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KAROL MARHOLD

Lectotypification of names of the European representatives of *Cardamine* subg. *Dentaria (Cruciferae)*

Abstract

Marhold, K.: Lectotypification of names of the European representatives of *Cardamine* subg. *Dentaria (Cruciferae).* – Willdenowia 31: 43-49. 2001. – ISSN 0511-9618.

Five names of species of *Cardamine* subg. *Dentaria (Cruciferae),* originally treated within the genus *Dentaria,* are typified or lectotypified: *D. bulbifera, D. enneaphyllos, D. glandulosa, D. quinquefolia* and *D. heptaphylla*. Data on the types of the remaining, already lectotypified, currently accepted names of the European representatives of this subgenus are provided as well.

Introduction

During the revision of the genus *Cardamine* in its European area it was found to be desirable to typify the names of currently accepted taxa of *Cardamine* subg. *Dentaria*. The aim of this paper is to summarise information concerning the previously typified names and to select the lectotypes of remaining untypified names of accepted taxa. Although treated as a separate genus, e.g. by Detling (1936) and by some floras, it seems that the treatment of *Dentaria* species within the genus *Cardamine* is much more justified (cf. Al-Shehbaz 1988). Recent molecular systematic studies (Franzke & al. 1998, Sweeney & Price 2000) support this treatment as well. They suggest that the species included here provisionally in *C.* subg. *Dentaria* (L.) Hook. f. (following the treatment of the genus by Jones & Akeroyd (1993) in "Flora europaea") do not form a monophyletic group.

1. The previously lectotypified names

From among the accepted names of the European representatives of *Cardamine* subg. *Dentaria,* three have already been lectotypified:

Dentaria pentaphyllos L., Sp. Pl.: 654. 1753 ≡ *Cardamine pentaphyllos* (L.) Crantz, Cl. Crucif. Emend.: 127. 1769. – Lectotype (designated by Hedge in Jarvis & al. 1993: 42): Dentaria heptaphyllos Bauh. … In Horto Dei Galloprovinciae (UPS, herb. Burser, no. XVIII(1): 80).

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Dentaria polyphylla Waldst. & Kit., Descr. Icon. Pl. Hung. 2: 174, t. 160. 1805 ≡ *Cardamine kitaibelii* Bech. in Ber. Schweiz. Bot. Ges. 43: 57. 1934. – Lectotype (designated by Kováts 1992: 41): E Croatiae montibus ad Koreniczam et Priboy (BP, herb. Kitaibel, no. LI/111).

Dentaria trifolia Waldst. & Kit., Descr. Icon. Pl. Hung. 2: 148, 149, t. 139. 1805 ≡ *Cardamine waldsteinii* Dyer, Kew Handlist Herb. Pl.: 97. 1891. – Lectotype (designated by Chrtek & Skočdopolová 1982: 222): In subalpinis Croatiae [labelled by Waldstein] (PR, no. 155765/750).

2. Four new lectotypifications and other comments

Dentaria enneaphyllos L., Sp. Pl.: 653. 1753 ≡ *Cardamine enneaphyllos* (L.) Crantz, Cl. Crucif. Emend.: 127. 1769.
Lectotype (designated here): Dentaria triphyllos Bauh. Ad salinas Austriae Superioris (UPS, herb. Burser, no. XVIII(1): 83).

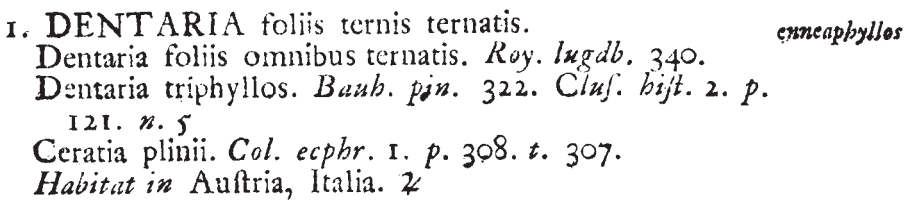

1. DENTARIA foliis ternis ternatis. enneaphyllos
Dentaria foliis omnibus ternatis. *Roy. lugdb.* 340.
Dentaria triphyllos. *Bauh. pin.* 322. *Cluſ. hiſt.* 2. *p.* 121. *n.* 5
Ceratia plinii. *Col. ecphr.* 1. *p.* 308. *t.* 307.
Habitat in Auſtria, Italia. ♃

Fig. 1. Linnaeus, Species plantarum, p. 653, 1753, the protologue of *Dentaria enneaphyllos*.

