

NOTES ON UMBELLIFERAE: SOME ASIATIC SCANDICEAE

I. C. HEDGE & J. M. LAMOND

ABSTRACT. Notes are given on various Umbelliferae including the following new taxa and combinations: *Chaerophyllum nivale* Hedge & Lamond; *C. reflexum* Lindl. var. *occidentale* Hedge & Lamond, var. *tuberosum* Hedge & Lamond, var. *acuminatum* (Lindl.) Hedge & Lamond, var. *dissectum* (C. B. Clarke) Hedge & Lamond; *C. laseroides* Hedge & Lamond (= *C. aquilegifolium* Rech. f. & Riedl non Kos.-Pol.). *C. villosum* [Wall. ex] DC. is shown to be restricted to the E Himalaya-W China region and a map is given. Three taxa are excluded from Scandiceae: *C. nuristanicum* Rech. f. = *Vicatia conifolia* DC.; *C. reflexum* var. *orientalis* C. B. Clarke = *Pimpinella sikkimensis* C. B. Clarke; *Rhopalosciadium stereocalyx* Rech. f. should be placed in the Dauceae.

No Flora can hope to keep its species tidily within political areas and this is especially true of the NE boundary of K. H. Rechinger's *Flora Iranica* where many of the problems spill eastwards from northern Pakistan into Kashmir and along the Himalayan chain. In addition to dealing with various taxa pertinent to the account of Scandiceae for *Flora Iranica* it seemed appropriate to clarify or highlight various Himalayan problems that emerged during work undertaken for that Flora.

The specimens cited have been seen unless otherwise stated and thanks are due to the authorities of the various herbaria which gave us loans. In most cases only a selection of the specimens studied is given.

CHAEROPHYLLUM

IRANIAN SPECIES

Chaerophyllum nivale Hedge & Lamond sp. nov.

Affinis *C. hakkiarico* Hedge & Lamond sed caudice caulibusque tenuioribus, radii paucioribus bene differt.

Herba perennis 15-25 cm, caudice tenue. *Caules* debiles erecti, teretes, glabri vel parce pilosi. *Folia inferiora* ambitu triangularia, petiolo inclusa 7-16 × 5-10 cm, 2 × pinnata, 3-4-juga, segmentis ultimis ovatis, ± profunde et obtuse lobatis, 0.5-1.5 cm longis, breviter et parce pilosis praesertim superne; petiolus quam rhachide aequalis vel brevior. *Folia superiora* pauca, multo breviora. *Pedunculi* 1.5-9 cm, graciles, glabri vel superne pilosi. *Bractee* 0-1, membranaceae, ovatae, 1-2 mm. *Radii* 2-3, inaequales, 1-5.5 cm, glabri vel parce pilosi. *Bracteolae* c. 5, elliptico-lanceolatae, 1.5-2 mm longae, pilis albis patulis provisae. *Pedicelli* 6-17, 1-5 mm longi, capillacei, in fructu incrassati. *Flores* ± ignoti, pro maxime parte masculini tantum 1-3 in quoque umbellula hermaphroditi. *Lobicalycum* desunt. *Petala* alba, c. 1 mm. *Fructus* vix maturus, 10-12 mm longus, lineari-oblongus, stramineus, valleculis fuscis, glaber. *Stylopodium* planum discoideum margine parum sinuatum. *Styli* 1-2 mm, divergentes. *Floret* Jul.

IRAN. Prov. Esfahan: Bakhtiari country, Tang-i Sirdan between the Kurang and Bazuft valleys, crevices and ledges on sheer W-facing limestone cliffs, white, ? tuberos, 4110 m, 7 viii 1966, *Archibald* 3033 (holo. E, iso. K).

C. nivale, which is only known from the cited gatherings, is related to *C. hakkiaricum* from SE Turkey but differs in its slender habit and fewer rays. No material of the Transcaucasian *C. kiapizii* Woron. (*Fl. URSS* 16:590, 1950) has been seen, but in habit our species resembles the illustration of it (*ibid.*: 105, t. 7, f. 1). *C. nivale* differs, however, in its fewer rays and longer fruits with only a few in each umbellule developing.

