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Some state records and deletions of Asian Cruciferae

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Summary. Based on revision of various herbaria collections, Cruciferae (Brassicaceae) species lists of certain Asian countries are updated. These include first records of the following species/subspecies from relevant states mentioned in parentheses: *Cryptospora trichocarpa* (Afghanistan), *Guenthera persica* subsp. *takhtajanii*, comb. nova (Turkey, Iran, Syria), *Neotorularia brevipes* (Tajikistan), *Noccaea apterocarpa* (Turkmenistan), *N. campylophylla* s. l. (Iraq). The cases of non-confirmed occurrence of other species in relevant countries are also revealed: *Camelina hispida* (Uzbekistan), *Dontostemon pinnatifidus* (Nepal), *Erysimum crassipes*, *Noccaea trinervia* and *Sterigmostemum acanthocarpum* (Turkmenistan), and *Noccaea kurdica* (Iraq). Additional comments on presence of certain species in the flora of Georgia, Iran, Kyrgyzstan, and Russia are provided.

К видовому составу крестоцветных (Cruciferae) некоторых стран Азии

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Ключевые слова: Гималаи, распространение, Средняя и Юго-Западная Азия, Brassicaceae, *Cryptospora*, *Dontostemon*, *Erysimum*, *Guenthera*, *Neotorularia*, *Noccaea*, *Sterigmostemum*.

Аннотация. По результатам ревизии ряда гербарных коллекций приводится уточнение видового состава крестоцветных (Cruciferae, или Brassicaceae) некоторых стран Азии. *Cryptospora trichocarpa* впервые отмечается во флоре Афганистана, *Guenthera persica* subsp. *takhtajanii*, comb. nova – Турции, Ирана и Сирии, *Neotorularia brevipes* – Таджикистана, *Noccaea apterocarpa* – Туркменистана и *N. campylophylla* s. l. – Ирака. В то же время, произрастание *Camelina hispida* в Узбекистане, *Dontostemon pinnatifidus* – в Непале, *Erysimum crassipes*, *Noccaea trinervia* и *Sterigmostemum acanthocarpum* – в Туркменистане, а также *Noccaea kurdica* – в Ираке не получает подтверждения. Дополнительно кратко прокомментировано нахождение отдельных видов в Грузии, Иране, Кыргызстане и России.

In the course of revising the Cruciferae (Brassicaceae) collections in various herbaria, some species previously unrecorded from certain Asian countries were found. At the same time, state reports that cannot be confirmed were also revealed. Of them, only those based on the cited specimens (or for which such specimens could be unambiguously traced) were taken into consideration. Doubt-

ful mentions not supported by concrete references to the studied material scattered through the floristic literature were not treated as confirmed records and are not reviewed here.

The study is based on revision of herbarium collections BAK, BASBG, BM, BP, BRNM, BRNU, C, E, G, GAZI, GZU, HUB, JE, K, KFTA, LD, LE, LECB, MSB, MW, TBI, W, and WU. In addition,

specimens from KUFs and partly E (*Dontostemon* Andr. ex C. A. Mey.) were studied as digital images via the databases Virtual Herbaria [2021] and RBGE [2021], respectively. Finally, for *Noccaea iranica* Al-Shehbaz, a photo of the type (TARI) has been seen.

1. Records

Cryptospora trichocarpa Botsch.

Afghanistan: “10 m[iles] N of Doshi, Katahgan [Baghlan] Province. 2500' alt. Stony slopes with *Artemisia* and annuals, never cultivated. 15. 05. 1964. P. Furse 5973” (K, LE); “Badakhshan: Oestl. Seidental der Darya-e Meshad, oberhalb Kangurchi. Alt. 1300–1700 m. 22. 05. 1971. O. Anders 6639” (KUFs [KUFs002443]: http://jacq.nhm-wien.ac.at/djatoka/jacq-viewer/viewer.html?rft_id=kufs_002443&identifiers=kufs_002443).