The diagnostic phrase name is Linnaeus's own and there is also a specimen at LINN (no. 834.1), bearing Linnaeus's inscription "1 *enneaphylla*" at the bottom of the sheet, "1" being the species number from "Species plantarum". This is considered to be strong evidence that the specimen was in Linnaeus's hands in 1753 (Jarvis 1992: 506).

Linnaeus, in the protologue (Fig. 1), also cited synonyms from van Royen (1740), Bauhin (1623), Clusius (1583) and Columna (1606). Van Royen's phrase name is connected with a specimen in the van Royen herbarium in Leiden (L, no. 901.220-39), which represents a complete plant with rhizome (although without flowers), undoubtedly corresponding to what is currently understood as *Cardamine enneaphyllos*. Bauhin's "Dentaria triphyllos", cited by Linnaeus, is associated with a specimen in volume XVIII(1) of Burser's herbarium in Uppsala, which is important for Linnaeus's interpretation of Bauhin's polynomials (cf. Savage 1937, Stearn 1957: 116), and thus represents another original element. This specimen (UPS, no. XVIII(1): 83, cf. Savage 1937: 59) is labelled as "Dentaria triphyllos Bauh. Ad salinas Austriae Superioris". It consists of two flowering plants without rhizomes or lower stems, again corresponding well with the current concept of the name *C. enneaphyllos*. Columna's name "Ceratia Plinii" cited by Linnaeus is accompanied by a very accurate illustration depicting most of the important identification characters of this taxon, including the rhizome (Columna 1606: 307-310). As well as an illustration, Clusius (1583: cxxj) provided detailed information about the distribution of this taxon: "Exit in umbrosis Austriae, Stiriae, Carinthiae, Pannoniaeque silvis, non modo ad montium radices, sed etiam circa mediam eorum regionem, ubi praeltarum arborum silvae ut plurimum, in Alpibus hujusmodi desinere solent. Inveniebam & ultra Dravum, in monto Greben imminenti, cum Quarto genere bulbifero [= *Cardamine bulbifera*]: atque etiam Hercinia silva Bohemiam ambiente." Indeed, as currently understood, *C. enneaphyllos* occurs from Germany and Poland in the north through the Czech Republic, Slovakia, Austria and Hungary to Italy, former Yugoslavia, Albania and Romania in the south (cf. Jalas & Suominen 1994: 149).

From among the available specimens, the one from Burser's herbarium is selected because of its known origin.

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Dentaria bulbifera L., Sp. Pl.: 653. 1753 ≡ *Cardamine bulbifera* (L.) Crantz, Cl. Crucif. Emend.: 127. 1769.
Lectotype (designated here): Dentaria heptaphyllos baccifera Bauh. / In montibus Lusatiae, Misiniae & c. In Insula Moena. Et Sorae (UPS, herb. Burser, no. XVIII(1): 82).

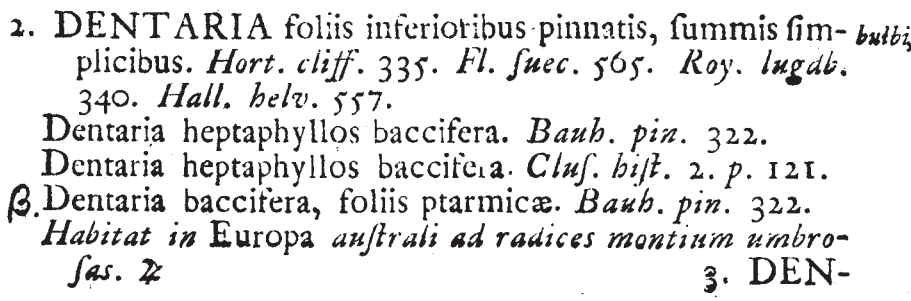

2. DENTARIA foliis inferioribus pinnatis, ſummis ſim- *bulbifera.*
plicibus. *Hort. cliff.* 335. *Fl. ſuec.* 565. *Roy. lugdb.*
340. *Hall. helv.* 557.
Dentaria heptaphyllos baccifera. *Bauh. pin.* 322.
Dentaria heptaphyllos baccifera. *Cluſ. hiſt.* 2. *p.* 121.
β. Dentaria baccifera, foliis ptarmicæ. *Bauh. pin.* 322.
Habitat in Europa *auſtrali ad radices montium umbro-*
ſas. ♃ 3. DEN-