Archibald's field notes suggested the possible occurrence of a tuberous root since long, pale, slender stem and leaf bases are present and these are often indicative of such a tuber (e.g. in species of *Conopodium* or *Bunium*). However, it seems more likely that the species is not tuberous and that the elongate leaf and stem bases are the result of the crevice habitat: one plant on the Kew sheet shows the lower stem to be clothed in dark membranous leaf remains.

HIMALAYAN SPECIES

While preparing the account of *Chaerophyllum* for *Flora Iranica* it became obvious that the taxonomy and nomenclature of the taxa at the eastern end of the region were in need of revision. Examination of a range of specimens, including types, from eastern Afghanistan to China showed that the following eight taxa should be recognised.

C. capnoides (Dcne.) Benth. in Benth. & Hook. f., *Gen. Pl.* 1:898 (1867).
Syn.: *Butinia capnoides* Dcne. in Jacquem., *Voy. Bot.* 70, t. 80 (1844).

Conopodium capnoides (Dcne.) Kos.-Pol. in *Bull. Soc. Nat. Mosc.* 1915 n.s. 29:206 (1916).

Apotaemia capnoides (Dcne.) Kos.-Pol. *l.c.* in *synon.*, *nom. dub.*?

Tuberous perennial, glabrous with 1–2 × pinnate leaves, ultimate segments entire margined, ± oblong.

Syntypes. Kashmir: Ouri and Nouchaira [Naoshera?], banks of the Djhelone [Jelum?], 1980 m; Punjab?: between Gereti and Gougoulgaon, 2400 m, *Jacquemont* 920 (P—n.v.), 308 (K, P—n.v.).

PAKISTAN. Swat: Pashmal, c. 1830 m, *Y. Nasir* 3451 (RAW).

KASHMIR. Poonch: Khai Gala, *Rashid, Stewart & Nasir* 25635 (RAW).

INDIA. Punjab: Kulu, Shiba Nulla, *Koeltz* 1923 (NY, RAW); Jaunsar, nr Koti Kanasar, 2130–2440 m, *Duthie* 14473 (E); Tihra Garhwal: Bamsu valley, 2130–2440 m, 7 v 1895, *Duthie* s.n. (K); NW Himalaya, 1830–2440 m, *T. Thomson* (E).

C. laseroides Hedge & Lamond **nom. nov.**

Syn.: *C. aquilegifolium* Rech. f. & Riedl in *Biol. Skr.* 13, 4:44 (1963) non Kos.-Pol. (1916).

Tuberous perennial, sparsely to densely pilose with 2–3 × ternate leaves, ultimate segments lobed, ovate.

Type. Afghanistan, NE Nuristan, upper Pech (Parum) Valley between Tschetras and Wama, 1500–2000 m, *Kerstan* 851 (holo. W, iso. HAL—n.v.).

AFGHANISTAN. Kabul, Tang-e Gharu, *Freitag* 4670 (herb. Freitag); Laghman, W of Nangarhaj, W of Shakur, 1750 m, *Breckle* A1668 (herb. Breckle).

PAKISTAN. Chitral: Paltisun Nullah, c. 2130 m, *Toppin* 192 (K); Brir, *A. Beg* 6348 (RAW, K, PFI-B—n.v.); Chitral district, *Hamilton* s.n. (W, K).

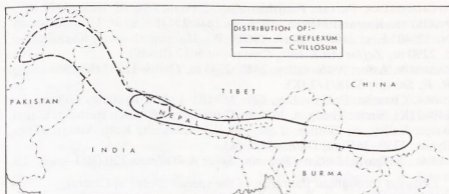


FIG. 1. Distribution of *Chaerophyllum reflexum* and *C. villosum*.

The specific epithet refers to the similarity between the shape of the leaflets in this species and *Laser trilobum* L. though those of *C. laseroides* are considerably smaller.

C. capnoides and *C. laseroides* differ from other species of the genus in the lack of vittae. Insufficient mature material is available to ascertain whether they should be treated as a separate genus. Dr Lennart Engstrand (Lund) excludes them from Bunieae on fruit characters (in having \pm globose tubers they resemble species of *Conopodium*, *Geocaryum* and *Bunium*); he points out that they seem to fit the description of the Central Asiatic *Krasnovia* M. Pop. (*Fl. URSS* 16:591, 1950). More material of all the species involved would be necessary for study before a definite decision could be reached.