The species has hitherto been considered endemic to Tajikistan where it is only known from the southwestern part adjacent to Afghanistan (Botschantzev, 1963; Pachomova, 1974; Yunusov, 1978; Nowak, Nobis, 2020; POWO, 2021), why its finding in the latter country could well be expected. Both cited gatherings were initially determined as morphologically close *C. falcata* Kar. et Kir., but LE specimen was revised as *C. trichocarpa* by Botschantzev yet in late 1971. However, this determination apparently was not published by now. According to the updated information, natural range of the species is restricted to SW Tajikistan and NE Afghanistan and its finding elsewhere is unlikely.

Guenthera persica* subsp. *takhtajanii (V. I. Dorof.) D. A. German, **comb. nov.** \equiv *Erucastrum takhtajanii* V. I. Dorof., 2000, Bot. Zhurn. 85, 7: 183.

Turkey: “[B6] A6 Sivas: Kangal – Gürün arası, 18 km, Kireçli tüf, 1650 m. 10. 07. 2007. Z. Aytacı 9081” (GAZI); “[B6] A6 Sivas: Ulas – Gürün arası, Gürün’e 58 km kala, 1565 m, 39°07'43.6" K, 37°14'.8" D, step, marnlı yamaçlar, 25. 07. 2008. Adil Güner 15151” (GAZI [GAZI9999000065199]); “B6 Sivas: Gürün – Kangal bei Samakurd, 1620 m, Gipshügel. 13. 07. 1982. Max Nydegger 17102” (BASBG-00173660, G); “[B6] Prov. Sivas: Gürün. On loose scrub scree. Alt. 1200 m. 19 June 1960. Stainton & Henderson 5668” (E [E00197054]); “[B6] Sivas (Pontus). Distr. Kangal. Tecer – Gürün. Kalkmergel 36–37 km südl. Tecer. 1620 m ü. M. 27 Juni 1955. A. Huber-Morath 13106” (G); “B6 Sivas: Gürün – Sivas. 36 km s Sivas bei Samakurd, 1550 m,

Gipshügel. 11. 07. 1981. Max Nydegger 16903 & 16877” (G); “[B6] Vil. Sivas. Strasse Sivas – Gürün. 78 km von Sivas, 1530 m. 27 Juni 1955. C. Simon” (BASBG-00173681); “[B6] Prov. Sivas: Gürün, 3500 ft. Eroded hills of calc. shale. 19 June 1954. P. H. Davis 21687” (E [E00439548], K); “[B6] Sivas, Kangal, Düşek mevki, 39.239005 K, 37.351054 D, 1125 m, jipsli arazi, 15. 07. 2007. B. Özüdoğru” (HUB); “B6 Malatya: Straße O, Malatya – 94,8, Gürün – 140; 1,0 km W Karşıyaka köyü an der Straße nach Darende, 1030 m, Schutthang. 26. 08. 1975. K. P. & E. Buttler 20321” (MSB); “B6 Malatya: Straße O, Malatya – 91,2, Gürün – 140; 1,8 km E Karşıyaka köyü an der Straße nach Balaban (c. 12 km E Darende), 960 m, Steppe. 11. 09. 1977. K. P. Buttler 23183 & R. von Bothmer” (MSB); “B7 Tunceli: Ovacık, Tornova üstü, Munzur Dağları, 1100–1450 m, 26. 07. 1979. Ş. Yıldırım 2164” (HUB № 06501); “[B7] Prov. Tunceli: Pertek – Tunceli, 26 miles from Elaziğ, 1400 m. Chrystalline limestone ravine. 06. 06. 1957. P. H. Davis 29116 & I. C. Hedge” (BM [BM010750790], E [E00439547], K); “[B7 Elaziğ]: Armenia turcica, Kharput, Muradlu, in campis. 1 VI 1889. P. Sintenis 613” (LD).

Iran: “West Azerbaijan: Bazargan, northwest corner of Iran, on Turkish border, semi-desert, 2000 m, 15 July 1964. Martin L. Grant 16215” (W 1965-18022); “Persia, Prov. Azerbaijan occid.: In faucibus calc. 86 km WNW Marand, 1000 m. 8 VI 1971. K. H. Rechinger 41505” (W 1973-11864).