Fig. 2. Linnaeus, Species plantarum, p. 653, 1753, protologue of *Dentaria bulbifera.*

The diagnostic phrase name is repeated unchanged from "Hortus cliffortianus" (Linnaeus 1738). It is also cited via van Royen (1740), Haller (1742) and "Flora suecica" (Linnaeus 1745). In the last work instead of the word "pinnatis" the word "palmatis" appears. This seems to be a mistake as this word was corrected to "pinnatis" by Linnaeus himself by hand in his own copy of the first edition of "Flora suecica" and changed correspondingly in the second edition (Linnaeus 1755: 229). However, there is no specimen of this species in Clifford's herbarium (BM). On the other hand, there is a specimen in the Linnaean herbarium in London (LINN, no. 834.2), which might come from one of the Swedish localities cited by Linnaeus (1745: 204, 1755: 229). The specimen bears the inscription *"2 bulbifera"* in Linnaeus's hand, the number "2" being the species number from the "Species plantarum" (Fig. 2), and it is thus original material for the name. Two synonyms are cited from Bauhin's "Pinax" (Bauhin 1623: 322). There is a second specimen, in Burser's herbarium, labelled "Dentaria heptaphyllos baccifera Bauh. / In montibus Lusatiae, Misiniae &c. In Insula Moena. Et Sorae" (cf. Juel 1936: 119). It is also original material for the name (cf. Savage 1937: 59). The other phrase name from Bauhin's "Pinax" is not associated with any specimen in Burser's herbarium. Both aforementioned specimens correspond well with *Cardamine bulbifera* (Jones & Akeroyd 1993). The better preserved one, from the Burser herbarium, is selected here as lectotype.

Dentaria quinquefolia M. Bieb., Fl. Taur.-Caucas. 2: 109. 1808 ≡ *Cardamine quinquefolia* (M. Bieb.) Schmalh., Fl. Sredn. Už. Rossii 1: 51. 1895.
Lectotype (designated here): Ex Tauria et Caucaso [F. A. Marschall von Bieberstein] (LE [the plant in the upper right corner of the sheet, Fig. 3]).

Dentaria quinquefolia was described by Marschall von Bieberstein (1808) from the Crimea [= "Tauria"] and Caucasus ("Habitat in Tauriae et Caucasi sylvis sub arboribus"). The European part of its distribution area extends from Ukraine, E Romania, E Bulgaria and Turkey to the central part of European Russia (cf. Jalas & Suominen 1994: 148).

There is a relevant specimen in Marschall von Bieberstein's main collection in the St Petersburg herbarium (LE) where his specimens are known to be deposited (cf. Stafleu & Cowan 1981: 305, Lanjouw & Stafleu 1954: 73). It bears a characteristic blue label "*Dentaria pinnata* / Ex Tauria et Caucaso". There is no collection date on the label, but the reference to the name "*Dentaria pinnata* Pall. ind. taur." (referring to the catalogue of plants from Crimea, see Pallas 1795, 1797) in the protologue (Marschall von Bieberstein 1808: 109) indicates that Marschall von Bieberstein used this name for *D. quinquefolia* before 1808. Therefore, as this specimen un-