***C. reflexum* Lindl. in Royle Ill. 232 (1835).**

Syn.: *C. villosum* auctt. Pakistania et Himalaya occident. non DC.

Annual to perennial, leaves 1–4 \times pinnate, flowers usually white, petals \pm bilobed, outer often somewhat enlarged (not showy).

C. reflexum is an extremely variable species in which, with the quantity of material now available for study, it is possible to distinguish five varieties, although little correlation could be found between characters previously used to separate taxa: indumentum, number of fruit per umbellule, shape and size of fruit. Because numerous intermediates occur between the varieties and many specimens are immature or inadequate, only indisputable specimens are cited. A distribution map is given in Fig. 1.

var. *reflexum*

Syn.: *C. cachemiricum* C.B. Cl. in Benth. & Hook. f., *Fl. Brit. Ind.* 2:691 (1879)—Type. India: Chamba, Dalhousie, c. 2130 m, *C. B. Clarke* [22618 A] (K).

Annual to short-lived perennial usually growing from a tap root, up to 80 cm high; basal leaves 3–4 \times pinnate.

Type. India: NW Kumaun, Kedarkanta and Nagkanda, Royle (CGE, K, BM—photo).

AFGHANISTAN. Parvan: Panjshir valley, 2500 m, *Hdg. & Wdb.* 5122 (E).
 PAKISTAN. Kurram: 3350 m, *Aitchison* 1880:294 (K). Swat: Ushu, c. 35°40' N, 72°40' E, c. 2400 m, *Rech.* 19503 (W). Hazara: Shogran, Kagan valley, c. 2290 m, *Zaffar Ali & Fritz Grohmann* 6012 (RAW).

KASHMIR. Astor: Astor valley, 2440–2745 m, *Duthie* 12253 (K). Sonamarg, *R. R. Stewart* 6318/1/2 (K).

INDIA. Chamba: Pangi valley, *Ellis* 359 (K). Lahul: Kyelang, 3200 m, *Bor* 14989 (K). Simla: Theog, c. 2050 m, *Drummond* 1606 (K). Bashahr: Chasu, Baspa Valley, c. 2740 m, *Lace* 397 (E). Kumaun: Kutti Yangti valley, Byans, 3350–3650 m, *Duthie* 5597 (K).

NEPAL. Sialgarhi, 2895 m, *Polunin, Sykes & Williams* 120 (BM—n.v., E).

Growing throughout the range of the species except in Chitral.

var. **acuminatum** (Lindl.) Hedge & Lamond **comb. et stat. nov.**

Syn.: *C. acuminatum* Lindl. in Royle III. 232 (1835).

Annual or biennial (?) up to 120 cm; leaves pinnate, the lowest pinnae sometimes ternate, leaflets narrowly ovate-triangular up to 9 × 2.5 cm, margin finely falcately serrate, outer petals often spreading.

Type. India: [Simla] Choor [30°52' N, 77°32' E], *Royle* (CGE—photo).

PAKISTAN. Gilgit: Babusar village, c. 3960 m, *Siddiqi & Y. Nasir* 2780 (RAW). Hazara: Kaghan valley, Naran, 2380 m, *Burt & Arshad Ali* 830 (E).

KASHMIR. Gulmarg, *Aitchison* 31 (E).

INDIA. Kulu & Lahul: Swajani Maidan, c. 3350 m, *Mohindar Nath* 998 (RAW). Dehra Dun: Mussooree, 1520–2740 m, vi 1845, *T. Thomson* (E).

The most characteristic state of var. *acuminatum* has long coarse leaflets distinctively falcately-serrate at the margin, but there are many intermediates between it and var. *reflexum*. Var. *acuminatum* is often found in damp places. Hiroe (*Umbelliferae of Asia* 1:45, 1958) treated *C. acuminatum* as a synonym of *C. aromaticum* L., but it clearly differs from that European species in leaf and fruit characters.

var. **dissectum** (C.B. Cl.) Hedge & Lamond **comb. nov.**

Syn.: *C. cachemirica* C.B. Cl. var. *dissecta* C.B. Cl. in Benth. & Hook. f., Fl. Brit. Ind. 2:691 (1879).

