carolipolitana* N. Mey. & Meierott, Ber. Bayer. Bot. Ges. 91: 61. 2021 ≡ *Karpatiosorbus carolipolitana* (N. Mey. & Meierott) N. Mey. in M. Hassler & T. Muer, Fl. German. 3: 644. 2024.

Aria cochleariformis (Meierott) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus cochleariformis* Meierott, Ber. Bayer. Bot. Ges. Sonderband (Beitr. Sorbus Bayern): 176. 2005 ≡ *Karpatiosorbus cochleariformis* (Meierott) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 53. 2017 ≡ *Pyrus cochleariformis* (Meierott) M.F. Fay & Christenh., Global Fl. 4: 100. 2018.

Aria concavifolia (C. Németh) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus concavifolia* C. Németh, Stud. Bot. Hung. 47: 299. 2016 ≡ *Karpatiosorbus concavifolia* (C. Németh) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 58. 2017 ≡ *Pyrus concavifolia* (C. Németh) M.F. Fay & Christenh., Global Fl. 4: 100. 2018.

Aria cordigastensis (N. Mey.) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus cordigastensis* N. Mey., Ber. Bayer. Bot. Ges. Sonderband (Beitr. Sorbus Bayern): 143. 2005 ≡ *Karpatiosorbus cordigastensis* (N. Mey.) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 52. 2017 ≡ *Pyrus cordigastensis* (N. Mey.) M.F. Fay & Christenh., Global Fl. 4: 101. 2018.

Aria croceocarpa (P.D. Sell) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus croceocarpa* P.D. Sell, Watsonia 17: 392. 1989 ≡ *Karpatiosorbus croceocarpa* (P.D. Sell) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 50. 2017 ≡ *Pyrus croceocarpa* (P.D. Sell) M.F. Fay & Christenh., Global Fl. 4: 101. 2018.

Aria decipientiformis (Kárpáti) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus decipientiformis* Kárpáti, Agrártud. Egyet. Kert- Szölögazdaságtud. Karának Évk. 1(14): 36. 1950 ≡ *Karpatiosorbus decipientiformis* (Kárpáti) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 57. 2017 ≡ *Pyrus decipientiformis* (Kárpáti) M.F. Fay & Christenh., Global Fl. 4: 101. 2018.

Aria degenii (Ják.) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus degenii* Ják., Magyar Bot. Lapok 25: 85. 1926 publ. 1927 ≡ *Karpatiosorbus degenii* (Ják.) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 58. 2017 ≡ *Pyrus degenii* (Ják.) M.F. Fay & Christenh., Global Fl. 4: 101. 2018.

Aria devoniensis (E.F. Warb.) Mosyakin, Fedor. & McNeill, **comb. nov**. ≡ *Sorbus devoniensis* E.F. Warb., Watsonia 4: 46. 1957 ≡ *Karpatiosorbus devoniensis* (E.F. Warb.) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 48. 2017 ≡ *Pyrus devoniensis* (E.F. Warb.) M.F. Fay & Christenh., Global Fl. 4: 102. 2018

Aria dolomiticola (Mikoláš) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus dolomiticola* Mikoláš, Thaiszia 6: 2. 1997 (vol. of "1996") ≡ *Karpatiosorbus dolomiticola* (Mikoláš) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 56. 2017 ≡ *Pyrus dolomiticola* (Mikoláš) M.F. Fay & Christenh., Global Fl. 4: 102. 2018.

Aria dominii (Kárpáti) Mosyakin, Fedor. & McNeill, **comb. nov**. ≡ *Sorbus dominii* Kárpáti, Acta Bot. Hung. 52(3–4): 383. 2010 ["*Sorbus dominii*" Kárpáti, Bot. Közlem. 52: 140. 1966, nom. inval.] ≡ *Karpatiosorbus dominii* (Kárpáti) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 56. 2017 ≡ *Pyrus dominii* (Kárpáti) M.F. Fay & Christenh., Global Fl. 4: 102. 2018, nom. inval. [the cited "basionym" of 1966 was not validly published, see above].

Aria dracofolia (C. Németh) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus dracofolia* C. Németh, Kitaibelia 14: 93. 2009, as '*dracofolius*' ≡ *Karpatiosorbus dracofolia* (C. Németh) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 62. 2017. ≡ *Pyrus dracofolia* (C. Németh) M.F. Fay & Christenh., Global Fl. 4: 102. 2018.

Aria dubronensis (N. Mey., Feulner & T.C.G. Rich) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus dubronensis* N. Mey., Feulner & T.C.G. Rich, Ber. Bayer. Bot. Ges. 90: 94. 2020.

Aria eugenii-kelleri (Kárpáti) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus eugenii-kelleri* Kárpáti, Hung. Acta Biol. 1: 113. 1949 ≡ *Karpatiosorbus eugenii-kelleri* (Kárpáti) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 60. 2017 ≡ *Pyrus eugenii-kelleri* (Kárpáti) M.F. Fay & Christenh., Global Fl. 4: 103. 2018.

Aria eximia (Kovanda) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus eximia* Kovanda, Preslia 56: 170. 1984 ≡ *Karpatiosorbus eximia* (Kovanda) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 51. 2017 ≡ *Pyrus eximia* (Kovanda) M.F. Fay & Christenh., Global Fl. 4: 103. 2018.

Aria eystettensis (N. Mey.) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus eystettensis* N. Mey., Ber. Bayer. Bot. Ges. Sonderband (Beitr. Sorbus Bayern): 165. 2005 ≡ *Karpatiosorbus eystettensis* (N. Mey.) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 53. 2017 ≡ *Pyrus eystettensis* (N. Mey.) M.F. Fay & Christenh., Global Fl. 4: 103. 2018.

Aria fischeri (N. Mey.) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus fischeri* N. Mey., Ber. Bayer. Bot. Ges. Sonderband (Beitr. Sorbus Bayern): 172. 2005 ≡ *Karpatiosorbus fischeri* (N. Mey.) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 54. 2017 ≡ *Pyrus fischeri* (N. Mey.) M.F. Fay & Christenh., Global Fl. 4: 103. 2018.

Aria franconica (Bornm.) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus franconica* Bornm., Beih. Bot. Centralbl. 36(2): 186. 1918 ≡ *Karpatiosorbus franconica* (Bornm.) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 52. 2017 ≡ *Pyrus franconica* (Bornm.) M.F. Fay & Christenh., Global Fl. 4: 104. 2018.

Aria futakiana (Kárpáti) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus futakiana* Kárpáti, Fl. Slovenska IV/3: 441. 1992 ≡ *Karpatiosorbus futakiana* (Kárpáti) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 56. 2017 ≡ *Pyrus futakiana* (Kárpáti) M.F. Fay & Christenh., Global Fl. 4: 104. 2018.

Aria gayeriana (Kárpáti) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus gayeriana* Kárpáti, Agrártud. Egyet. Kert- Szölögazdaságtud. Karának Évk. 1(14): 35. 1950 ≡ *Karpatiosorbus gayeriana* (Kárpáti) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 58. 2017 ≡ *Pyrus gayeriana* (Kárpáti) M.F. Fay & Christenh., Global Fl. 4: 105. 2018.

Aria gemella (Kovanda) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus gemella* Kovanda, Verh. Zool.-Bot. Ges. Österreich 133: 329. 1996 ≡ *Karpatiosorbus gemella* (Kovanda) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 50. 2017 ≡ *Pyrus gemella* (Kovanda) M.F. Fay & Christenh., Global Fl. 4: 105. 2018.

Aria gerecseensis (Boros & Kárpáti) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus gerecseensis* Boros & Kárpáti, Hung. Acta Biol. 1: 107. 1949 ≡ *Karpatiosorbus gerecseensis* (Boros & Kárpáti) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 60. 2017 ≡ *Pyrus gerecseensis* (Boros & Kárpáti) M.F. Fay & Christenh., Global Fl. 4: 105. 2018.

Aria griseotormaria (N. Mey. & Meierott) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus griseotormaria* N. Mey. & Meierott, Ber. Bayer. Bot. Ges. 91: 69. 2021. ≡ *Karpatiosorbus griseotormaria* (N. Mey. & Meierott) N. Mey. in M. Hassler & T. Muer, Fl. German. 3: 646. 2024.

Aria haesitans (Meierott) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus haesitans* Meierott, Ber. Bayer. Bot. Ges. Sonderband (Beitr. Sorbus Bayern): 180. 2005 ≡ *Karpatiosorbus haesitans* (Meierott) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 52. 2017 ≡ *Pyrus haesitans* (Meierott) M.F. Fay & Christenh., Global Fl. 4: 106. 2018.