Syria: “In gramin. Ras el Ain [Ras al-Ayn]. Mai 1867. C. Hausskhecht” (BM [BM010750784], W).

The taxon was described as endemic to Armenia (Dorofeyev, 2000). POWO (2021) lists it [as *Brassica elongata* subsp. *takhtajanii* (V. I. Dorof.) D. A. German], in addition to Transcaucasia, also for Turkey referring to Dorofeyev (2012). However, in the latter publication Turkey is only mentioned in the general distribution of the species (as *Erucastrum takhtajanii*) and its presence in the country was not hitherto confirmed by a single cited specimen. As here reported, *Guenthera elongata* subsp. *takhtajanii* occurs in four Turkish provinces and the main part of its distribution area is situated there.

Upon studying sufficient additional material I, contrary to the viewpoint of German (2015) on possible equality of the discussed entity to *Brassica elongata* var. *scabra* O. E. Schulz, have to return to my previous (German, 2005) approach regarding the status of *Erucastrum takhtajanii* and treat it as a subspecies, though of *Guenthera persica* (Boiss. et Hohen.) D. A. German [under which, if recognized, *B. elongata* var. *scabra* should also be

subsumed]. Unlike other taxa of this affinity such as *Brassica beytepeensis* Yild., *B. brevirostrata* Z. X. An, and *B. elongata* subsp. *duralii* Yild., which clearly represent variants of *G. persica* s. str. not deserving taxonomic recognition, *E. takhtajanii* possesses not only higher intensity (exhibited also by *B. elongata* var. *scabra*), but also a unique type of indumentum (straight and patent vs. curved upward and antrorse trichomes) which in combination with its well-defined E Anatolian – SW Transcaucasian distribution justifies a rank higher than varietal. On the other hand, rare intermediates to *B. elongata* var. *scabra* (e. g., Buttler & Buttler № 20321, Sintenis № 613) along with overall habitual resemblance with *G. persica* s. str. prevent me from treating it as a distinct species.

Neotorularia brevipes (Kar. et Kir.) Hedge et J. Léonard

Tajikistan: “Badakhshan Autonomous Province, silted stony hill slope at the mouth of Takhta-Korum, ca. 3800 m a. s. l. 28 VII 1958. N. N. Tzvelev 878” (LE).

Despite its relatively spacious, predominantly Turano-Dzhungarian distribution stretching latitudinally from W Kazakhstan to W Mongolia (but reaching NE Baluchistan in the south), *N. brevipes* is a rarely collected species, apparently due to its tiny habit and ephemeral life form. While most of (though still not numerous) gatherings originate from Kazakhstan, those from China (Xinjiang), Afghanistan and Pakistan are scarce or even single and distant from each other (Jafri, 1973; Zhou et al., 2001; German, Chen, 2009; Breckle et al., 2013; Al-Shehbaz, 2015) and sometimes mixed with other species (cf. Jafri, 1973; Zhou et al., 2001). The above first record from Tajikistan is just in line with them. It is represented by a single plant found as an admixture to the gathering of *Atelanthera perpusilla* Hook. f. et Thoms. among numerous specimens of the latter species stored in an envelope attached to the herbarium sheet. Therefore, despite no doubts in the specimen identity, additional gatherings of *N. brevipes* from Tajikistan are desirable to confirm the present – somewhat ephemeral – finding and exclude the possibility of any confusion.

Distribution of *N. brevipes* requires further elucidation also with regards to its occurrence in Kyrgyzstan and Turkmenistan. As far as I could check, both countries were first listed in the general distribution of the species by Zhou et al. (2001) and then this information was copied by German & Chen (2009), Al-Shehbaz (2015), and POWO (2021). Meanwhile,

no specimens have been seen in LE or elsewhere and no respective authors (Bondarenko, 1974; Nikitin, Geldikhanov, 1988; Lazkov, Sultanova, 2014) confirm presence of *N. brevipes* in any of these two countries.

