

УДК 582.683.2:581.961

Nomenclatural notes on Cruciferae

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Keywords: *Arabidopsis*, Brassicaceae, *Dvorakia*, *Erophila*, *Eunomia*, new combination, *Noccaea*, *Peltariopsis*, *Pseudocamelina*, taxonomy, typification, validation.

Summary. A generic name *Dvorakia* and combinations *Arabidopsis amurensis*, *A. media*, *A. multijuga*, *A. septentrionalis*, *Dvorakia alaica*, *D. alyssifolia*, *Erophila acutidentata*, *E. aquisgranensis*, *E. kohlscheidensis*, and *E. strigosula* are validated. Places of valid publication and (except for the first combination) authorship for *Erysimum krynitzkii*, *Eunomia bourgaei*, *E. rubescens*, *Pseudocamelina aphragmodes*, *P. campylopoda*, and *Thlaspi hastulatum* are corrected. For *Pseudocamelina* and *Peltariopsis*, information on the types is clarified. Some further minor nomenclatural items are commented.

Номенклатурные заметки о крестоцветных (Cruciferae)

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Ключевые слова: действительное обнаружение, новая комбинация, систематика, типификация, *Arabidopsis*, Brassicaceae, *Dvorakia*, *Erophila*, *Eunomia*, *Noccaea*, *Peltariopsis*, *Pseudocamelina*.

Аннотация. Обнаружено родовое название *Dvorakia*, а также комбинации *Arabidopsis amurensis*, *A. media*, *A. multijuga*, *A. septentrionalis*, *Dvorakia alaica*, *D. alyssifolia*, *Erophila acutidentata*, *E. aquisgranensis*, *E. kohlscheidensis* и *E. strigosula*. Для *Erysimum krynitzkii*, *Eunomia bourgaei*, *E. rubescens*, *Pseudocamelina aphragmodes*, *P. campylopoda* и *Thlaspi hastulatum* уточнено место действительного обнаружения и (за исключением *E. krynitzkii*) авторство, для *Pseudocamelina* и *Peltariopsis* – информация о типе. Приведены комментарии по некоторым другим мелким номенклатурным вопросам.

Further studies on systematics of Cruciferae resulted in some nomenclatural findings and actions presented and commented below.

1. A new name and combinations

Arabidopsis multijuga (Borbás), **comb. nov.** ≡ *Arabis multijuga* Borbás, 1877, Term-Tud. Közl. 9:

46; id., 1878, Linnaea 41(7): 604. ≡ *Arabis arenosa* subsp. *multijuga* (Borbás) Kulcz., 1927, in Szafer, Fl. Polska 3: 162. ≡ *Cardaminopsis multijuga* (Borbás) Czer., 1981, Pl. Vasc. URSS: 127.

= *Arabidopsis arenosa* subsp. *borbasii* (Zapał.) O’Kane et Al-Shehbaz, 1997, Novon 7(3): 325.

≡ *Arabis arenosa* subsp. *borbasii* Zapał., 1912, Rozpr. Wydz. Mat.-Przyr. Acad. Umiejtn., Dzial

B, Nauki Biol. 52: 31. ≡ *Cardaminopsis arenosa* subsp. *borbasii* (Zapał.) Pawł. ex H. Scholz, 1962, Willdenowia 3(1): 139. ≡ *C. borbasii* (Zapał.) H. E. Hess, Landolt et R. Hirzel, 1972, Fl. Schweiz 3: 778. ≡ *Arabidopsis borbasii* (Zapał.) A. P. Iljinsk., 2007, Ecofl. Ukraine 5: 65.

There is no consensus among authors regarding the status of the considered plant which is treated either as a subspecies of *Arabidopsis arenosa* (L.) La-walrée (e. g., Al-Shehbaz, O’Kane, 2002; Marhold, 2011; Danihelka et al., 2012; Buttler et al., 2018) or, less commonly, as a distinct species (e. g., Iljinska in Iljinska et al., 2007; Dorofeyev, 2012a) though it is generally agreed that the above two heterotypic sets of names belong to the same entity. As follows from the above synonymy [Al-Shehbaz, O’Kane (2002) can be consulted for further names involved], under such concept the final epithet “*borbasii*” has priority only at the rank of subspecies while at the species level, as accepted here, “*multijuga*” must be adopted.