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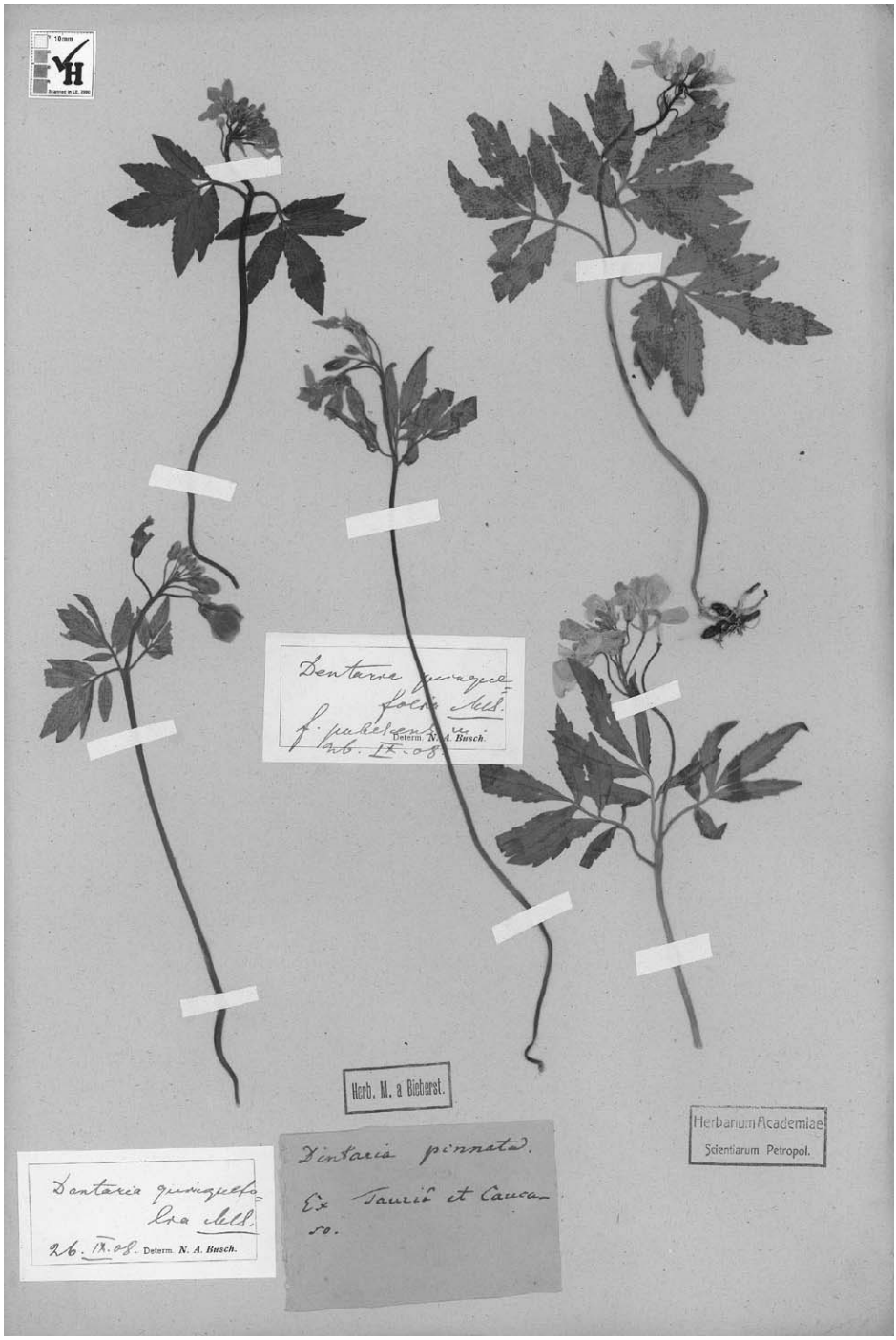


Fig. 3. The lectotype of the name *Dentaria quinquefolia* (LE). – By courtesy of the Komarov Institute of Botany, Russian Academy of Sciences, St Petersburg.

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doubtedly belongs to the original material, albeit representing probably more than one collection, one of the plants on the sheet (the most complete one) is selected here as a lectotype. The other relevant specimen which was possible to trace, is in the herbarium of the Museum of Natural History in Vienna (W) labelled as follows: "*Dentaria quinquefolia* MB. / M. de Bieberstein / Caucasus". According to the label, the specimen was originally deposited in the herbaria of Lindemann and Pittoni. It also bears a revision label by O. E. Schulz of 11.5.1902 (cf. Schulz 1903: 359), confirming the identification. However, it bears no date and there is no clear indication that it is original material.

Dentaria heptaphylla Vill., Hist. Pl. Dauphiné 1: 281. 1786 ≡ *Cardamine heptaphylla* (Vill.) O. E. Schulz in Bot. Jahrb. Syst. 32: 371. 1903.
Lectotype (designated here): *Dentaria eptaphyllos* [Villars] (GR, no. MHNGr.1837.27769).

