

A TAXONOMIC REVISION OF THE GENUS *LACTUCA* L. (CICHORIEAE- ASTERACEAE) FROM PAKISTAN AND KASHMIR

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Abstract

The genus *Lactuca* L. of the tribe Cichorieae-Asteraceae is taxonomically revised from Pakistan and Kashmir. The revision is based on study of large number of herbarium specimens. In few cases plants have also been studied in their natural habitat. A total of 13 species are recognized from Pakistan and Kashmir including 1 new species i.e. *Lactuca erostrata* Roohi Bano & Qaiser. A new combination *Lactuca orientalis* subsp. *nuristanica* (Podlech) Roohi Bano & Qaiser is also proposed. All the taxa valid or synonyms have been typified with the help of type specimens and literature. Key to the species along with detailed morphological description and ecological notes of each taxon are also given.

Introduction

The generic name *Lactuca* L. is derived from a Latin word "Lac" means "milk", a common character to all the members of the tribe Cichorieae. The genus *Lactuca* L. (s.l.) was established by Linnaeus (1753, 1754) and described 6 species under it. Later, the taxonomic treatment of the genus *Lactuca* L. (s.l.) was carried out by various workers on global and regional basis such as De Candolle (1836), Bentham (1873), Boissier (1875), Clarke (1876), Hooker (1881), Rechinger (1955), Kitamura (1960,1964), Kirpicznikov (1964), Jeffrey (1975), Feráková & Sell (1976), Rechinger (1977), Mamgain & Rao (1995), Chaudhary (2000), Grierson & Springate (2001), Thulin (2006), Lack (2007).

The generic circumscription of *Lactuca* L. has always been a source of disagreement among the different authors. Sojak (1961, 1962), Tuisl (1968) and Jeffrey (1975) accepted the narrow generic concept of *Lactuca* L. Similarly Shih (1987, 1988, 1991) and Bremer (1994) also adopted narrow generic concept and numerous genera, previously treated as sections of *Lactuca* L. (s.l.) viz., *Cephalorrhynchus* Boiss., *Cicerbita* Wallr., *Scariola* F.W. Schmidt, *Lagedium* Sojak, *Mulgedium* Cass., and *Steptorhamphus* Bunge were resurrected. On the other hand, number of authors such as Bentham (1873), Stebbins (1937) and Kirpicznikov (1964) reduced various genera to subgeneric or sectional level of the genus *Lactuca* L.(s.l.) Recently Lack (2007), Mabberley (2008) and Kilian *et al.* (2009) also adopted the broader generic concept of *Lactuca* L. and sinked various genera including *Lactucella* Nazarova, *Mulgedium* Cass., *Steptorhamphus* Bunge and *Scariola* F.W. Schmidt under its synonymy.

Various species of *Lactuca* L. are considered to be economically and medicinally important. *Lactuca sativa* L., a popular salad crop, is much valued for its mineral and vitamin contents. The seeds of *Lactuca serriola* L. are used in the form of powder for cough and as a decoction for insomnia. It also yields semi-drying fatty oil with an agreeable odour suitable for making soap, paints and varnishes. *Lactuca sativa* L., and *Lactuca serriola* L., also yield a drug "Lactucarium", used as hypnotic in bronchitis and asthma (Ambasta *et al.* 1986; Pullaiah, 2006). *Lactuca tatarica* (L.) C.A. Meyer is an important fodder plant but is poisonous when taken in large quantity (Kirpicznikov, 1964).

There is no comprehensive treatment of the genus *Lactuca* L. (s.l.) from Pakistan. The only treatment available is that of Hooker's Flora of British India (1881) which is more than a century and quarter old. Moreover it

does not cover entire Pakistan including two major provinces Balochistan and N.W.F.P. Since then lot of nomenclatural changes have taken place and large number of specimens have been accumulated. Therefore, it seemed desirable to conduct detailed taxonomic studies of the genus *Lactuca* L. (s.l.) from Pakistan and Kashmir.

In the present treatment broad generic concept of *Lactuca* L., is adopted and 13 species are recognized from the area under consideration.