Aria haljamovae (Bernátová & Májovský) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus haljamovae* Bernátová & Májovský, Biologia (Bratislava) 58: 784. 2003; Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 64. 2017 ≡ *Majovskya haljamovae* (Bernátová & Májovský) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 64. 2017 ≡ *Pyrus haljamovae* (Bernátová & Májovský) M.F. Fay & Christenh., Global Fl. 4: 106. 2018.

Aria herbipolitana (Meierott) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus herbipolitana* Meierott, Ber. Bayer. Bot. Ges. Sonderband (Beitr. Sorbus Bayern): 183. 2005 ≡ *Karpatiosorbus herbipolitana* (Meierott) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 53. 2017 ≡ *Pyrus herbipolitana* (Meierott) M.F. Fay & Christenh., Global Fl. 4: 106. 2018.

Aria holubyana (Kárpáti) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus holubyana* Kárpáti, Bot. Közlem. 52: 137. 1966 ≡ *Karpatiosorbus holubyana* (Kárpáti) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 55. 2017 ≡ *Pyrus holubyana* (Kárpáti) M.F. Fay & Christenh., Global Fl. 4: 107. 2018.

Aria hoppeana (N. Mey.) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus hoppeana* N. Mey., Ber. Bayer. Bot. Ges. Sonderband (Beitr. Sorbus Bayern): 150. 2005 ≡ *Karpatiosorbus hoppeana* (N. Mey.) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 52. 2017 ≡ *Pyrus hoppeana* (N. Mey.) M.F. Fay & Christenh., Global Fl. 4: 107. 2018.

Aria houstoniae (T.C.G. Rich) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus houstoniae* T.C.G. Rich, Watsonia 27: 370. 2009 ≡ *Karpatiosorbus houstoniae* (T.C.G. Rich) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93:48. 2017 ≡ *Pyrus houstoniae* (T.C.G. Rich) M.F. Fay & Christenh., Global Fl. 4: 107. 2018.

Aria joannis (Kárpáti) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus joannis* Kárpáti, Acta Bot. Hung. 52: 140. 1966 ≡ *Karpatiosorbus joannis* (Kárpáti) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 55. 2017 ≡ *Pyrus joannis* (Kárpáti) M.F. Fay & Christenh., Global Fl. 4: 108. 2018.

Aria karpatii (Boros) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus karpatii* Boros, Agrártud. Egyet. Kert- Szölögazdaságtud. Karának Közlem. 13: 153. 1949 ≡ *Karpatiosorbus karpatii* (Boros) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 60. 2017 ≡ *Pyrus karpatii* (Boros) M.F. Fay & Christenh., Global Fl. 4: 109. 2018.

Aria klasterskyana (Kárpáti) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus klasterskyana* Kárpáti, Fl. Slovenska IV/3: 437. 1992 ≡ *Karpatiosorbus klasterskyana* (Kárpáti) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 55. 2017. ≡ *Pyrus klasterskyana* (Kárpáti) M.F. Fay & Christenh., Global Fl. 4: 109. 2018.

Aria kmetiana (Kárpáti) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus kmetiana* Kárpáti, Fl. Slovenska IV/3: 440. 1992 ≡ *Karpatiosorbus kmetiana* (Kárpáti) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 56. 2017 ≡ *Pyrus kmetiana* (Kárpáti) M.F. Fay & Christenh., Global Fl. 4: 109. 2018.

Aria latisedes (N. Mey. & Meierott) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus latisedes* N. Mey. & Meierott, Ber. Bayer. Bot. Ges. 91: 65. 2021 ≡ *Karpatiosorbus latisedes* (N. Mey. & Meierott) N. Mey. in M. Hassler & T. Muer, Fl. German. 3: 649. 2024.

Aria magocsyana (Kárpáti) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus magocsyana* Kárpáti, Acta Bot. Hung. 52: 388. 2010 ≡ *Karpatiosorbus magocsyana* (Kárpáti) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 57. 2017 ≡ *Pyrus magocsyana* (Kárpáti) M.F. Fay & Christenh., Global Fl. 4: 111. 2018.

Aria meierottii (N. Mey.) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus meierottii* N. Mey., Ber. Bayer. Bot. Ges. Sonderband (Beitr. Sorbus Bayern): 169. 2005 ≡ *Karpatiosorbus meierottii* (N. Mey.) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 54. 2017 ≡ *Pyrus meierottii* (N. Mey.) M.F. Fay & Christenh., Global Fl. 4: 111. 2018.

Aria mergenthaleriana (N. Mey.) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus mergenthaleriana* N. Mey., Ber. Bayer. Bot. Ges. Sonderband (Beitr. Sorbus Bayern): 154. 2005 ≡ *Karpatiosorbus mergenthaleriana* (N. Mey.) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 53. 2017 ≡ *Pyrus mergenthaleriana* (N. Mey.) M.F. Fay & Christenh., Global Fl. 4: 112. 2018.

Aria meyeri (S. Hammel & Haynold) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus meyeri* S. Hammel & Haynold, Kochia 8: 2. 2014 ≡ *Karpatiosorbus meyeri* (S. Hammel & Haynold) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 54. 2017 ≡ *Pyrus meyeri* (S. Hammel & Haynold) M.F. Fay & Christenh., Global Fl. 4: 106. 2018.

Aria milensis (M. Lepší, Boublík, P. Lepší & Vít) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus milensis* M. Lepší, Boublík, P. Lepší & Vít, Preslia 80: 235. 2008 ≡ *Karpatiosorbus milensis* (M. Lepší, Boublík, P. Lepší & Vít) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 51. 2017 ≡

Pyrus milensis (M. Lepší, Boublík, P. Lepší & Vít) M.F. Fay & Christenh., Global Fl. 4: 112. 2018.

Aria moenofranconica (N. Mey. & Meierott) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus moenofranconica* N. Mey. & Meierott, Ber. Bayer. Bot. Ges. 91: 57. 2021 ≡ *Karpatiosorbus moenofranconica* (N. Mey. & Meierott) N. Mey. in M. Hassler & T. Muer, Fl. German. 3: 650. 2024.

Aria omissa (Velebil) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus omissa* Velebil, Preslia 84: 377. 2012 ≡ *Karpatiosorbus omissa* (Velebil) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 50. 2017 ≡ *Pyrus omissa* (Velebil) M.F. Fay & Christenh., Global Fl. 4: 125. 2018.

Aria paxiana (Jáv.) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus paxiana* Jáv., Magyar Bot. Lapok 25: 89. 1927 (vol. of "1926") ≡ *Karpatiosorbus paxiana* (Jáv.) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 62. 2017 ≡ *Pyrus paxiana* (Jáv.) M.F. Fay & Christenh., Global Fl. 4: 115. 2018.

Aria pelsoensis (C. Németh) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus pelsoensis* C. Németh, Stud. Bot. Hung. 46: 50. 2015 ≡ *Karpatiosorbus pelsoensis* (C. Németh) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 59. 2017 ≡ *Pyrus pelsoensis* (C. Németh) M.F. Fay & Christenh., Global Fl. 4: 115. 2018.

Aria perlonga (Meierott) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus perlonga* Meierott, Ber. Bayer. Bot. Ges. Sonderband (Beitr. Sorbus Bayern): 187. 2005 ≡ *Karpatiosorbus perlonga* (Meierott) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 53. 2017 ≡ *Pyrus perlonga* (Meierott) M.F. Fay & Christenh., Global Fl. 4: 115. 2018.

Aria petraea (Velebil, M. Lepší & P. Lepší) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus petraea* Velebil, M. Lepší & P. Lepší, Preslia 94: 320. 2022.

Aria polgariana (C. Németh) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus polgariana* C. Németh, Acta Bot. Hung. 54: 132. 2012 ≡ *Karpatiosorbus polgariana* (C. Németh) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 59. 2017 ≡ *Pyrus polgariana* (C. Németh) M.F. Fay & Christenh., Global Fl. 4: 116. 2018.

Aria portae-bohemicae (M. Lepší, Boublík, P. Lepší & Vít) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus portae-bohemicae* M. Lepší, Boublík, P. Lepší & Vít, Preslia 81: 72. 2009 ≡ *Karpatiosorbus portae-bohemicae* (M. Lepší, Boublík, P. Lepší & Vít) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 51. 2017 ≡ *Pyrus portae-bohemicae* (M. Lepší, Boublík, P. Lepší & Vít) M.F. Fay & Christenh., Global Fl. 4: 116. 2018.

Aria pseudobakonyensis (Kárpáti) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus pseudobakonyensis* Kárpáti, Hung. Acta Biol. 1: 117. 1949 ≡ *Karpatiosorbus pseudobakonyensis* (Kárpáti) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 60. 2017 ≡ *Pyrus pseudobakonyensis* (Kárpáti) M.F. Fay & Christenh., Global Fl. 4: 117. 2018.