North Asian *Arabidopsis lyrata* grex

During last two decades, multiple and various evidences (e. g., Schmickl et al., 2008, 2010; Shimizu-Inatsugi et al., 2009; Hohmann et al., 2014; Novikova et al., 2016; etc.) showing that the broad concept (O’Kane, Al-Shehbaz, 1997; Al-Shehbaz, O’Kane, 2002) of several polymorphic *Arabidopsis* (DC.) Heynh. species somewhat simplifies the situation became available accompanied by increasing number of recognized (chiefly reinstated) species and subspecies (Dorofeyev, 2002; Shimizu et al., 2005; Kolník, Marhold, 2006; Iljinska et al., 2007; Kadota, 2007; Elven, Murray, 2008; summarized by Koch, 2019). Nomenclaturally, the most critical situation is being observed within *A. lyrata* (L.) O’Kane et Al-Shehbaz complex where, due to the lack of appropriate names, the same epithet “*petraea*” is used at different ranks in simultaneously applied combinations, viz. *A. lyrata* subsp. *petraea* (L.) O’Kane et Al-Shehbaz vs. *A. petraea* subsp. *septentrionalis* (N. Busch) Elven et D. F. Murray and *A. petraea* subsp. *umbrosa* (“Turcz. ex Steud.”) Elven et D. F. Murray. With currently available phylogenetic data (Hohmann et al., 2014; Novikova et al., 2016), there are two options of solving this problem, also mentioned by Elven and Murray (l. c.), namely recognizing relevant entities at species or subspecies level, but then, in contrast to the latter authors’ approach, under *A. lyrata*, as informally suggested by Koch (l. c.). In this case, however, it would need

to be done not only for the morphologically poorly separable North Asian entities, but also for the most readily distinguishable *A. arenicola* (Richardson) Al-Shehbaz, Elven, D. F. Murray et Warwick, totally accepted as “good” species, reproductively isolated from of *A. lyrata* s. str. (Hohmann et al., l. c.; Koch, l. c.) but genetically closest to it. Because of this and having in mind relevant comments by Elven and Murray (l. c.) as well as the viewpoint of Yurtsev et al. (2010), an alternative approach is applied here. Although other taxonomic decisions are well predictable in *A. lyrata* complex, the presented nomenclatural novations enable use of names in agreement with ICN when splitting concept is adopted.

***Arabidopsis amurensis* (N. Busch), comb. nov.**
≡ *Arabis amurensis* N. Busch, 1922, Notul. Syst. Herb. Hort. Bot. Petrop. 3, 3–4: 12. ≡ *Cardaminopsis amurensis* (N. Busch) O. E. Schulz, 1936, in Engler & Prantl, Nat. Pflanzenfam., ed. 2, 17B: 541.

Unlike the other two taxa below, *A. amurensis* was not subjected to molecular studies yet. It is given the same rank since its morphological distinction from the other two similarly recognized entities is comparable to that among them.

***Arabidopsis media* (N. Busch), comb. nov.**
≡ *Arabis media* N. Busch, 1922, Notul. Syst. Herb. Hort. Bot. Petrop. 3, 3–4: 11. ≡ *Cardaminopsis media* (N. Busch) O. E. Schulz, 1936, in Engler & Prantl, Nat. Pflanzenfam., ed. 2, 17B: 541. ≡ *C. petraea* subsp. *media* (N. Busch) Hämet-Ahti, 1970, Ann. Bot. Fenn. 7: 293.

= *Arabis umbrosa* Turcz. ex Ledeb., 1841, Fl. Ross. 1: 120, non Crantz, 1762. ≡ *Arabis petraea* subsp. *umbrosa* Tolm. 1975, Fl. Arct. URSS 7: 97. ≡ “*C. petraea* subsp. *umbrosa* (Turcz.)” Peschkova, 1979, Fl. Sib. Centr. 1: 396, comb. inval. (Art. 41.5) ≡ *C. umbrosa* (Tolm.) Czer., 1981, Pl. Vasc. URSS: 127. ≡ *Arabidopsis petraea* subsp. *umbrosa* (Tolm.) Elven et D. F. Murray, 2008, J. Bot. Res. Inst. Texas 2(1): 439.