Noccaea apterocarpa (Rech. f. et Aellen) Al-Shehbaz et Menke

Turkmenistan: “Turcomania. In m. Ludscha pr. Ashabad ca. 6800^T. 6 V 1898. D. Litwinow 594” (BAK, BP №№ 137445, 697222, BRNM, E [E00199877, E00199878], G, JE, KFTA, LE (5×), TBI, WU); “Transcaspien prov., Ashabad distr., Kopet-Dagh Mts., between the border posts Kheirabad and Chayek. 27 IV 1912. V. I. Lipsky 2330” (BRNU №№ 95266, 322601, LE (5×), LECB (2×), MW [MW0833826]); “id., ibid., 26 IV 1912. № 2249” (BAK, LE (2×)); “Turkmenia, Central Kopet-Dagh, 50 km SW Geok-Tepe. High mountainous meadows on Mt. Mesinev. 21 V 1963. I. A. Gubanov & A. A. Mestcheryakov 367” (LE, MW [MW0833827]); “Transcaspien prov., Kopetdagh. V 1895. G. K. Minkwitz (LE); Kopetdagh, Mt. Seamasur, zone of juniper woods. 8 VI 1924. E. Czerniakowska 98” (LE); “Ak-dagh. 24 V [18]87. Walter” (LE); “Turkmenia, Central Kopet-Dagh, Chopan-Dagh, stony slope, ca. 2700 m s. m. 2 VI 1975. N. Belyanina & G. Proskuryakova” (MW [MW0833822, MW0833823]); “Central Kopet-Dagh, gorge Karanki (to the west of Gaudan), stony slope, ca. 960 m s. m. 29 V 1975. N. Belyanina & G. Proskuryakova” (MW [MW0833824, MW0833825]).

Noccaea apterocarpa is a member of *N. trinervia* (DC.) Steud. [formerly widely known as *Aethionema trinervium* (DC.) Boiss. or *Iberidella trinervia* (DC.) Boiss.] complex, “most different from typical *A. trinervium*” (Khosravi et al., 2009) among other taxa of this group. For quite a long time it was treated as a variety of *A. trinervium* (e. g., Hedge, 1968; Zohary et al., 1980), but nowadays is usually accepted as a distinct species (Al-Shehbaz, 2012, 2014; Fakhr Ranjberi, 2017; POWO, 2021). Since the time of its description (Rechinger, 1951) and by now it was known as endemic to Khorassan-Kopet Dagh floristic province of Iran; hence, its occurrence in adjacent Turkmenistan was quite predictable. Revision of herbarium material fully confirmed this expectation and, furthermore, demonstrated that all gatherings of *N. trinervia* s. l. from Turkmenistan (restricted exclusively to Kopet Dagh) belong to *N. apterocarpa*. Therefore, *N. trinervia* s. str. is to be excluded from the flora of the country. Noteworthy,

easternmost populations (from Kazakhstan, Kyrgyzstan, and Uzbekistan) are again represented by quite typical *N. trinervia*.

Noccaea campylophylla (F. K. Mey.) Al-Shehbaz s. l.

Iraq: [Arbil]: “Helgord Range [Algurd Dagh], c. 2800–3000 m, E site of mt. slope. 1 IX 1957. Ali Al-Rawi & [Ismail] Serhang 24755” (K); [Mosul]: “NE of Qandil, c. 2850–3100 m, on mountain side. 26 XIII 1957. Ali Al-Rawi & Serhang 24440” (K).