Aria pseudolatifolia (Boros) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus pseudolatifolia* Boros, Magyar Kir. Kert. Tanintéz. Közlem. 3: 51. 1937 ≡ *Karpatiosorbus pseudolatifolia* (Boros) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 58. 2017 ≡ *Pyrus pseudolatifolia* (Boros) M.F. Fay & Christenh., Global Fl. 4: 117. 2018.

Aria pseudosemi-incisa (Boros) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus pseudosemi-incisa* Boros, Magyar Kir. Kert. Tanintéz. Közlem. 3: 53. 1937 ≡ *Karpatiosorbus pseudosemi-incisa* (Boros) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 61. 2017 ≡ *Pyrus pseudosemi-incisa* (Boros) M.F. Fay & Christenh., Global Fl. 4: 117. 2018.

Aria pseudovertesensis (Boros) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus pseudovertesensis* Boros, Magyar Kir. Kert. Tanintéz. Közlem. 3: 53. 1937 ≡ *Karpatiosorbus pseudovertesensis* (Boros) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 62. 2017 ≡ *Pyrus pseudovertesensis* (Boros) M.F. Fay & Christenh., Global Fl. 4: 117. 2018.

Aria puellarum (Meierott) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus puellarum* Meierott, Ber. Bayer. Bot. Ges. Sonderband (Beitr. Sorbus Bayern): 190. 2005 ≡ *Karpatiosorbus puellarum* (Meierott) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 53. 2017 ≡ *Pyrus puellarum* (Meierott) M.F. Fay & Christenh., Global Fl. 4: 117. 2018.

Aria ratisbonensis (N. Mey.) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus ratisbonensis* N. Mey., Ber. Bayer. Bot. Ges. Sonderband (Beitr. Sorbus Bayern): 158. 2005 ≡ *Karpatiosorbus ratisbonensis* (N. Mey.) Sennikov & Kurtto,

Memoranda Soc. Fauna Fl. Fenn. 93: 53. 2017 ≡ *Pyrus ratisbonensis* (N. Mey.) M.F. Fay & Christenh., Global Fl. 4: 117. 2018.

Aria redliana (Kárpáti) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus redliana* Kárpáti, Hung. Acta Biol. 1: 118. 1949 ≡ *Karpatiosorbus redliana* (Kárpáti) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 62. 2017 ≡ *Pyrus redliana* (Kárpáti) M.F. Fay & Christenh., Global Fl. 4: 118. 2018.

Aria remensis (Cornier) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus remensis* Cornier, Bull. Mens. Soc. Linn. Lyon 78: 36. 2009. ≡ *Karpatiosorbus remensis* (Cornier) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 50. 2017 ≡ *Pyrus gallica* M.F. Fay & Christenh., Global Fl. 4: 104. 2018 (non *Pyrus remensis* Poit. & Turpin, Pomol. Franç. 3: tab. 200. 1846).

Aria rhodanthera (Kovanda) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus rhodanthera* Kovanda, Verh. Zool.-Bot. Ges. Österreich 133: 321. 1996 ≡ *Karpatiosorbus rhodanthera* (Kovanda) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 51. 2017 ≡ *Pyrus rhodanthera* (Kovanda) M.F. Fay & Christenh., Global Fl. 4: 118. 2018.

Aria rhombiformis (C. Németh) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus rhombiformis* C. Németh, Stud. Bot. Hung. 47: 305. 2016 ≡ *Karpatiosorbus rhombiformis* (C. Németh) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 58. 2017 ≡ *Pyrus rhombiformis* (C. Németh) M.F. Fay & Christenh., Global Fl. 4: 118. 2018.

Aria schnizleiniana (N. Mey.) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus schnizleiniana* N. Mey., Ber. Bayer. Bot. Ges. Sonderband (Beitr. Sorbus Bayern): 146. 2005 ≡ *Karpatiosorbus schnizleiniana* (N. Mey.) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 52. 2017 ≡ *Pyrus schnizleiniana* (N. Mey.) M.F. Fay & Christenh., Global Fl. 4: 120. 2018.

Aria schuwerkiorum (N. Mey.) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus schuwerkiorum* N. Mey., Ber. Bayer. Bot. Ges. Sonderband (Beitr. Sorbus Bayern): 162. 2005 ≡ *Karpatiosorbus schuwerkiorum* (N. Mey.) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 53. 2017 ≡ *Pyrus schuwerkiorum* (N. Mey.) M.F. Fay & Christenh., Global Fl. 4: 120. 2018.

Aria sellii (T.C.G. Rich) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus sellii* T.C.G. Rich, New J. Bot. 4: 7. 2014 ≡ *Karpatiosorbus sellii* (T.C.G. Rich) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93:50. 2017 ≡ *Pyrus sellii* (T.C.G. Rich) M.F. Fay & Christenh., Global Fl. 4: 121. 2018.

Aria semi-incisa (Borbás) Beck, Fl. Nieder-Österreich 2(1): 714. 1892 ≡ *Sorbus aria* f. *semi-incisa* Borbás, Ertek. Természettud. Köréb. Magyar Tud. Akad. 11(113): 34. 1879 ≡ *Sorbus aria* var. *semi-incisa* (Borbás) Borbás, Földmivelési Érdekeink 10(48): 520. 1882 ≡ *Sorbus semi-incisa* (Borbás) Borbás, Földmiv. Érdek.: 520. 1882. ≡ *Karpatiosorbus semi-incisa* (Borbás) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 61. 2017. ≡ *Pyrus semi-incisa* (Borbás) M.F. Fay & Christenh., Global Fl. 4: 121. 2018.

Aria seyboldiana (S. Hammel & Haynold) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus seyboldiana* S. Hammel & Haynold, Jahresh. Naturk. Württemberg 171: 52. 2015 ≡ *Karpatiosorbus seyboldiana* (S. Hammel & Haynold) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 54. 2017 ≡ *Pyrus seyboldiana* (S. Hammel & Haynold) M.F. Fay & Christenh., Global Fl. 4: 121. 2018.

Aria simonkaiana (Kárpáti) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus simonkaiana* Kárpáti, Agrártud. Egyet. Kert- Szölögazdaságtud. Karának Évk. 1(14): 38. 1950 ≡ *Karpatiosorbus simonkaiana* (Kárpáti) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 62. 2017 ≡ *Pyrus simonkaiana* (Kárpáti) M.F. Fay & Christenh., Global Fl. 4: 121. 2018.

Aria slovenica (Kovanda) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus slovenica* Kovanda, Acta Univ. Carol., Biol. 1961(1): 73. 1961 ≡ *Karpatiosorbus slovenica* (Kovanda) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 54. 2017 ≡ *Pyrus slovenica* (Kovanda) M.F. Fay & Christenh., Global Fl. 4: 121. 2018.

Aria subcuneata (Wilmott) Mosyakin, Fedor. & McNeill, **comb. nov** ≡ *Sorbus subcuneata* Wilmott, Proc. Linn. Soc. Lond. 146: 76. 1934 ≡ *Karpatiosorbus subcuneata* (Wilmott) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 49. 2017 ≡ *Pyrus subcuneata* (Wilmott) M.F. Fay & Christenh., Global Fl. 4: 122. 2018.

Aria tobani (C. Németh) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus tobani* C. Németh, Fl.

Pannonica 5: 177. 2007 ≡ *Karpatiosorbus tobani* (C. Németh) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 58. 2017 ≡ *Pyrus tobani* (C. Németh) M.F. Fay & Christenh., Global Fl. 4: 123. 2018.

Aria udvardyana (Somlyay & Sennikov) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus udvardyana* Somlyay & Sennikov, Phytotaxa 164: 268. 2014 ≡ *Karpatiosorbus udvardyana* (Somlyay & Sennikov) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 59. 2017 ≡ *Pyrus udvardyana* (Somlyay & Sennikov) M.F. Fay & Christenh., Global Fl. 4: 124. 2018.

Aria vallerubusensis (C. Németh) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus vallerubusensis* C. Németh, Kitaibelia 14: 97. 2009 ≡ *Karpatiosorbus vallerubusensis* (C. Németh) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 62. 2017 ≡ *Pyrus vallerubusensis* (C. Németh) M.F. Fay & Christenh., Global Fl. 4: 124. 2018.

Aria vallusensis (C. Németh) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus vallusensis* C. Németh, Stud. Bot. Hung. 47: 310. 2016 ≡ *Karpatiosorbus vallusensis* (C. Németh) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 59. 2017 ≡ *Pyrus vallusensis* (C. Németh) M.F. Fay & Christenh., Global Fl. 4: 124. 2018.