Yet untypified *Arabis ambigua* DC., the oldest name potentially applicable to this species, is not listed here because it also includes elements (p. max. p.) of what is currently known as *Arabidopsis kamchatica* (Fisch. ex DC.) K. Shimizu et Kudoh (Busch, 1922, 1926, as *Arabis kamchatica* (Fisch. ex DC.) Ledeb.; Tolmaczev, 1975, as *Arabis lyrata* subsp. *kamchatica* (Fisch. ex DC.) Hult.; Shimizu et al., 2005) over which it has priority as well. Because of this heterogeneity since the treatment of Busch (1922, 1926) *Arabis ambigua* is informally rejected

and might indeed be a candidate for rejection. At the same time, being generally out of use even as a basionym (varietal level disregarding), it causes no threats at the rank of subspecies where other problems nevertheless exist. In particular, due to priority of the final epithet “*media*”, established by Hämet-Ahti (1970), there is no appropriate name currently available in *Arabidopsis* for treating this taxon as a subspecies as done by Elven and Murray (l. c.) and followed by some others. The hitherto used combination *Arabidopsis petraea* subsp. *umbrosa*, otherwise invalid under ICN Art. 41.7 (Turland et al., 2018), is still validly published due to listing in synonymy, with full and direct reference, of a factual basionym, *Arabis petraea* subsp. *umbrosa*, but, again, it is anyway just a potential synonym of any subspecific combination based on *A. media*.

Additional question is whether *Arabis media* and *Arabis umbrosa* Turcz. ex Ledeb. are necessarily homotypic as recently treated by the typifying author (Dorofeyev, 2018: 289) which would mean illegitimacy of both *Arabis petraea* subsp. *umbrosa* and *Arabidopsis petraea* subsp. *umbrosa* under Art. 52.1 caused by the precedence of *Arabis petraea* subsp. *media*. This is apparently not so since Art. 6.13 seems to be applicable for *Arabis media*, providing a choice of making it either (1) a replacement name or (2) the name of a new taxon. Such choice is not obvious as Busch (1922: 14), despite claiming that “the volume of his [Turczaninow’s] *A. umbrosa* does not correspond the delimitation of my *A. media*”, in fact applied his binominal to the same entity, just with much more abundant material at hand than Turczaninow had, which favours the first option. However, alternative choice has been implicitly done by Dorofeyev (2017: 129) who lectotypified *A. media* by the specimen [and gathering] other than that by which *A. umbrosa* was typified (Dorofeyev, 2018). Hence, the two names are heterotypic by typification and none of the concerned subspecific combinations is illegitimate.

Arabidopsis septentrionalis (N. Busch), **comb. nov.** ≡ *Arabis septentrionalis* N. Busch, 1922, Notul. Syst. Herb. Hort. Bot. Petrop. 3, 3–4: 10. ≡ *Arabis petraea* subsp. *septentrionalis* (N. Busch) Tolm., 1931, Trav. Muz. Bot. (Leningrad) 23: 204. ≡ *Cardaminopsis septentrionalis* (N. Busch) O. E. Schulz, 1936, in Engler & Prantl, Nat. Pflanzenfam., ed. 2, 17B: 541. ≡ *Arabidopsis petraea* subsp. *septentrionalis* (N. Busch) Elven et D. F. Murray, 2008, J. Bot. Res. Inst. Texas 2(1): 438.

***Dvorakia*, gen. nov.** – *Promicrantha* Dvořák, 1972, Folia Fac. Sci. Nat. Univ. Purk. Brun., Biol. 13, 4: 55, nom. inval. (Art. 40.1).

Typus: *D. alyssifolia*

Dvorakia alaica (Korsh.), **comb. nov.** ≡ *Matthiola albicaulis* var. *alaica* Korsh., 1898, Bull. Acad. Sci. Pétersb. 9(5): 407. ≡ *Iskandera alaica* (Korsh.) Botsch. et Vved., 1955, Fl. Uzbekist. 3: 155, in adnot. ≡ “*Promicrantha alaica* (Korsh.)” Dvořák, 1972, Folia Fac. Sci. Nat. Univ. Purk. Brun., Biol. 13, 4: 59, comb. inval. (Art. 35.1).