Materials and Method

The taxonomic investigations are based on the study of several hundred herbarium specimens belonging to the following herbaria viz., BM, E, K, KUH, M and RAW (abbreviated according to Holmgren *et al.*, 1990). In few cases plants were also studied in their natural habitat. The whole range of morphological variation of each taxon was studied. Most of the names whether accepted or synonyms have been typified with the help of type specimens and original description. The concept of such taxa where the type specimens could not be studied is strictly based on original description.

The global distribution of all the taxa in Pakistan has been traced with the help of herbarium specimens and literature; only selected specimens have been cited under "Specimens Examined". A complete list of examined specimens is deposited in Karachi University Herbarium (KUH).

Lactuca: L., Sp. Pl. ed. 1. 795. 1753; Gen. Pl. ed. 5. 348. 1754.

Synonyms

Lactucella Nazarova in Biol. Zhurn. Arm. 43 (3): 181.1990.

Mulgedium Cass. Dict. Sci. Nat. 23:296.1824.

Scariola F.W. Schmidt, Samml. Phys. Okonom Aufs. 1:270.1795.

Steptorhamphus Bunge in Beitr. Fl. Russl. 205.1852.

Lectotype species: *Lactuca sativa* L.

Annual to perennial herb, less often semi-shrub. Leaves herbaceous- membranous, variable, sessile-petiolate, runcinate-pinnatifid-pinnatisect, lobes, linear-

lanceolate oblanceolate-spathulate, lyrate, entire to dentate-often spinulose, glabrous to pubescent, auriculate-semiamplexicaul. Synflorescence laxly corymbose-racemously arranged or paniced. Capitula erect, infundibuliform-cylindrical or campanulate, many flowered. Involucre phyllaries 3-5(-6) -seriate, glabrous or hairy, scarios-membranous. Florets yellow, white, blue, violet, lavender or purplish. Receptacle naked. Cypsela yellow-brown or blackish, mostly oblanceolate-obovate, oblong-ellipsoid, narrow and broad elliptic, 1-many ribbed, slightly or strongly compressed, winged or not winged, muricate-shortly papillate or pilose, beak white, greenish or pale, capillary, filiform- slender and stout;

pappus uniseriate or biseriate, white-lemon yellow, off white or lustrous, fragile or not, persistent.

A genus with c.75 species distributed in Europe, Africa, N. America and Asia (Bremer, 1994). In Pakistan, they are mostly confined to the northern areas, in the districts of Chitral, Gilgit, Astor, Swat, and Kurram Valley and Kashmir and extend to the south in the Sakesar and Salt ranges in Punjab and the central part of Pakistan, while some of the taxa are distributed in the plains and mountainous regions of Balochistan and Punjab (Stewart, 1972). The genus is represented in Pakistan and Kashmir by 13 species including one cultivated species.