Aria vertesensis (Boros) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus vertesensis* Boros, Magyar Kir. Kert. Tanintéz. Közlem. 3: 52. 1937 ≡ *Karpatiosorbus vertesensis* (Boros) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 62. 2017. ≡ *Pyrus vertesensis* (Boros) M.F. Fay & Christenh., Global Fl. 4: 125. 2018.

Aria veszpremensis (Barabits) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus veszpremensis* Barabits, Tilia 13: 17. 2007 ≡ *Karpatiosorbus veszpremensis* (Barabits) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 60. 2017 ≡ *Pyrus veszpremensis* (Barabits) M.F. Fay & Christenh., Global Fl. 4: 125. 2018.

Aria zertovae (Kárpáti) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus zertovae* Kárpáti, Bot. Közlem. 52: 137. 1966, as "žertovae" ≡ *Karpatiosorbus zertovae* (Kárpáti) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 55. 2017 ≡ *Pyrus zertovae* (Kárpáti) M.F. Fay & Christenh., Global Fl. 4: 126. 2018.

Aria zuzanae (Bernátová & Májovský) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus zuzanae* Májovský & Bernátová, Biologia (Bratislava) 58: 784. 2003 ≡ *Majovskya zuzanae* (Bernátová & Májovský) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 64. 2017 ≡ *Pyrus zuzanae* (Májovský & Bernátová) M.F. Fay & Christenh., Global Fl. 4: 126. 2018.

Hedlundia Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 33. 2017.

= *Borkhausenia* Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 44. 2017 (nom. illeg., non *Borckhausenia* G. Gaertn., B. Mey. & Scherb., non *Borckhausenia* Roth)

= *Normeyera* Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 64. 2017.

= *Scandosorbus* Sennikov, Ann. Bot. Fenn. 55: 322. 2018.

Hedlundia atrimontis (Bernátová & Májovský) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus atrimontis* Bernátová & Májovský, Biologia (Bratislava) 58: 786. 2003 ≡ *Normeyera atrimontis* (Bernátová & Májovský) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 65. 2017 ≡ *Pyrus atrimontis* (Bernátová & Májovský) M.F. Fay & Christenh., Global Fl. 4: 96. 2018.

Hedlundia caeruleomontana (Bernátová & Májovský) Mosyakin, Fedor. & McNeill, **comb. nov**. ≡ *Sorbus caeruleomontana* Bernátová & Májovský, Biologia (Bratislava) 58: 786. 2003 ≡ *Normeyera caeruleomontana* (Bernátová & Májovský) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 65. 2017. ≡ *Pyrus caeruleomontana* (Bernátová & Májovský) M.F. Fay & Christenh., Global Fl. 4: 99. 2018.

Hedlundia diversicolor (Bernátová & Májovský) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus diversicolor* Bernátová & Májovský, Biologia (Bratislava) 58: 788. 2003 ≡ *Normeyera diversicolor* (Bernátová & Májovský) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 65. 2017 ≡ *Pyrus diversicolor* (Bernátová & Májovský) M.F. Fay & Christenh., Global Fl. 4: 102. 2018.

Hedlundia doerriana (N. Mey.) Mosyakin, Fedor. & McNeill, **comb. nov**. ≡ *Sorbus doerriana* N. Mey., Ber. Bayer. Bot. Ges. 86: 228. 2016 ≡ *Normeyera doerriana* (N. Mey.) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 66. 2017 ≡ *Pyrus doerriana* (N. Mey.) M.F. Fay & Christenh., Global Fl. 4: 102. 2018.

Hedlundia hostii (J. Jacq. ex Host) Mosyakin, Fedor. & McNeill, **comb. nov**. ≡ *Aria hostii* J. Jacq.

ex Host, Fl. Austriaca 2: 8. 1831 ≡ *Sorbus hostii* (J. Jacq. ex Host) Heynh., Nom. Bot. Hort.: 685. 1841 ≡ *Pyrus hostii* (J. Jacq. ex Host) Endl., Cat. Hort. Vindob. 2: 440. 1842 ≡ *Aronia hostii* (J. Jacq. ex Host) Carrière, Rev. Hort. (Paris) 45: 470. 1873 ≡ *Aria chamaemespilus* subsp. *hostii* (J. Jacq. ex Host) Bonnier & Layens, Tabl. Syn. Pl. Vasc. France: 103. 1894 ≡ *Chamaemespilus hostii* (J. Jacq. ex Host) Rouy & E.G. Camus in G. Rouy & J. Foucaud, Fl. France 7: 26. 1901 ≡ ×*Chamariosorbus hostii* (J. Jacq. ex Host) Mezhenskyj in Mezhenskyj et al., Netradytsiyni plodovi kul'tury: 29. 2012 ≡ *Normeyera hostii* (J. Jacq. ex Host) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 65. 2017.

Hedlundia intermedia (Ehrh.) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Pyrus intermedia* Ehrh., Gartenkalender 4: 197. 1784 ≡ *Lazarolus intermedia* (Ehrh.) Borkh., Arch. Bot. (Leipzig) 1(3): 88. 1798 ≡ *Sorbus intermedia* (Ehrh.) Pers., Syn. Pl. 2: 38. 1806 ≡ *Aria intermedia* (Ehrh.) Schur, Enum. Pl. Transsilv.: 207. 1866 ≡ *Hahnia intermedia* (Ehrh.) Samp., Anais Fac. Sci. Porto 17: 47. 1931 ≡ ×*Tormariosorbus intermedia* (Ehrh.) Mezhenskyj in Mezhenskyj et al., Netradytsiyni plodovi kul'tury: 29. 2012 ≡ ×*Sorbotoraria intermedia* (Ehrh.) Mezhenskyj in Mezhenskyj et al., Netradytsiyni plodovi kul'tury: 29. 2012, nom. inval. ≡ *Borkhausenia intermedia* (Ehrh.) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 44. 2017 ≡ *Scandosorbus intermedia* (Ehrh.) Sennikov, Ann. Bot. Fenn. 55: 323. 2018.

Hedlundia liljeforsii (T.C.G. Rich) Mosyakin, Fedor. & McNeill, **comb. nov**. ≡ *Sorbus liljeforsii* T.C.G. Rich, Nordic J. Bot. 25: 339. 2008 ≡ *Borkhausenia liljeforsii* (T.C.G. Rich) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 46. 2017 ≡ *Scandosorbus liljeforsii* (T.C.G. Rich) Sennikov, Ann. Bot. Fenn. 55: 323. 2018 ≡ *Pyrus liljeforsii* (T.C.G. Rich) M.F. Fay & Christenh., Global Fl. 4: 110. 2018.

Hedlundia margittaiana (Jáv.) Mosyakin, Fedor. & McNeill, **comb. nov**. ≡ *Sorbus hostii* subsp. *margittaiana* Jáv., Exsicc. (Fl. Hung.) 8: 27. 1927 ≡ *Sorbus margittaiana* (Jáv.) Kárpáti, Feddes Repert. Spec. Nov. Regni Veg. 62: 304. 1960 ≡ *Normeyera margittaiana* (Jáv.) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 65. 2017 ≡ *Pyrus margittaiana* (Jáv.) M.F. Fay & Christenh., Global Fl. 4: 111. 2018.

Hedlundia montisalpae (Bernátová & Májovský) Mosyakin, Fedor. & McNeill, **comb. nov**. ≡ *Sorbus montisalpae* Bernátová & Májovský, Biologia (Bratislava) 58: 788. 2003 ≡ *Normeyera montisalpae* (Bernátová & Májovský) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 66. 2017 ≡ *Pyrus montisalpae* (Bernátová & Májovský) M.F. Fay & Christenh., Global Fl. 4: 112. 2018.

Hedlundia paxiana (Jáv.) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus paxiana* Jáv., Magyar Bot. Lapok 25: 89. 1926 publ. 1927 ≡ *Karpatiosorbus paxiana* (Jáv.) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 62. 2017 ≡ *Pyrus paxiana* (Jáv.) M.F. Fay & Christenh., Global Fl. 4: 115. 2018.

Hedlundia salatini (Bernátová & Májovský) Mosyakin, Fedor. & McNeill, **comb. nov**. ≡ *Sorbus salatini* Bernátová & Májovský, Biologia (Bratislava) 58: 790. 2003 ≡ *Normeyera salatini* (Bernátová & Májovský) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 66. 2017 ≡ *Pyrus salatini* (Bernátová & Májovský) M.F. Fay & Christenh., Global Fl. 4: 120. 2018.

Hedlundia schinzii (Düll) Mosyakin, Fedor. & McNeill, **comb. nov**. ≡ *Sorbus schinzii* Düll, Ber. Bayer. Bot. Ges. 34: 61. 1961 ≡ *Normeyera schinzii* (Düll) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 65. 2017 ≡ *Pyrus schinzii* (Düll) M.F. Fay & Christenh., Global Fl. 4: 120. 2018.