These two gatherings is the only material based on which a related congener, *N. kurdica* (Hedge) Al-Shehbaz, has been reported for Iraq (Hedge, 1968; Hedge, Lamond, 1980, as *Thlaspi kurdicum* Hedge). Meyer (2006) questioned this information but, having no opportunity to check the specimens, left the problem open. A study of relevant plants revealed that they form very dense (vs. rather loose) cushions and possess profoundly veined and rigid, rosette chiefly linear to linear-oblongate and acute (vs. obscurely veined and softer, rosette spatulate and predominantly obtuse) leaves. Relevant characters distinguish *N. kurdica*, whose features are given in brackets, from a group of three closely related species, viz. *N. campylophylla*, *N. pulvinata* (F. K. Mey.) Al-Shehbaz, and *N. iranica* Al-Shehbaz, none of which was hitherto recorded from Iraq. Exact identification of the Iraqi plants is problematic for two reasons. The first is the scarcity and condition of specimens represented collectively by just three small fruiting plants with nearly all valves fallen off. The second is a closeness to each other of the mentioned three species, referred to herein as *N. campylophylla* s. l., and lack of a clear morphological distinction among them. Formally, because of the completely exauriculate cauline leaves, the discussed specimens are assignable to *N. iranica*. However, they do not exhibit sharp leaf heteromorphy (linear-filiform rosette vs. lanceolate to narrowly so stem leaves) reported for the latter species (Mozaffarian, 1996, as *Thlaspi pulvinatum* Mozaff.) and discernable on its type (TARI) and often, though not always so clearly, observed in *N. campylophylla*. In this, the Iraqi plants are most similar to the habitually and geographically closest *N. pulvinata*, but differ from it in bigger fruits (of the size and shape characteristic to *N. campylophylla*) without apical notch and absence of auricles in cauline leaves. In terms of stem leaf base, the most distant from the discussed specimens are typical plants of *N. campylophylla* which demonstrate clearly auriculate and deeply sagittate leaves, but it is noteworthy that others exhibit much

less developed auricles approaching in this respect *N. pulvinata*. It is a matter of further study to elucidate whether such characters as morphology of leaf base, fruit and petal size, development of valve wing and others used to distinguish the mentioned three entities of *N. campylophylla* s. l. (Meyer, 2006; Al-Shehbaz, 2014) are species-specific [and then all three if not four species, meaning additionally the Iraqi one, should be recognized] or there is a continuum of combinations reflecting differences in ecological conditions and possibly ontogenetic stage of individual plants. Available material is quite limited which hampers making sound conclusion on this matter.

By contrast and based on the above-said, it is difficult to agree with synonymizing *N. iranica* with *N. kurdica* proposed by Fakhr Ranjberi (2017). Hence, presence of the latter in the flora of Iran also needs confirmation having in mind that the earlier mention for Iran by Esfandiari (1978; cited from Akhiani, 2003) did not get support by subsequent studies (Meyer, 2006; Al-Shehbaz, 2014) either. Relevant gathering: “Iran, Azerbaidzan: Makou. Sarichaman to Guerklar. 2200–2600 m. 13 VI 1970. Termé 20188-E” (E [E00376260], JE, W 1972-01178) has been revised and cited by Meyer (2006: 221) as *Vania campylophylla* F. K. Mey. [s. str.] though again as *N. kurdica* by Fakhr Ranjberi (2017: 156). I fully agree with Meyer’s identification, and revision of other collections given in the Flora of Iran is needed to clarify whether they all belong to *N. campylophylla* and *N. iranica* or true *N. kurdica* still occurs in the country. Noteworthy, Termé’s collection [along with other three from Turkey cited below, all also from north-eastern part of the distribution area of the species] is peculiar for combining profoundly auriculate stem leaves with relatively broad, oblong-elliptic, distinctly winged and apically notched fruits, i. e., the characters of both *N. campylophylla* and *N. pulvinata*, thus stressing the above-mentioned problem of delimitation and status of the members of *N. campylophylla* s. l. complex. Relevant specimens are: “[B9/B10] Turkey: Prov. Van, Özalp, 2200 m; (metamorpher?) Kalk. 27 V 1966. J. Eiselt” (W 1966-21210, previously identified as *Aethionema* sp.); “[B9/B10 Ağrı, Doğubayazıt, between Kari and Sheikhbebo]: Turkish Armenia. Bayazet sandzhak. Kare – Bubu, stony slopes. 3 May 1916. B. Shishkin” (LE); “[B9 Ağrı, Doğubayazıt or less likely Diyadin]: Turkish Armenia. Bayazet sandzhak. Bubu – İpag, stony slopes. 4 May 1916. B. Shishkin” (LE). Specimens collected by B. K. Shishkin (initially annotated as