Dvorakia alyssifolia (DC.), **comb. nov.** ≡ *Hesperis alyssifolia* DC., 1821, Reg. Veg. Syst. Nat. 2: 447. ≡ *Matthiola alyssifolia* (DC.) Bornm., 1936, Repert. Spec. Nov. Regni Veg. 39: 80. ≡ “*Promicrantha alyssifolia* (DC.)” Dvořák, 1972, Folia Fac. Sci. Nat. Univ. Purk. Brun., Biol. 13, 4: 59, comb. inval. (Art. 35.1).

F. Dvořák (1921–2016) proposed five new generic names in Cruciferae, two of which, “*Alaida*” and “*Promicrantha*”, were not validly published, both times for the reason of lacking the type indication, neither in the original works (Dvořák, 1971, 1972) nor elsewhere later [commented by German (2012) and Jacquemoud (1988), respectively]. While for the prior intended genus no good morphological ground justifying its segregation from *Dontostemon* Andr. ex. C. A. Mey. was found (Al-Shehbaz, Ohba, 2000) and molecular phylogeny (e. g., German et al., 2009; Friesen et al., 2016) entirely supported such a lumping approach, it does not seem to be the case for the latter one, and morphology-based conclusion of Dvořák (1972) turned to be congruent with phylogenetic data (e. g., Khosravi et al., 2009; Koch et al., 2018 [https://brassibase.cos.uni-heidelberg.de/]). The generic name (reads ['dvɔrɑ:kɪɑ], simplified ['dvɔrʒɑ:kɪɑ]) proposed herein instead of the invalid original designation commemorates Dvořák’s appreciable contribution to the systematics of the Cruciferae during his work on the family in second half of 1960ths – beginning of 1970ths.

Erophila acutidentata (Bomble), **comb. nov.** ≡ *Draba acutidentata* Bomble, 2017, Veröff. Bochum. Bot. Vereins 9 (2): 23; id., 2018, Jahrb. Bochum. Bot. Vereins 9: 35.

Erophila aquisgranensis (Bomble), **comb. nov.** ≡ *Draba aquisgranensis* Bomble, 2017, Veröff. Bochum. Bot. Vereins 9 (2): 17; id., 2018, Jahrb. Bochum. Bot. Vereins 9: 29.

Erophila kohlscheidensis (Bomble), **comb. nov.**
 ≡ *Draba kohlscheidensis* Bomble, 2017, Veröff. Bochum. Bot. Vereins 9 (2): 21; id., 2018, Jahrb. Bochum. Bot. Vereins 9: 33.

Erophila strigosula (Bomble), **comb. nov.**
 ≡ *Draba strigosula* Bomble, 2017, Veröff. Bochum. Bot. Vereins 9 (2): 13; id., 2018, Jahrb. Bochum. Bot. Vereins 9: 25.

These four species of *E. verna* (L.) Chevall. aggr. were described as members of *Draba* L. (Bomble, 2017, 2018) which is in agreement with the current trend in taxonomy of this group. However, as noted previously (German, 2016), available phylogenetic data (Jordon-Thaden et al., 2010; Karl, Koch, 2013) admit both approaches, of which keeping *Erophila* DC. separate looks preferable to me.

2. Comments on validity, places of validation and authorship of names

“*Clausia aprica* var. *trichosepala* (Turcz.) Korn.-Tr.”.

An attempt to verify the place of validation of this combination given in some databases (The Plant List, 2013; Tropicos.org) and also in Flora of China (Zhou et al., 2001) led to a conclusion that it originates from Franchet (1883: 181) who cited in synonymy of *Cheiranthus apricus* var. *trichosepalus* (Turcz.) Franch. “*Clausia aprica*, var., *trichosepala*, Trotzky, Index sem. Hort. Casan., in adnot.”. Kornuch-Trotzky (1839), however, did in any way neither mention the potential basionym, *Hesperis trichosepala* Turcz., nor relevant publication, but instead briefly commented on Candolle’s unnamed var. β of *H. aprica* (Stephan ex Willd.) Poir. characterized by “foliis grossè dentatis” (Candolle, 1821: 453) which apparently was misinterpreted by Franchet as what he named *Cheiranthus apricus* var. *trichosepalus*. The closest to validate the combination in *Clausia* Korn.-Tr. was Fournier (1868: 356) by citing “*H. trichosepala* Turcz. *Dec. pl. chin.* 3 = *Clausia aprica* l. c. var.”, but this way he only “suggested, but not actually formed” (Greuter, 1985: 213) and, consequently, did not validly publish it (ICN Art. 35.2; Turland et al., 2018). The same is true for such underformed designations as “*Clausia aprica* var. *cretacea*”, “*Parrya humilis*”, and “*P. kotschyi*” (Fournier, l. c.). At the same time, the following three combinations, none of which I could find in any source except for the original publication, were validly published by Fournier in that work:

Conringia renifolia (Boiss. et Hohen.) E. Fourn., 1868, Bull. Soc. Bot. France 13: 356. ≡ *Hesperis renifolia* Boiss. et Hohen., 1849, Diagn. Pl. Or. Nov., ser. 1, 2(8): 22. ≡ *Chalcanthus renifolius* (Boiss. et Hohen.) Boiss., 1867, Fl. Or. 1: 212. ≡ *Eutrema renifolium* (Boiss. et Hohen.) Al-Shehbaz, G. Q. Hao et J. Q. Liu, 2017, Bot. J. Linn. Soc. 184 (2): 218.

Parrya breviscapa (Boiss.) E. Fourn., 1868, Bull. Soc. Bot. France 13: 353. ≡ *Hesperis breviscapa* Boiss., 1842, Ann. Sci. Nat., Bot. Sér. 2, 17: 67.

Sisymbrium speciosum (Sweet) E. Fourn., 1868, Bull. Soc. Bot. France 13: 356. ≡ *Hesperis speciosa* Sweet, 1832, Brit. Gard., ed. 2, 5: tab. 135. = *Dendroarabis fruticulosa* (C. A. Mey.) D. A. German et Al-Shehbaz (German, 2014).

Erysimum krynitzkii Bordz. [1931, Bull. Jard. Bot. Kieff 12–13: 127, nom. inval. (Art. 36.1(a)); id.], 1938, in Hill, Index Kew., suppl. 9: 107. ≡ *E. gelidum* subsp. *krynitzkii* (Bordz.) V. I. Dorof., 1987, Bot. Zhurn. 72(11): 1541. = *E. gelidum* Bunge (Polatschek, 2010).

Binominal *Erysimum krynitzkii* which is universally treated as validly published by Bordzilowski (1931) (conf. IPNI; POWO; The Plant List, 2013; etc.), was indicated in relevant work as “spec. nova [ad interim]” and thus was not validated being not definitely accepted by the author (ICN Art. 36(a), Ex. 6; Turland et al., 2018). The name was overlooked in the Flora of USSR (Busch, 1939) but was included into the Caucasian accounts by Grossheim (1949: 402, 1950: 241) and subsequently considered by Czerepanov (1973: 134). In all these and some later works, conditions of a valid publication are met, though the earliest case is evidently 9th addition to Index Kewensis (Hill, 1938), illustrating one of the kinds of such validations highlighted by Greuter (1985: 213).

Eunomia bourgaei (Boiss.) N. Busch, 1907, Acta Horti Bot. Univ. Imp. Jurjev. 7(4): 221; id., 1908, Fl. Cauc. Crit. 3, 4: 141, 142. ≡ *Aethionema bourgaei* Boiss., 1867, Fl. Or. 1: 344. ≡ *Noccaea bourgaei* (Boiss.) D. A. German, 2018, Turczaninowia 21, 1: 181.

Eunomia rubescens (Boiss.) N. Busch, 1907, Acta Horti Bot. Univ. Imp. Jurjev. 7(4): 221; id., 1908, Fl. Cauc. Crit. 3, 4: 141, 142. ≡ *Aethionema rubescens* Boiss., 1867, Fl. Or. 1: 343. ≡ *Noccaea rubescens* (Boiss.) F. K. Mey., 1973, Feddes Repert. 84(5–6): 459. ≡ *Thlaspi rubescens* (Boiss.) Greuter et Burdet, 1983, Willdenowia 13(1): 96.