Hedlundia tauricola (Jáv.) Mosyakin, Fedor. & McNeill, **comb. nov.** ≡ *Sorbus tauricola* Zaik. ex Sennikov, Willdenowia 43: 39. 2013 [Zaik., Novosti Sist. Vyssh. Rast. 22: 137. 1985, nom. inval.] ≡ *Karpatiosorbus tauricola* (Zaik. ex Sennikov) Sennikov & Kurtto, Memoranda Soc. Fauna Fl. Fenn. 93: 63. 2017 ≡ *Pyrus tauricola* (Zaik. ex Sennikov) M.F. Fay & Christenh., Global Fl. 4: 123. 2018 ≡ *Aria tauricola* (Zaik. ex Sennikov) Fedor., Chornomors'k. Bot. Zhurn. 18(4): 314. 2022 [Fedor., Ukrayins'k. Bot. Zhurn. 74: 10. 2017, nom. inval.].

Nomenclatural comments on some Caucasian and other western Asian species of *Aria*

Several taxa of *Sorbus* s. l., mainly Caucasian or western Asian ones (see earlier treatments by Gabrielian, 1972, 1978, etc.), have been already transferred to *Aria* by Mezhenskyj (in Mezhenska et al., 2018): *Aria albovii* (Zinzerl.) Mezhenskyj (≡ *Sorbus albovii* Zinserl.), *Aria buschiana* (Zinzerl.) Mezhenskyj

(≡ *Sorbus buschiana* Zinserl.), *Aria fedorovii* (Zaikonn.) Mezhenskyj (≡ *Sorbus fedorovii* Zaikonn. ≡ *Pyrus alma* M.F. Fay & Christenh.), *Aria migarica* (Zinzerl.) Mezhenskyj (≡ *Sorbus migarica* Zinserl.), *Aria schemachensis* (Zinzerl.) Mezhenskyj (≡ *Sorbus schemachensis* Zinserl.), *Aria subtomentosa* (Albov) Mezhenskyj (≡ *Sorbus aria* var. *subtomentosa* Albov ≡ *Sorbus subtomentosa* (Albov) Zinserl.), and *Aria velutina* (Albov) Mezhenskyj (≡ *Sorbus aria* var. *velutina* Albov ≡ *Sorbus velutina* (Albov) C.K. Schneid.). An interesting nomenclatural case of one additional transfer made by Mezhenskyj in this group will be discussed in a separate comment. In the same book (Mezhenska et al., 2018), he also made numerous new combinations in *Hedlundia* and *Micromeles* for Asian taxa.

When making new combinations in *Aria* for the mentioned western Asian (mainly Caucasian) taxa, Mezhenskyj (in Mezhenska et al., 2018) commented: "For *Sorbus subfusca* (Ledeb.) Boiss. there is already available name *Aria szovitsii* Decne. provided by Joseph Decaisne (Decaisne, 1874)" [Ukrainian original text: "Для *Sorbus subfusca* (Ledeb.) Boiss. вже існує назва *Aria szovitsii* Decne., надана Жозефом Декеном (Decaisne, 1874)"]. This statement needs taxonomic and nomenclatural clarification, which is provided below.

Boissier (1872: 658) made a new combination *Sorbus subfusca* (Ledeb. ex Nordm.) Boiss. (based on *Crataegus subfusca* Ledeb. ex Nordm., in Nordmann, 1837). Decaisne (1874: 165) coined the name *Aria szovitsii* Decne., listed "Sorbus Aria γ concolor, Boiss., *Fl. orient*. II, p. 658 ?" as a probable (!) synonym, and provided under his new taxon name the following note: "Obs. Je suis porté à croire que le *Crataegus subfusca*, Ledeb., devra se classer dans le genre *Aria*, opinion vers laquelle semble également incliner M. Boissier (*Fl. orient*., II, p. 659)" ["I am inclined to believe that *Crataegus subfusca* Ledeb. should be classified in the genus *Aria*, an opinion towards which Mr. Boissier also seems to incline..."]. It is not explicitly clear from this note whether or not he considered *C. subfusca* a synonym of his *A. szovitsii*, or just mentioned Ledebour's taxon as one more possible addition to the genus *Aria*. In any case, the two names are now considered taxonomically applicable to the same taxon and thus we provide here the new combination for it in the genus *Aria*, using the oldest available species-rank epithet:

Aria subfusca (Ledeb. ex Nordm.) Mosyakin, Fedor. & McNeill, comb. nov. ≡ *Crataegus subfusca* Ledeb. ex Nordm., Bull. Sci. Acad. Imp. Sci. Saint-Pétersbourg 2: 313. 1837 ≡ *Pyrus subfusca* (Ledeb. ex Nordm.) Regel, Trudy Imp. S.-Peterburgsk. Bot. Sada 1: 126. 1871 ≡ *Sorbus subfusca* (Ledeb. ex Nordm.) Boiss., Fl. Orient. 2: 658. 1872 ≡ *Pyrus mars* M.F. Fay & Christenh., Global Fl. 4: 111. 2018 (nom superfl., see comments below).

When proposing *Pyrus mars*, the replacement name for *Crataegus subfusca* Ledeb. ex Nordm., Fay and Christenhusz (in Christenhusz et al., 2018: 111) added "not: *Pyrus subfusca* Regel". However, the name published by Regel (1871) is definitely a new combination for which the basionym (in modern terms) was cited by Regel when he listed the names that, in his opinion, should be excluded from *Crataegus* and placed in other genera. Thus, he effectively transferred the name *Crataegus subfusca* to *Pyrus*. However, in the IPNI the basionym of the name *Pyrus subfusca* is not mentioned (https://ipni.org/n/731271-1, accessed 15 March 2025), which caused the confusion and the unnecessary replacement name.

The nothogeneric name for non-stable hybrids between *Aria* and *Sorbus*: now available

Several nothogeneric names have been proposed for various hybrids between segregate genera of the informal *Sorbus* group, for example: ×*Chamaearia* Mezhenskyj (Mezhenskyi et al., 2012: 27, with ×*Chamaearia sudetica* (Tausch) Mezhenskyj) for *Aria* × *Chamaemespilus*, ×*Chamariosorbus* Mezhenskyj (Mezhenskyj et al., 2012: 29, with ×*Chamariosorbus hostii* (Jacq.) Mezhenskyj) for *Aria* × *Chamaemespilus* × *Sorbus*, etc.

However, as rather convincingly demonstrated by Sennikov and Kurtto (2017: 8), the name *Ariosorbus* Koidzumi (earlier often cited as "×*Ariosorbus*") cannot be applied to spontaneous and artificial hybrids between *Aria* and *Sorbus*. Thus, the spontaneous non-stabilized hybrids between *Sorbus* and *Aria* until recently had no suitable nothogeneric name complying with the provisions of Art. H.6.1 and H.6.2 of the *ICN*. In accordance with that conclusion, we (Mosyakin and McNeill) discussed and considered in our email exchange a possible nothogeneric name for non-stabilized hybrids between taxa belonging to *Aria* s. l. and *Sorbus* ("×*Aribus*", nomen provisorum). However, the nothogeneric name ×*Arsorbus* Su Liu & Z.H. Feng and the nothospecies-rank nomenclatural combination ×*Arsorbus thuringiaca* (Nyman) Z.H. Feng

& Su Liu have been recently published (Feng et al., 2024: 25), and these names are now applicable to the taxon earlier known under the names *Aria* ×*thuringiaca* (Nyman) Beck, *Hedlundia* ×*thuringiaca* (Nyman) Sennikov & Kurtto, or *Sorbus* ×*thuringiaca* (Nyman) Fritsch, if its members are treated as non-stabilized hybrids, not as representatives of a hybridogenous species. In the latter case (if treated as a hybridogenous species), it should be placed in *Hedlundia*; see also comments in our proposal (Mosyakin, McNeill, 2023) to amend Art. H.11.1 of the *ICN*; this proposal, however, was rejected (see Turland, Wiersema, 2024; Turland et al., 2024).

Conclusions

Following the decision of the General Committee to conserve the name *Aria* against *Chamaemespilus* and *Torminalis*, 104 new nomenclatural combinations (91 in *Aria* and 13 in *Hedlundia*) are made here for various taxa earlier placed in *Sorbus* or several segregate genera. In particular, the European taxa of *Sorbus* s. l. accepted by Sennikov and Kurtto (2017) and in *Atlas Florae Europaeae* (Kurtto et al., 2018) mostly in hybridogenous genera *Karpatiosorbus* (combining the subgenomes of *Aria* and *Torminalis*) and *Majovskya* (with subgenomes of *Aria* and *Chamaemespilus*) are here transferred to *Aria*. The names of hybridogenous genera *Normeyera* and *Scandosorbus* (including taxa that supposedly emerged from hybridization events combining *Aria* × *Chamaemespilus* × *Sorbus* and *Aria* × *Sorbus* × *Torminalis*, respectively) are here treated as synonyms of the hybridogenous generic name *Hedlundia* (*Aria* s. l. × *Sorbus*), and the taxa earlier treated in *Normeyera* and *Scandosorbus* are transferred to *Hedlundia*. One new combination, *Aria subfusca*, is also validated for a Caucasian and southeastern Asian taxon.