Lepidium caespitosum Desv. by him and the second one additionally as “*Lepidium* sp. nov.?” by P. H. Davis in 1959) are apparently the earliest and northernmost gatherings of *N. campylophylla*. They also appear to be a new record for Ağrı vilayet and the first of them is very likely a novelty for B10 grid square, but the lack of exact locality designation prevents claiming this for sure. The gathering from Özalp can similarly belong to any of B9 or B10 squares. Additional grid square and vilayet record for *N. campylophylla* s. str. is: “C10 Hakkari, Mor Dag. Mtn steppe, stony ridges screes, crevices, sparse herbage, common, scattered. Alt. 3250 m. 30 June 1967. A. R. Mitchell. Albury, Cheese & Watson 2994” (K, previously determined as *Thlaspi kurdicum* and “sp. aff. *Thlaspi kurdicum*”).

2. Deletions

Camelina hispida Boiss.

Uzbekistan: “USSR, Kyzyl-Kum, distr. Buchara (ca 75–80 km occid. ab oppido Buchara), alt. 150 m s. m., 4 V 1977, leg. Š. Husák” (GZU?).

Based on the cited specimen, this SW Asian (west Irano-Turanian) species has been reported by Mirek (1988) as a novelty for the flora of Uzbekistan and USSR as a whole. This information was not taken into account by subsequent authors (e. g., Czerepanov, 1995; Dorofeyev, 2019) apparently due to omission because no rebuttal has been hitherto published which is given below.

Unfortunately, a thorough search of the specimen in GZU yielded no result: most likely it was misplaced. At the same time, there are no doubts that it existed and was correctly identified which is supported not only by the authority of *Camelina* Crantz monographer, but also by a well-drawn illustration made from relevant plant clearly showing *C. hispida* var. *hispida*, in full accordance with Mirek’s determination.

A fact that the finding is highly unexpected was mentioned by Mirek (1988) himself who stressed that “it lies about 1000 km to the east to the continuous range of the species” and admitted that it could be of anthropogenic origin. Available facts demonstrate that another explanation is more likely. It was noticed that some specimens of Husák stored in GZU cannot originate from the localities mentioned in their labels and cases of confusion were found. Relevant examples are given below.

1. “URSS, Kara-Kum: Turkmenia, distr. Ashabad (ca 30 km boreo-occid. ab oppido Ashabad), alt. 80–100 m s. m. 16 IV 1979, leg.

Š. Husák” (GZU000322711). The specimen (originally identified as *Chorispora macropoda* Trautv.) belongs to *Ch. iberica* (M. Bieb.) DC. distributed in Caucasus, Transcaucasia and adjacent Iran and Turkey and never recorded from the Middle Asia.

2. “URSS, Azerbaidzhania: Montes Kobistan (ca 60 km austro-occid. ab oppido Baku), alt. 200 m s. m. 15 V 1976, leg. Š. Husák” (GZU000322722). This specimen of *Parrya khorasanica* (Rech. f. et Aellen) D. A. German et Al-Shehbaz (Middle Asia and adjacent Iran and Afghanistan), initially identified as *Erysimum* sp., is apparently a duplicate of the very similarly looking gathering “URSS, Uzbekistan: Montes Aman-Kutan (Zeravschanskij chrebet) 60–70 km austro-occid. ab oppido Samarkand, alt. 700–800 m s. m. 26 IV 1974, leg. Š. Husák” (GZU000322681) originally annotated as *Hesperis persica* Boiss. Both sheets bear the stamp “Herbar GZU Inv.-Nr. 48-97” proving that they are parts of the same gathering, mislabeled and properly labeled, respectively.