Dentaria heptaphylla and *D. pentaphyllos* were recognised as separate entities by Bauhin (1623) and there are also well-preserved specimens in the herbarium BAS which correspond to the present interpretation of these names. It is known that Linnaeus interpreted Bauhin's names from the latter's "Pinax" and the corresponding specimens in Burser's herbarium. There are two specimens bearing relevant annotations in the Burser herbarium: (1) no. XVIII/80: "Dentaria heptaphyllos Bauh. Licet hoc exemplar non nisi quinquifolium sit. Zahnkrautt. In Horto Dei Galloprovinciae" (cf. Juel 1936: 119); (2) no. XVIII/81: "Dentaria pentaphyllos Bauh. In Muteto Basileensium" (cf. Savage 1937: 59). However, the first specimen represents *D. pentaphyllos* and was selected recently as the lectotype of this name, while the second one belongs to *D. heptaphylla* Vill. Perhaps because of this confusion Linnaeus appears not to have recognised these taxa as separate species and referred to them only as unnamed varieties α (= *C. heptaphylla*), β and γ (= *C. pentaphyllos*) of his *D. pentaphyllos*.

The first author after Linnaeus who recognised *Dentaria heptaphylla* at species level was Villars (1786) who provided the formal description, referring to it as "*Dentaria heptaphylla* L." (Ind. loc.: "[Dauphiné] Grande Chartreuse"). There are two sheets of *D. heptaphylla* bearing the number MHNGr.1837.27769 (but representing probably two collections) in Villars's herbarium in GR, where the majority of Villars's specimens are deposited (Stafleu & Cowan 1986: 739, Vegter 1988: 1088). The first sheet (Poncet 1999: 144) bears a label "*Dentaria Eptaphyllos*" written by Dominique Villars (Poncet, in litt). As it was part of Villars's own herbarium it is very likely that it is original material, in spite of the fact that it does not bear the collection date. The second sheet (Poncet 1999: 145) bears the label: "*Dentaria heptaphyllos* Vill. sp. 365 herb n° 1429 / pinnata Lam. DC. n° 4204 Wild / *Cardamine pinnata* Ait. / ... Les bois des Montagnes au Soleir [mountainous forest, on the sun]". The label can be attributed to Artus de Mirbel, a botanist who reorganised Villars's herbarium in 1827. The origin of this sheet is uncertain (Poncet, in litt.). Another specimen which might also be original material is deposited in G. It is labelled "*Dentaria heptaphylla* Vill. [originally written and later crossed "L."] / *pinnata* Lam. Willd. / Vill. misit." The specimen is annotated as "Typus delphinensis Villarsii !" probably by Briquet (Jacquemoud, G, in litt.) and was seen, and its identification confirmed, by O. E. Schulz (1903: 370). The specimen was originally in the herbarium Delessert. Both collections in Villars's herbarium and the specimen in G correspond well with the present understanding of *C. heptaphylla* (Jones & Akeroyd 1993). The slightly better preserved specimen at GR with the label written by Villars is selected here as the lectotype.

Dentaria glandulosa Waldst. & Kit. ex Willd., Sp. Pl. 3: 478. 1800 ≡ *Cardamine glanduligera* O. Schwarz, Repert. Spec. Nov. Regni Veg. 46: 188. 1939.
Holotype: Habitat in Hungariae sylvis subalpinis, *Kitaibel* (B-W 11955).

This taxon was described by Willdenow (1800) based on herbarium material received from Kitaibel: "Habitat in Hungariae sylvis subalpinis (v.s.)" ("v.s." in the protologue means that Willdenow had seen dried specimen(s) of this plant). There is a specimen collected by Kitaibel

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and labelled "Habitat in Hungariae sylvis subalpinis" in the Willdenow herbarium in Berlin (B-W 11955), which is most probably the holotype.

Dentaria glandulosa Waldst. & Kit. (1812) is a later homonym of Willdenow's name. Kováts (1992: 41) selected a lectotype for this name in the herbarium BP, collected and labelled by Kitaibel as "*Dentaria enneaphylla* corollis albis. Est nova species glandulosa dicenda cum in … et axillae foliolorum glandulas gerant. E Scepusio a Mauksch". The specimen is not a duplicate of the specimen from Willdenow's collection and thus has no direct relevance to the name *D. glandulosa* Willd.

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