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The authors declare no conflict of interest.

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REFERENCES

Aldasoro J.J., Aedo C., Navarro C., Muñoz Garmendia F. 1998. The genus *Sorbus* (*Maloideae*, *Rosaceae*) in Europe and in North Africa: Morphological analysis and systematics. *Systematic Botany*, 23(2): 189–212. https://doi.org/10.2307/2419588

Andersen H., Dhakal N., Parsian H., Salvesen P.H., Bjune A. 2024. Pollen morphology of Norwegian hybrids of *Sorbus* L. *Nordic Journal of Botany*, 2024(5): e04134. https://doi.org/10.1111/njb.04134

Applequist W.L. 2024. Report of the Nomenclature Committee for Vascular Plants: 75. *Taxon*, 73(1): 288–304. https://doi.org/10.1002/tax.13134

Boissier E. 1872. *Flora Orientalis, sive Enumeratio plantarum in Oriente a Graecia et Aegypto ad Indiae fines hucusque observatarum*. Vol. 2. Genevae [Geneva] et Basileae [Basle]: H. Georg, 1159 pp. https://doi.org/10.5962/bhl.title.20323

Decaisne J. 1874. Mémoire sur la famille des Pomacées. *Nouvelles Archives du Muséum d'Histoire Naturelle de Paris*, *sér. 1*, 10: 113–192.

Campbell C.S., Baldwin B.G., Donoghue M.J., Wojciechowski M.F. 1995. A phylogeny of the genera of *Maloideae* (*Rosaceae*): Evidence from internal transcribed spacers of nuclear ribosomal DNA sequences and congruence with morphology. *American Journal of Botany*, 82(7): 903–918. https://doi.org/10.1002/j.1537-2197.1995.tb15707.x

Campbell C.S., Evans R.C., Morgan D.R., Dickinson T.A., Arsenault M.P. 2007. Phylogeny of subtribe *Pyrinae* (formerly the *Maloideae, Rosaceae*): Limited resolution of a complex evolutionary history. *Plant Systematics and Evolution*, 266: 119–145. https://doi.org/10.1007/s00606-007-0545-y

Christenhusz M.J.M., Fay M.F., Byng J.W. (eds). 2018. *The Global Flora. A practical flora to vascular plant species of the world*. Vol. 4. GLOVAP Nomenclature Part 1. Bradford: Plant Gateway, 155 pp.

Evans R.C., Campbell C.S. 2002. The origin of the apple subfamily *Maloideae* (*Rosaceae*) is clarified by DNA sequence data from duplicated GBSSI genes. *American Journal of Botany*, 89(9): 1478–1484. https://doi.org/10.3732/ajb.89.9.1478

Fay M.F., Rich T.C.G. 2022a. Rowans, whitebeams and service trees. *Curtis's Botanical Magazine*, 39(4): 621–630. https://doi.org/10.1111/curt.12485

Fay M.F., Rich T.C.G. 2022b. 1042. *Sorbus aria*: *Rosaceae*. *Curtis's Botanical Magazine*, 39(4): 655–668. https://doi.org/10.1111/curt.12476

Fedoronchuk M.M. 2017. Taxa of *Rosaceae* of the Ukrainian flora: position in a new system of the family according to molecular phylogenetic data. *Ukrainian Botanical Journal*, 74(1): 3–15. [Федорончук М.М. 2017. Таксони *Rosaceae* флори України: положення в новій системі родини, побудованій за даними молекулярно-філогенетичного аналізу. *Український ботанічний журнал*, 74(1): 3–15.] https://doi.org/10.15407/ukrbotj74.01.003

Fedoronchuk M.M. 2022. Ukrainian flora checklist. 4: family *Rosaceae* (*Rosales*, Angiosperms). *Chornomorski Botanical Journal*, 18(4): 305–349. [Федорончук М.М. 2022. Чекліст флори України. 4: родина *Rosaceae* (*Rosales*, Angiosperms). *Чорноморський ботанічний журнал*, 18(4): 305–349.] https://doi.org/10.32999/ksu1990-553X/2022-18-4-1

Feng Z.-H., Huang Z.-J., Lui B., Liu S. 2024. Nomenclatural novelties for intergeneric nothotaxa. *Phytoneuron*, 2024-85: 1–41. Available at: https://www.phytoneuron.net/wp-content/uploads/2024/12/85PhytoN-IntergenericNothotaxa.pdf

Feulner M., Weig A., Voss T., Schott L.F., Aas G. 2019. Central European polyploids of *Sorbus* subgenus *Aria* (*Rosaceae*) recurrently evolved from diploids of central and south-eastern Europe: evidence from microsatellite data. *Botanical Journal of the Linnean Society*, 191(3): 315–324. https://doi.org/10.1093/botlinnean/boz053

Gabrielian E.T. 1972. *Sorbus*. In: Davis P.H. (ed.). *Flora of Turkey and the East Aegean Islands*. Vol. 4. Edinburgh: Edinburgh University Press, 147–156 pp.

Gabrielian [Gabrieljan] E.Tz. 1978. *Rowans (Sorbus L.) of Western Asia and the Himalayas*. Erevan: Academy of Sciences of the Armenian SSR, 264 pp. + 62 pl. [Габриэлян Э.Ц. 1978. *Рябины (Sorbus L.) Западной Азии и Гималаев*. Ереван: Издательство АН Армянской ССР, 264 с. + 62 таб.]

Greuter W., Rankin Rodríguez R.G., Zamora Señoret J.C., Parra Sánchez L.A. (transl.). 2025. *Código Internacional de Nomenclatura para algas, hongos y plantas. VI edición en español (Código de Madrid)* [Traducción de: Turland et al., *International Code of Nomenclature for algae, fungi, and plants (Madrid Code)*, *Regnum Vegetabile*, vol. 162. Chicago: The University of Chicago Press]. Berlín: Stiftung Herbarium Greuter, liv + 344 pp. [*Occasional Papers from the Herbarium Greuter* series, vol. 6.]

Hajrudinović-Bogunić A., Siljak-Yakovlev S., Brown S.C., Pustahija F., Bourge M., Ballian D., Bogunić F. 2015. When sexual meets apomict: genome size, ploidy level and reproductive mode variation of *Sorbus aria* s. l. and *S. austriaca* (*Rosaceae*) in Bosnia and Herzegovina. *Annals of Botany*, 116(2): 301–312. https://doi.org/10.1093/aob/mcv093

Hajrudinović-Bogunić A., Frajman B., Schönswetter P., Siljak-Yakovlev S., Bogunić F. 2023. Apomictic Mountain Whitebeam (*Sorbus austriaca*, *Rosaceae*) comprises several genetically and morphologically divergent lineages. *Biology*, 12(3): art. 380. https://doi.org/10.3390/biology12030380

Hassler M., Muer T. 2024. *Flora Germanica. Alle Farn- und Blütenpflanzen Deutschlands in Text und Bild*. Band 3: Kritische Gattungen 1. Ubstadt-Weiher: Verlag Regionalkultur, 800 S.

Hedlund T. 1901. Monographie der Gattung *Sorbus*. *Kongliga Svenska Vetenskaps-Akademiens Handlingar*, *Ny följd* [*new ser.*], 35(1): 1–147. https://www.biodiversitylibrary.org/item/107159#page/9/mode/1up

Kalkman C. 2004. *Rosaceae*. In: *The families and genera of vascular plants*. Vol. 6. *Flowering plants. Dicotyledons: Celastrales, Oxalidales, Rosales, Cornales, Ericales*. Ed. K. Kubitzki, Berlin & Heidelberg: Springer, pp. 343–386. https://doi.org/10.1007/978-3-662-07257-8_39

Kurtto A., Sennikov A.N., Lampinen R. (eds.). 2018. *Atlas Florae Europaeae. Distribution of vascular plants in Europe*. Vol. 17. *Rosaceae* (*Sorbus* s. lato). Helsinki: The Committee for Mapping the Flora of Europe and Societas Biologica Fennica Vanamo, 132 pp.

Lepší M., Lepší P., Koutecký P., Bílá J., Vít P. 2015. Taxonomic revision of *Sorbus* subgenus *Aria* occurring in the Czech Republic. *Preslia*, 87: 109–162.