3. “URSS, Tjan-Schan: Uzbekistan, 60–80 km bor.-orient. ab oppide Tashkent, prope pagum Čimgan, alt. 1800–2200 m s. m. 2 V 1977, leg. Š. Husák” (GZU000322721, originally identified as *Erysimum croceum* M. Pop.) is *E. cuspidatum* (M. Bieb.) DC. not occurring in Middle Asia but common, in particular, in Caucasus. Correctly labeled duplicate bearing the same inventory number 119-82 is “URSS, Caucasus Magnus: Azerbaidzhania (ca 5–8 km bor.-occid. ab oppido Pirkuli), alt. 800 m s. m. 24 IV 1979, leg. Š. Husák” (GZU000322737, sub nom. orig. *E. substrigosum* (Rupr.) N. Busch).

Having these examples in mind, it is obvious that a surprising record of *Camelina hispida* from Uzbekistan represents similar case and finds its explanation in the label confusion. Occurrence of the species in Middle Asia is not confirmed.

***Dontostemon pinnatifidus* (Willd.) Al-Shehbaz et H. Ohba**

Nepal: “Thinigaon, [Mustang]. Muktinath Himal. 14000 ft. 23 VI 1954. Stainton, Sykes & Williams 1360” (BM [BM013412062], E [E00959950]).

This gathering is the single basis for the report of *D. pinnatifidus* for Nepal in the most recent treatment (Al-Shehbaz, 2015: 347, with reference to the specimen from BM). Simultaneously, both duplicates were cited under the name *D. glandulosus* (Kar. et Kir.) O. E. Schulz (Al-Shehbaz, l. c.: 346) and they in fact belong to this species. It appears

that BM specimen was cited twice, under previous (wrong) and subsequently corrected (though missing on the sheet) determination. In earlier treatment of Al-Shehbaz and Watson (2011), *D. pinnatifidus* was mentioned for the same and the only Nepalese region, Mustang. In addition to the above gathering, another specimen with relevant identification from that region was found: “Ghiling, 29°00' N, 83°52' E, 4000 m. 17. 05. [19]74. J. F. Dobremez, DBR 2992” (E [E00671102]) which is *Braya humilis* (C. A. Mey.) B. L. Rob. One more collection from Nepal identified as *D. pinnatifidus* has been seen, “[Dolpa], Kegar, 29°02' N, 83°18' E, 4400 m. 18. 06. [19]61. Jest 135” (E [E00826566])” which is referable to *D. glandulosus*, in full agreement with the data of both Al-Shehbaz and Watson (2011) and Al-Shehbaz (2015) reporting only this species of *Dontostemon* for relevant region. Taking into consideration the finding of Al-Shehbaz (l. c.: 347) not confirming the presence of *D. pinnatifidus* in Pakistan, it appears that localities in north-eastern part of M Yarlung Zangbo region of Flora of Pan-Himalaya (Al-Shehbaz, l. c.: 347) represent south-western limit of distribution of this species (cf. also Friesen et al., 2016).

Erysimum crassipes Fisch. et C. A. Mey.

Turkmenistan: “Regio transcaspica: Kasandschik [Bereket], in saxosis. VI 1901. P. Sintenis” (C).

Erysimum crassipes, one of the most common SW Asian wallflowers, has not been known from the Middle Asian region before recently when Polatschek (2010) reported it for Turkmenistan based on the single, above-cited specimen. There are no problems with its identification: the plant is unambiguously *E. crassipes*, as initially annotated (by J. Freyn? J. Bornmüller?) and later (in 2002) confirmed by Polatschek. In contrast, label information is not as unambiguous. First, the gathering is not numbered which is a rare case for P. Sintenis’s material collected in 1901. Similarly, quite untypical for this collector is that the gathering is confined to the single specimen (and plant). Third, the species is not included into respective account by Freyn (1903–1906). Fourth, the locality Kasandschik is accompanied throughout the text (Freyn, l. c.) exclusively with the date 28 IV 1901 and not June 1901. All this in sum combined with the fact that no other collections of *E. crassipes* from Turkmenistan are known, support the suspicion that the label of the discussed specimen is wrong and the

species has never been collected from this country and Middle Asia in general.