Sturdy biennial (or short-lived perennial?), 16–35 cm high, rather rigidly branched from below.

Type. Kashmir: Sind Valley, c. 3650 m, *C. B. Clarke* [31009 A, C] (K).

PAKISTAN. Swat: nr Ushu, *R. R. Stewart & Rahman* 25296 (RAW).

KASHMIR. Kilan Marg, 3050–3350 m, *Aitchison* 41 (K); Badzulkod nala, 3960 m, *Duthie* 13420 (BM, E).

This comparatively low-growing variety is found mainly at high altitudes and can be recognised by its distinctive branching. The stems and rays are often rather rigid. According to Aitchison the plants are 'locally used as carrots while bears are very fond of the roots which although sturdy are scarcely succulent'.

var. *occidentale* Hedge & Lamond var. nov.

A varietatibus ceteris *C. reflexi* radice valido manifeste perenne differt.

Perennial, 8–45 cm high, often with stems densely hairy below and leaves finely dissected.

Type. Pakistan. Swat: above Utrot, c. 2750 m, 21 vii 1953, *R. R. Stewart & A. Rahman* 25224 (holo. K, iso. RAW).

AFGHANISTAN. Laghman: Alishang, upper Darrah Rastyon, 3200 m, *Hedge, Wendelbo & Ekberg*, W. 9664 (E). Nuristan: Pashki, 2300 m, *Edelberg* 897 (W, C—n.v.). Jaji: Peiwar Kotal, 33°58' N, 69°55' E, 2650–2800 m, *Rech*. 32233 (W), *Lamond* 2496 (E, M).

PAKISTAN. Kurram: *Harsukh* 14947 (W). Chitral: Madaklasht, NE of Drosh, c. 3660 m, *Stainton* 3115 (W, E, BM). Swat: Kalam, *R. R. Stewart* 24723 (RAW). Hazara: Nathia Gali, c. 2440 m, *R. R. Stewart* 28372 (E).

The specimens seen from Nuristan and Chitral have less divided leaves and are less villous than those from elsewhere. This variety grows from 2300–3800 m at the western end of the species range.

var. *tuberosum* Hedge & Lamond var. nov.

Var. *acuminato* foliolis anguste triangularibus similis sed minoribus, ab eo ceterisque varietatibus *C. reflexi* radice tuberoso differt.

Annual or biennial with a swollen tuberous root, 20–60 cm high, leaflets of upper leaves often narrow triangular, serrate.

Type. Kashmir: Burzil pass, 3660–3960 m, 1 viii 1946, *R. R. Stewart* 22051a (holo. K).

PAKISTAN. Gilgit: Deosai to Chilam, c. 3500 m, *Webster & Nasir* 6404 (RAW).

KASHMIR. Baltistan: Suk nullah, Dras valley, 3350–3656 m, *Duthie* 11680 (E). Kashmir: Sonamarg, *R. R. Stewart* 7244 (K). Ladakh: E of Srinagar, Lidder valley, nr foot of Kolhoi glacier, 3656 m, *Maxwell* 3 (E). Kishtwar: Kishtwar, 2130–2440 m, 15 vi 1848, *T. Thomson* (K, E).

INDIA. Chamba: Pangi, *Devi Ditta* in *Lace* 1732 (E). Lahul: Lower Chandra valley, *Drummond* 23103 (K).

Like var. *acuminatum*, var. *tuberosum* is clearly recognisable in its most typical state, but numerous intermediates between it and var. *reflexum* exist and it may only be a high altitude state of that variety. The root swells to form ± elongated or ovoid tubers at the rootstock (unlike the globose, remote tubers found in *C. capnoides*). However, material seen since this paper was prepared (at A, GH, NY & US) suggests that tubers may occur in both var. *reflexum* and var. *acuminatum*. These varieties tend to be taller growing and collections frequently lack basal parts.

Further collecting and careful field observations are needed to clarify whether the varieties of *C. reflexum* recognised above are merely a result of altitude and habitat. As already stated many intermediates exist and it is not possible to assign every specimen to a particular variety with confidence.

C. villosum [Wall. ex] DC., Prodr. 4:225 (1830).

Syn.: *Anthriscus boissieu* Lévl. in Bull. Acad. Géog. Bot. 24:281 (1914) & Cat. Pl. Yunnan 182 (1916).