The combination *Eunomia bourgaei* is often considered as being validated by Boissier (1867) (e. g., IPNI; The Plant List, 2013) or not treated as validly published name at all (e. g., Meyer, 2006; Tropicos.org), though none of these options is the case. Apparently, citation “*Eunomia bourgaei* Boiss.” by Busch (1907, 1908) who clearly accepted this and the next combination (“I assign to *Eunomia* the species *Aethionema rubescens* Boiss. and *Ae. Bourgaei* Boiss. that are placed by Boissier in the section *Iberidella*” [originally in Russian]) constitutes an indirect but unambiguous reference to the basionym [given in the prologue as “*Ae. bourgaei* (Boiss. pl. Bourg. exs. sub *Eunomiâ*)”] meeting the requirements of Art. 41.3 (Turland et al., 2018) and resulted in a validation of relevant name. In a similar way, the combination *E. rubescens* was also inadvertently validated by Busch via the citation “*Eunomia rubescens* Schott et Ky.” representing an indirect reference to the basionym [“*Ae. rubescens* (Schott et Ky. in Sched. sub *Eunomiâ*)” (Boissier, 1867)]. Noteworthy, the authorship of *Aethionema rubescens* is still often given as “Schott et Kotschy ex Boiss.” (e. g., Meyer, 2006; Marhold, 2011; Al-Shehbaz, 2014) which is in conflict with Art. 46.3 and should be changed to “Boiss.”. Another variant, “(Schott et Kotschy ex Tchih.) Boiss.” (e. g., in POWO), is also unacceptable since the implied basionym, “*Eunomia rubescens* Schott et Kotschy ex Tchih.”, is nomen nudum, as directly pointed out by Tchichatschew (1860: 339) who listed it as a “species nondum descripta”. The same is true for “*Eunomia rubescens* Schott et Kotschy” (see Meyer, 2006: 51).

Pseudocamelina aphragmodes (Boiss.) N. Busch [1928, Journ. Soc. Bot. Russe 13(1–2): 115, nom. prov., Art. 36.1(a) ex O. E. Schulz, 1936, in Engler, Pflanzenfam. 17B: 559.

It is generally believed (Rechinger, 1968; Esmailbegi et al., 2017; IPNI, etc.) that this combination is published by Busch (1928) along with others validated by him in relevant work. The following evidences prove the contrary. First, Busch (1928: 113) states: “Now I consider it necessary to establish one more new genus – *Pseudocamelina*, consisting of **five** species” [originally in Russian, translated and boldfaced here and below by me – D. A. G.] which are then enumerated, viz. *P. szowitzii* (Boiss.) N. Busch, *P. camelinae* “(Boiss.)” N. Busch, *P. glaucophylla* (DC.) N. Busch, *P. violacea* (Boiss.) N. Busch, and *P. campylocarpa* (Boiss.) N. Busch [Busch’s order is kept]. After that he continues: “**May be** perennial *P. aphragmodes* (Boiss.)

N. Busch should also be assigned here” (Busch 1928: 115, originally in Russian). Thus, Busch definitely did not include this sixth species into *Pseudocamelina* (Boiss.) N. Busch but only assumed such possibility, i. e., he did not accept his combination *P. aphragmodes* treating it as provisional and therefore leaving it invalid as determined by ICN Art. 36.1(a) (Turland et al. 2018). As the only argument against this conclusion, the characteristics “herbae biennes rarius perennes” in the generic description can be mentioned. Indeed, it looks like an indirect indication of inclusion of *P. aphragmodes*, the only perennial among species treated by Busch, into *Pseudocamelina*. It is clear, however, that relevant phrase comes from Boissier (1867: 247) as a part of the last sentence of his *Cochlearia* sect. *Pseudocamelina* Boiss. validating description incorporated by Busch without any alteration. Hence, it reflects the concept of Boissier, who undoubtedly included *C. aphragmodes* Boiss. into the section, and represents more a “rudiment” of Boissier’s characteristics in Busch’s work rather than the latter author’s intention. One more argument proving that Busch did not accept this species as a member of *Pseudocamelina* is his own generic characteristics “petala alba” which is absent from Boissier’s sectional description. This fits the fact that five species included by Busch into the genus in question have white flowers (rarely fading virescent) and only *P. aphragmodes* is clearly violet-flowered. To sum up, it is obvious that the final decision of Busch (1928) was to refrain from inclusion of *C. aphragmodes* to *Pseudocamelina* and, consequently, failure to validate relevant combination. Conditions of a valid publication were subsequently inadvertently fulfilled in several works, such as Rechinger (1968: 222), Miller (1978: 28), Esmailbegi et al. (2017: 119), Kaffash, Assadi (2017: 643). The first who did it was apparently Schulz (1936) by listing “*P. aphragmodes* (Boiss.) N. Busch” among representative members of *Pseudocamelina* thus definitely accepting the name and providing an indirect, but unequivocal reference to its basionym, *Cochlearia aphragmodes* Boiss.