Noteworthy, the species was also reported by Polatschek (2011) for Georgia based on three gatherings of R. F. Hohenacker from Swant (Zuvand) region, i. e. originating from Talysh (Azerbaijan). This agrees with the fact that *E. crassipes* is absent in floristic treatments on Georgia (e. g., Khintibidze, 1979; Gagnidze, 2005) and within Caucasus/Transcaucasia is only known from southern regions of Armenia and Azerbaijan (Dorofeyev, 2012). No material from Georgia has been seen.

Noccaea kurdica (Hedge) Al-Shehbaz: not confirmed to occur in Iraq and presence in Iran requires confirmation (see comment to *N. campylophylla* above).

Noccaea trinervia (DC.) Steud.: occurrence in Turkmenistan is not confirmed on account of assignment of all relevant collections to *N. apterocarpa* (see comment to the latter species above).

Sterigmostemum acanthocarpum (Fisch. et C. A. Mey.) Kuntze

Turkmenistan: “Transcaspian prov., Ashabad distr., Kopet-dagh Mts., Gyaz-dagh Plateau. 11 V 1912. V. I. Lipsky 4016” (LE).

This is the only gathering based on which *S. acanthocarpum* has been mentioned for Turkmenistan (Jacquemoud, 1988: 112–114). It comprises five duplicates in LE, all determined in 1937 by N. P. Ikonnikov-Galitzky as “*Anchonium sterigmoides* Lipsky” [nom. nud., = *Sterigmostemum ramosissimum* (O. E. Schulz) Rech. f.], one of which was annotated by F. Jacquemoud in 1979 as *S. ramosissimum*. It is clear that a simple technical error is the reason of relevant report. Occurrence of *S. acanthocarpum* in Turkmenistan is thus not confirmed and it does not look much probable.

Other noteworthy cases

Cryptospora omissa Botsch. (*C. falcata* Kar. et Kir. s. l.)

[**Russia**]: “Astrakhan prov., Iskryaninskiy distr., Borovskoy Bugor, Bakhtemir. 30 VII 1951. Sharanina” (LECB, sub nom. “gen. sp.”).

Before the present time *C. falcata* s. l. has been registered in Russia only in Izhevsk in 1992–1993 as a rare alien plant found in the yard of a fruit/

vegetable warehouse (Ilminskikh et al., 1998; Baranova, Puzyrev, 2012) – apparently as an ephemero-phyte. The finding in Astrakhan region is clearly of the same status. Unfortunately, lack of ecological information on the label prevents making suggestions on possible way of introduction. Morphologically, the plant, similarly to gatherings from Izhevsk (one specimen seen in LE), corresponds to *C. omissa* covering the southern part (Middle Asia, Iran, Afghanistan) of *C. falcata* s. l. distribution area (Botschantzev, 1963).

Rhammatophyllum pachyrhizum (Kar. et Kir.)

O. E. Schulz

“Pr.[ope] Orsk 1852 leg. Antonow” (LE, sub nom. *Erysimum* sp.).

Quite spacious, though disjunctive area of this most widely distributed species of *Rhammatophyllum* O. E. Schulz stretches from NW to E Kazakhstan “within 45°30' and 50° N” (Kamelin, 2002: 101). Northernmost locality (mt. Ishkaragantau in ca. 30 km SW Akrab) stands about 15 km from the border with Russia (Knjasev, 2011) admitting the

possibility of finding the species in the latter country. The above label points vicinities of Orsk which in case of old collections may include dozens of kilometers, i. e., can refer to both Russia and Kazakhstan. However, the closest known locality (the above form Ishkaragantau) stands ca. 270 km apart from Orsk. The only other specimen with similar label seen is that of *Megacarpaea megalocarpa* (Fisch. ex DC.) Schischk. ex B. Fedtsch. (LE), a species also unknown in neighbourhood of Orsk but occurring much to the south. Hence, actual locality seems to be undetectable. Having in mind the lack of properly documented records of *Rh. pachyrhizum* from Russia, Kazakhstan appears the only option for the origin of this collection and the species therefore remains endemic to this country.

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