Lepší M., Koutecký P., Nosková J., Lepší P., Urfus T., Rich T.C.G. 2019. Versatility of reproductive modes and ploidy level interactions in *Sorbus* s. l. (*Malinae*, *Rosaceae*). *Botanical Journal of the Linnean Society*, 191(4): 502–522. https://doi.org/10.1093/botlinnean/boz054

Levin J., Fay M.F., Pellicer J., Hedrén M. 2018. Multiple independent origins of intermediate species between *Sorbus aucuparia* and *S. hybrida* (*Rosaceae*) in the Baltic region. *Nordic Journal of Botany*, 36(12). https://doi.org/10.1111/njb.02035

Li M., Ohi-Toma T., Gao Y.-D., Xu B., Zhu Z.-M., Ju W.-B., Gao X.-F. 2017. Molecular phylogenetics and historical biogeography of *Sorbus* sensu stricto (*Rosaceae*). *Molecular Phylogenetics and Evolution*, 111: 76–86. https://doi.org/10.1016/j.ympev.2017.03.018

Li Q.-Y., Guo W., Liao W.-B., Macklin J.A., Li J.-H. 2012. Generic limits of *Pyrinae*: Insights from nuclear ribosomal DNA sequences. *Botanical Studies* (*Taipei*), 53: 151–164. Available at: https://ejournal.sinica.edu.tw/bbas/content/2012/1/Bot531-14.pdf

Liu B.-B., Hong D.-Y., Zhou S.-L., Xu C., Dong W.-P., Johnson G., Wen J. 2019. Phylogenomic analyses of the *Photinia* complex support the recognition of a new genus *Phippsiomeles* and the resurrection of a redefined *Stranvaesia* in *Maleae* (*Rosaceae*). *Journal of Systematics and Evolution*, 57(6): 678–694. https://doi.org/10.1111/jse.12542

Liu B.-B., Liu G.-N., Hong D.-Y., Wen J. 2020. *Eriobotrya* belongs to *Rhaphiolepis* (*Maleae*, *Rosaceae*): Evidence from chloroplast genome and nuclear ribosomal DNA data. *Frontiers in Plant Science*, 10: art. 1731. https://doi.org/10.3389/fpls.2019.01731

Lo E.Y.Y., Donoghue M.J. 2012. Expanded phylogenetic and dating analyses of the apples and their relatives (*Pyreae*, *Rosaceae*). *Molecular Phylogenetics and Evolution*, 63(2): 230–243. https://doi.org/10.1016/j.ympev.2011.10.005

Lu L.-T., Ku T.-C. 2002. *Pleiosorbus* is united with *Sorbus* (*Rosaceae*). *Acta Phytotaxonomica Sinica*, 40: 475–476.

Majeský L., Krahulec F., Vašut R.J. 2017. How apomictic taxa are treated in current taxonomy: A review. *Taxon*, 66(5): 1017–1040. https://doi.org/10.12705/665.3

Meyer N., Meierott L. 2021. Ergänzende Beiträge zur *Sorbus*-Flora von Bayern. *Berichte der Bayerischen Botanischen Gesellschaft*, 91: 21–48.

Mezhenska L.O., Mezhenskyj V.M., Yakubenko B.Ye. 2018. *NULESU* [*National University of Life and Environmental Sciences of Ukraine*] *collection of fruit and ornamental plants*. Kyiv: Lira-K, 107 pp. [Меженська Л.О., Меженський В.М., Якубенко Б.Є. 2018. *Колекція НУБіП України плодових і декоративних рослин*. Київ: Видавництво Ліра-К, 107 с.]

Mezhenskyj V.M., Mezhenska L.O., Melnichuk M.D., Yakubenko B.Ye. 2012. *Rare fruit crops: recommendations on breeding and propagation*. Kyiv: Phytosociocentre, 80 pp. [Меженський В.М., Меженська Л.О., Мельничук М.Д., Якубенко Б.Є. 2012. *Нетрадиційні плодові культури (рекомендації з селекції та вирощування садивного матеріалу)*. Київ: Фітосоціоцентр, 80 с.]

Morgan D.R., Soltis D.E., Robertson K.R. 1994. Systematic and evolutionary implications of *rbc*L sequence variation in *Rosaceae*. *American Journal of Botany*, 81: 890–903. https://doi.org/10.1002/j.1537-2197.1994.tb15570.x

Mosyakin S.L., McNeill J. 2023. (241) Proposal to amend Article H.11.1 by additionally allowing a combination of the name of a hybridogenous genus and a nothospecific epithet for naming a nothospecies of which the postulated or known parent species belong to different genera. *Taxon*, 72(2): 461–462. https://doi.org/10.1002/tax.12914

Mosyakin S.L., Fedoronchuk M.M., McNeill J. 2022. (2886) Proposal to conserve the name *Aria* against *Chamaemespilus* and *Torminalis* (*Rosaceae*). *Taxon*, 71(2): 480–481. https://doi.org/10.1002/tax.12705

Németh C., Papp N., Nosková J., Höhn M. 2020. Speciation by triparental hybridization in genus *Sorbus* (*Rosaceae*). *Biologia Futura*, 71: 209–222. https://doi.org/10.1007/s42977-020-00003-x

Nordmann A. 1837. Vorläufige Diagnosen einiger während einer naturwissenschaftlichen Reise im westlichen Theile der Kaukasischen Provinzen entdeckten und als neu erkannten Pflanzenspecies. *Bulletin Scientifique publié par l'Académie Imperiale des Sciences de Saint-Pétersbourg*, 2(20): 311–314. Available at: https://www.biodiversitylibrary.org/item/43693#page/389/mode/1up

Ohashi H., Iketa H. 1993. New combinations of Asiatic *Aria* (*Rosaceae–Maloideae–Sorbeae*). *Journal of Japanese Botany*, 68: 355–361.

Phipps J.B., Robertson K., Smith P.G., Rohrer J.R. 1990. A checklist of the subfamily *Maloideae* (*Rosaceae*). *Canadian Journal of Botany*, 68: 2209–2269. https://doi.org/10.1139/b90-288

Potter D., Eriksson T., Evans R.C., Oh S., Smedmark J.E.E., Morgan D.R., Kerr M., Robertson K.R., Arsenault M., Dickinson T.A., Campbell C.S. 2007. Phylogeny and classification of *Rosaceae*. *Plant Systematics and Evolution*, 266: 5–43. https://doi.org/10.1007/s00606-007-0539-9

Regel E. 1871. Revisio specierum Crataegorum, Dracaenarum, Horkeliarum, Laricum et Azalearum. *Acta Horti Petropolitani* [*Труды Императорского Санкт-Петербургского ботанического сада*], 1(1): 111–164.

Rich T.C.G., Houston L., Robertson A., Proctor M.C.F. 2010. *Whitebeams, rowans and service trees of Britain and Ireland. A monograph of British and Irish Sorbus L.* [*B.S.B.I. Handbook* No. 14] London: Botanical Society of the British Isles, 223 pp.

Rich T.C.G., McVeigh A., Stace C.A. 2018 (vol. of 2019). New taxa and new combinations for the British flora. *Edinburgh Journal of Botany*, 76(2): 173–180. https://doi.org/10.1017/S0960428618000288

Rich T.C.G., King C., Fay M.F. 2022a. 1047. *Sorbus rupicola*: *Rosaceae*. *Curtis's Botanical Magazine*, 39(4): 753–762. https://doi.org/10.1111/curt.12481

Rich T.C.G., King C., Brown A.P., Fay M.F. 2022b. 1050. *Sorbus torminalis*: *Rosaceae*. *Curtis's Botanical Magazine*, 39(4): 753–762. https://doi.org/10.1111/curt.12484

Rivers M.C., Beech E., Bazos I., Bogunić F., Buira A., Caković D., Carapeto A., Carta A., Cornier B., Fenu G., Fernandes F., Fraga P., Garcia Murillo P.J., Lepší M., Matevski V., Medina F.M., Menezes de Sequeira M., Meyer N., Mikoláš V., Montagnani C., Monteiro-Henriques T., Naranjo Suárez J., Orsenigo S., Petrova A., Reyes-Betancort J.A., Rich T., Salvesen P.H., Santana López I., Scholz S., Sennikov A., Shuka L., Silva L.F., Thomas P., Troia A., Villar J.L., Allen D.J. 2019. *European Red List of Trees*. Cambridge, UK and Brussels, Belgium: IUCN. viii + 60 pp. https://doi.org/10.2305/IUCN.CH.2019.ERL.1.en

Robertson K.R., Phipps J.B., Rohrer J.R., Smith P.G. 1991. A synopsis of genera in *Maloideae* (*Rosaceae*). *Systematic Botany*, 16: 376–394. https://doi.org/10.2307/2419287