Flaccid annual with often spotted stems, 3–4 × pinnate leaves attenuate at apex, few rays, often pink flowers with ± entire ovate equal petals, several fruits per umbellule and short styles.

Type. Nepal: nr Chaudaghiri, *Wallich* (K; photo, G–DC).

INDIA. Kumaun: *T. Thomson* 1131 (K). Assam: Khasia, Upper Kala Pani, c. 1220 m, *C. B. Clarke* 7307' (K).

NEPAL. Munigaon, SE of Jumla, c. 2740 m, *Polunin, Sykes & Williams* 4868 (BM—n.v., E); Langtang village area, c. 3500 m, *Polunin* 1562 (BM—n.v., E); Tamur valley, Walungchung Gola, 3200 m, *Stainton* 1043 (BM—n.v., E).

BHUTAN. Lao, Trashig Yangsi Chu, *Ludlow, Sherriff & Hicks* 20600 (BM).

SIKKIM. Chumbi, *Cooper* 265 (E). Cheung Tang, c. 1830 m, *Smith & Cave* 908 (K).

CHINA. Yunnan: east of Tengyueh, 25° N, c. 1830 m, *Forrest* 8283 (E); Tcha-ho, 2550 m, *Maire* s.n. (E).

The name *C. villosum* has been applied to plants found between Afghanistan and Western China but in the west of its range it has been confused with taxa of the *C. reflexum* group. With the amount of material now available it is clear that *C. villosum* only grows at the eastern end of this range from the Central Himalayas eastward to the Khasia hills and Yunnan (Fig. 1). It is an annual plant probably quite close to the European *C. temulum* L. The type specimen of *C. villosum* at Kew was studied by C. B. Clarke who considered it to be a mixed collection with *C. reflexum*, presumably on indumentum characters. This does not seem to be the case: the specimens of *C. villosum* recently collected show a considerable range of variation in their indumentum and that of the type material at Kew falls well within this range. The entire petals and short fruiting styles of *C. villosum* distinguish it from *C. reflexum* in the Kumaun region where the distributions of the two species overlap.

TAXA EXCLUDED FROM SCANDICEAE

Chaerophyllum nuristanicum Rech. f. & Riedl in Biol. Skr. 13, 4:44 (1963)—described from Afghanistan: Nuristan, Derin Elason, *Edelberg* 1716 (W, C) = *Vicatia coniifolia* DC.

Chaerophyllum reflexum var. *orientalis* C. B. Clarke in J. Linn. Soc. Bot. 25:28, pl. 16 (1889)—described from India: Assam, Jakpko, 7000 ft, *Clarke* 41861 (K) = *Pimpinella sikkimensis* C.B. Cl.

C. Norman has already pointed out this synonymy on a sheet of the variety at Kew. It has recently been treated as a species, *C. orientalis* (C.B. Cl.) P.K. Mukh. by P. K. Mukherjee in 'A Resumé of Indian Umbellifers' in *Act. 2ème Sympos. Internat. Ombell.* 60 (1978). Two sheets in the type cover at Kew, labelled 41861 A & B, both from 'Kegwima ridge, Naga Hills, 700 ft' are determined as var. *orientalis* in C. B. Clarke's writing. Kegwima ridge is part of the Japvo massif which lies south of Kohima (see C. B. Clarke in *J. Linn. Soc. Bot.* 22:128–136, 1886) so the material can be taken to be type.

Rhopalosciadium stereocalyx Rech. f. in Anz. Öst. Akad. Wiss. Math.-nat. Kl. 89:240 (1952). This monotypic genus is only known from the type gathering from Iran: Luristan, Durud, 22 v 1940, Koelz 15715 (BPI—n.v., W). It is a small rather insignificant annual and was originally placed in the Scandiceae, presumably on account of the linear fruits. However the indumentum on the fruit is more akin to that found in members of the Caucalinae, e.g. *Torilis* species with which the plant was growing in the wild. This view is shared by Dr S. Jury, a member of the team working on that tribe at Reading where the material is now being studied. *Rhopalosciadium* is consequently excluded from the Scandiceae account for *Flora Iranica*.