Pseudocamelina campylopoda (Bornm. et Gauba) O. E. Schulz, 1936, in Engler, Pflanzenfam. 17B: 559.

Nordenstam (1968: 658) highlighted the problem of invalidity of the name “*Pseudocamelina campylopoda* Bornm. et Gauba” adopted by Rechinger (1968: 221). Relevant combination [based on *Cochlearia campylopoda* Bornm. et Gauba, 1934, Repert. Spec. Nov. Regni Veg. 36: 339] was sub-

sequently published by Hadač and Chrtek (1973) and since then is being universally accepted as such. However, here, like in the above case of *P. aphragmodes*, validation was first inadvertently reached by Schulz via the citation “*P. campylopoda* Bornm. et Gauba 1934” (Schulz, 1936: 559) apparently interpretable as unambiguous reference to the basionym, completed by his note under the treatment of *Cochlearia* L.: “*Cochlearia campylopoda* Bornm. et Gauba in Fedde, Repert. XXXVI. 16–25 (1934) 339, siehe *Pseudocamelina*” (Schulz, l. c.: 461); hence, Art. 41.3 if not 41.5 (Turland et al., 2018) is also to be applied here.

Thlaspi hastulatum (DC.) Ledeb., 1841, Fl. Ross. 1: 162. ≡ *Hutchinsia hastulata* DC., 1821, Reg. Veg. Syst. Nat. 2: 388. ≡ *Noccaea hastulata* (DC.) Steud., 1841, Nomencl. Bot., ed. 2, 2: 196. ≡ *Noccidium hastulatum* (DC.) F. K. Mey., 1973, Feddes Repert. 84(5–6): 456.

There are different ways of how the combination *Thlaspi hastulatum* is given in nomenclatural citations (e. g., Busch, 1939: 591; Hedge, 1968: 115; Meyer, 2003: 117; Dorofeyev, 2012b: 458) illustrating various interpretations concerning its authorship and validity. Zohary et al. (1980: 55) brought good piece of clarity by implicit noting that Hedge’s (l. c.) citation fulfills requirements of a valid publication and were followed by Meyer (l. c.) and German (2018) in ascribing relevant transfer to Hedge. However, a more attentive checking showed that the same nomenclatural action has been done yet by Ledebour (1841).

3. Comments on generic types

It also seems reasonable to clarify the data on the type of above-discussed *Pseudocamelina* as long as respective information is confusing even though only one species, *P. glaucophylla*, is involved. It is listed as the generic type by Miller (1978: 26), Greuter et al. (1993: 932) and Al-Shehbaz (2012: 945, 2015: 560); according to Rollins (1979: 1428) and Farr, Zijlstra (1996+), the type is not designated; finally, Esmailbegi et al. (2017: 118) reported that lectotype is chosen by Busch in Grossheim (1927: 214). Since there is no type designation in the latter work (ICN Art. 7.11, Ex. 15; Turland et al., 2018), the inadvertent choice of Miller is to be followed. Publication of relevant work shortly before issuing the ING explainably prevented taking this information into consideration by its compilers.

Similarly, and in contrast with ING (Rollins, 1979: 1279) and NCU-3 (Greuter et al., 1993: 831), the generic name *Peltariopsis* (Boiss.) N. Busch was typified in the same paper by Miller (1978: 32) with *P. planisiliqua* (Boiss.) N. Busch designated as type [i. e., lectotype] making subsequent deliberate choice (Al-Shehbaz, 2012: 945) superfluous.

Acknowledgements

Kind sharing of nomenclatural experience and advice on various items by Alexander Nikolaeovich Sennikov is sincerely appreciated by the author.

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