Rushforth K. 2018. The Whitebeam problem, and a solution. *Phytologia*, 100(4): 222–247. Available at: https://www.biodiversitylibrary.org/page/63492494#page/222/mode/1up and https://biostor.org/reference/286590

Rushforth K. 2019a. Apples, whitebeams and their cousins. *Curtis's Botanical Magazine*, 36(4): 335–339. https://doi.org/10.1111/curt.12301

Rushforth K. 2019b. 925. *Griffitharia hedlundii*. *Curtis's Botanical Magazine*, 36(4): 375–382. https://doi.org/10.1111/curt.12306

Rushforth K. 2019c. 926. *Thomsonaria eleonorae*. *Curtis's Botanical Magazine*, 36(4): 383–389. https://doi.org/10.1111/curt.12307

Sennikov A. 2014. (2329) Proposal to conserve the name *Sorbus* (*Rosaceae*) with a conserved type. *Taxon*, 63(5): 1139–1140. https://doi.org/10.12705/635.19

Sennikov A.N. 2018. *Scandosorbus* (*Rosaceae*), a new generic name for *Sorbus intermedia* and its hybrid. *Annales Botanici Fennici*, 55(4–6): 321–323. https://doi.org/10.5735/085.055.0413

Sennikov A.N., Kurtto A. 2017. A phylogenetic checklist of *Sorbus* s. l. (*Rosaceae*) in Europe. *Memoranda Societatis pro Fauna et Flora Fennica*, 93: 1–78. Available at: https://journal.fi/msff/article/view/64741

Somlyaly L., Sennikov A.N. 2016. Atlas Florae Europaeae notes 30. Resurrection and typification of the name *Sorbus semipinnata* Borbás (*Rosaceae*). *Phytotaxa*, 266(1): 45–47. https://doi.org/10.11646/phytotaxa.266.1.7

Sun J., Shi S., Li J., Yu J., Wang L., Yang X., Guo L., Zhou S. 2018. Phylogeny of *Maleae* (*Rosaceae*) based on multiple chloroplast regions: Implications to genera circumscription. *BioMed Research International*, 2018: art. 7627191. https://doi.org/10.1155/2018/7627191

Sun J., Zhao D., Qiao P., Wang Y., Wu P., Wang K., Guo L., Huang L., Zhou S. 2024. Phylogeny of genera in *Maleae* (*Rosaceae*) based on chloroplast genome analysis. *Frontiers in Plant Science*, 15: art. 1367645. https://doi.org/10.3389/fpls.2024.1367645

Turland N.J. 2025. From the *Shenzhen Code* to the *Madrid Code*: New rules and recommendations for naming algae, fungi, and plants. *American Journal of Botany*, 112(4): art. e70026. https://doi.org/10.1002/ajb2.70026

Turland N.J., Wiersema J.H. 2024. Synopsis of Proposals on Nomenclature — Madrid 2024: A review of the proposals to amend the International Code of Nomenclature for algae, fungi, and plants submitted to the XX International Botanical Congress. *Taxon*, 73(1): 325–404. https://doi.org/10.1002/tax.13114

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 G.F. 2018. *International Code of Nomenclature for algae, fungi, and plants (Shenzhen Code) adopted by the Nineteenth International Botanical Congress, Shenzhen, China, July 2017* [*Regnum Vegetabile*, vol. 159]. Glashütten: Koeltz Botanical Books, xxxviii + 254 pp. https://doi.org/10.12705/Code.2018

Turland N.J., Álvarez I., Knapp S., Monro A.M., Wiersema J.H. 2024. XX International Botanical Congress, Madrid 2024: Report of Congress action on nomenclature proposals. *Taxon*, 73(5): 1308–1323. https://doi.org/10.1002/tax.13258

Turland N.J., Wiersema J.H., Barrie F.R., Gandhi K.N., Gravendyck J., Greuter W., Hawksworth D.L., Herendeen P.S., Klopper R.R., Knapp S., Kusber W.-H., Li D.-Z., May T.W., Monro A.M., Prado J., Price M.J., Smith G.F., Zamora Señoret J.C. 2025 (in press). *International Code of Nomenclature for algae, fungi, and plants (Madrid Code)* [*Regnum Vegetabile*, vol. 162]. Chicago, USA: University of Chicago Press. https://doi.org/10.7208/chicago/9780226839479.001.0001

Ulaszewski B., Jankowska-Wróblewska S., Świło K., Burczyk J. 2021. Phylogeny of *Maleae* (*Rosaceae*) based on complete chloroplast genomes supports the distinction of *Aria*, *Chamaemespilus* and *Torminalis* as separate genera, different from *Sorbus* sp. *Plants*, 10(11): art. 2534. https://doi.org/10.3390/plants10112534

Velebil J., Lepší M., Nosková J., Lepší P. 2022. Taxonomic assessment of *Sorbus* subgenus *Aria* in the Malé Karpaty Mountains. *Preslia*, 94(2): 305–334. https://doi.org/10.23855/preslia.2022.305

Vít P., Lepší M., Lepší P. 2012. There is no diploid apomict among Czech *Sorbus* species: A biosystematic revision of *S. eximia* and discovery of *S. barrandienica*. *Preslia*, 84(1): 71–96.

Wang H., Li X.-Y., Jiang Y., Jin Z.-T., Ma D.-K., Liu B., Xu C., Ge B.-J., Wang T., Fan Q., Jin S.-H., Liu G.-N., Liu B.-B. 2024. Refining the phylogeny and taxonomy of the apple tribe *Maleae* (*Rosaceae*): insights from phylogenomic analyses of 563 plastomes and a taxonomic synopsis of *Photinia* and its allies in the Old World. *PhytoKeys*, 242: 161–227. https://doi.org/10.3897/phytokeys.242.117481

Wilson K. L. 2024. Report of the General Committee: 31. *Taxon*, 73(4): 1081–1084. https://doi.org/10.1002/tax.13224

Zhou L.-H., Wu Z.-Y. 2000. *Pleiosorbus*, a new genus of *Rosaceae* from Xizang (Tibet), China. *Acta Botanica Yunnanica*, 22(4): 383–389.

Спрощення номенклатури у групі *Sorbus* sensu lato:
нові номенклатурні рішення в родах *Aria* та *Hedlundia* (*Rosaceae*)

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Реферат. Обговорюються різні варіанти розмежування родів у трибі *Maleae* (родина *Rosaceae*), зокрема тих таксонів, які раніше включали до збірного роду *Sorbus* L. s. l. Після позитивного рішення Генерального комітету з номенклатури щодо нашої нещодавньої пропозиції законсервувати *Aria* (Pers.) Host проти раніше опублікованих назв *Chamaemespilus* Medik. та *Torminalis* Medik., ми вважаємо, що для спрощення таксономічних схем і номенклатури в групі *Sorbus* та споріднених таксонів бажаним є розширене розуміння роду *Aria* (включаючи *Chamaemespilus* і *Torminalis*); зокрема, для збереження численних назв, які вже доступні в *Aria*, особливо тих, що використовуються для більш відомих видів. Ми включаємо тут до роду *Aria* s. l. європейські таксони роду *Sorbus* s. l., які раніше були наведені Сенніковим та Куртто (2017), а також і в "Атласі флори Європи", переважно в гібридогенних родах *Karpatiosorbus* Sennikov & Kurtto (види якого поєднують у своїх геномах субгеноми *Aria* та *Torminalis*) та *Majovskya* Sennikov & Kurtto (з субгеномами *Aria* та *Chamaemespilus*). Назви гібридогенних родів *Normeyera* Sennikov & Kurtto та *Scandosorbus* Sennikov (≡ *Borkhausenia* Sennikov & Kurtto, nom. illeg.), які ймовірно виникли в результаті гібридизації *Aria* × *Chamaemespilus* × *Sorbus* та *Aria* × *Sorbus* × *Torminalis*, відповідно, тут розглядаються як синоніми гібридогенної родової назви *Hedlundia* Sennikov & Kurtto (*Aria* s. l. × *Sorbus*), а таксони, які раніше включали до *Normeyera* та *Scandosorbus*, перенесені до *Hedlundia*. Загалом здійснено 104 нові комбінації видового рангу: 91 в *Aria* та 13 в *Hedlundia*. Надані коментарі щодо гібридів (але не для гібридогенних видів) між *Aria* та *Sorbus*, для яких нещодавно було запропоновано нотородову назву × *Arsorbus* Su Liu & Z.H. Feng.

Ключові слова: *Aria*, *Chamaemespilus*, *Hedlundia*, *Karpatiosorbus*, *Majovskya*, *Normeyera*, *Rosaceae*, *Scandosorbus*, *Sorbus*, *Torminalis*, номенклатура, таксономія