Systematic treatment

Key to the species

- 1 + Pappus uniseriate 2
 - Pappus biseriate, outer setae small, forming a corona 12
- 2 + Cypsela 1-ribbed 3
 - Cypsela more than 1-ribbed 4
- 3 + Leaves apex obtuse and covered with flexuous crisped hairs beneath or at the margin. Cypsela up to 14 mm long including beak, beak without appendages at the base **6. *L. glaucifolia***
 - Leaves apex acute and not covered with flexuous crisped hairs beneath or at the margin. Cypsela up to 18 mm long including beak, beak with 2 transparent appendages at the base **1. *L. undulata***
- 4 + Middle and upper leaves decurrent. Synflorescence spicate to subracemose. Florets 4 per capitulum 5
 - Middle and upper leaves not decurrent. Synflorescence not as above. Florets (5-) many per capitulum 7
- 5 + Cypsela not beaked. Pappus not fragile **2. *L. erostrata***
 - Cypsela beaked. Pappus fragile 6
- 6 + Plant dichotomously or intricately branched. Cypsela brown, beak slender, up to 3 mm long **3. *L. orientalis***
 - Plant virgately branched. Cypsela black, beak filiform, up to 8 mm long **4. *L. viminea***
- 7 + Involucre phyllaries pale green. Cypsela brown-dark brown or blackish, beak filiform-capillary, either equalling or 1 ½- 2 times longer than the body, almost discolorous and different in texture. Pappus 3-6 mm long, lemon yellow-white and persistent **8**
 - Involucre phyllaries pale brown to pink. Cypsela sandy brown-olive or black, beak stout, smaller than the body, usually concolorous and same in texture. Pappus 10-12 mm long, off white-lustrous and fragile 11
- 8 + Stem up to 60 cm long, dichotomously branched above. Cypsela 3-ribbed, bidentate or cleft at the tip, muricate, beak 2 times longer than the body; pappus 3 mm long **5. *L. dissecta***
 - Stem up to 200 cm long, paniculate to corymbose branched above. Cypsela more than -3 ribbed, pilose, beak equalling or 1 ½ times longer than the body; pappus 4-6 mm long 9
- 9 + Cauline leaves linear-lanceolate, lower leaves sparingly ½ pinnatifidly lobed, entire. Florets blue or lavender **7. *L. dolichophylla***
 - Leaves not as above. Florets yellow **10**
- 10 + Lower leaves succulent, undivided, minutely and softly spinulose to quite smooth. Cypsela blackish. (Cultivated plants) **9. *L. sativa***
 - Lower leaves non-succulent, variously divided usually runcinate pinnatifid, prickly or spinulose along the margin and midrib beneath. Cypsela brown. (Wild plants) **8. *L. serriola***
- 11 + Annual herb. Stem 15-30 cm tall. Leaves not polymorphous, 5-9 x 0.3-1 cm, denticulate -entire. Cypsela blackish **10. *L. clarkei***
 - Perennial herb. Stem 30- 80(-100) cm tall. Leaves polymorphous, 10- 20 (-25) x 2-4 cm, sinuate- sharply toothed or cartilaginous. Cypsela sandy brown-dark olive or almost black **11. *L. tatarica***
- 12 + Florets 25-30 per capitulum. Cypsela up to 3 mm broad. Beak 3-4 mm long, smaller than the cypsela **12. *L. crambifolia***
 - Florets more than 30 per capitulum. Cypsela up to 4 mm broad. Beak 10-12 mm long, longer than the cypsela **13. *L. persica***

1. *Lactuca undulata* Ledeb., Ic. Pl. Fl. Ross. II: 12 .t. 129.1830.

Lactucella undulata (Ledeb.) Nazarova in Biol. Zhurn.Arm.43 (3):181.1990. K. Bremer, Asteraceae, Clad. Class. 184. 1994.

Type: Russia "Hab. in Sibiriae Altalcae montibus Arkaul et Dolen-Kara", *C.A. Meyer*, (LE, n.v.)

Lactuca undulata Ledeb. var. *dentata* DC., Prodr.7: 135.1838. (G-DC)

Type: Egypt: "ad radices montis Sinai loco Bestandicto", Schimper, Pl. Exs.128.

Specimens examined: Gilgit Dist.: Yasin, Gilgit, herb, up to 10 cm tall, growing in sand, 16.6.1982, *S. Omer* 197 (KUH); Baltistan Dist.: Along River Indus, Mehdiabad on way to Parkutta, c.8 cm high, 23.5.1983, *S. Omer, Nazimuddin & A. Wahid* 972 (KUH); Quetta Dist.: Sultan, Maslakh camp, 1500 m, 2.10.1975, *R.R. Stewart* 28269 (RAW); c.16 km W. of Quetta, stony area on saline plain, c.1700 m, 9.5.1965, *Jennifer Lamond* 1078 (E); Quetta valley, c.1500 m, 22.5.1968, *Zaffar Ali* 4783 (KUH, RAW); Karkhasa valley, Quetta, florets yellow, 3.5.1997, *Rubina Rafiq & Sikander Hayat* HG-97-119 (RAW).

Distribution: Southwest and Central Asia to Western China.

Ecology: Grows in the steppes, in semi arid areas on stony slopes, strongly saline soils at the elevation between 1500-2200 m.

Flowering period: April-July (August).

Note: Nazarova (1990) transferred this species under his new genus *Lactucella* Nazarova on the basis of capillary beak of the cypsela with two transparent appendages at the base. This only character does not seem to warrant its generic status. Kilian *et al.*, (2009) also reduced *Lactucella* Nazarova to the synonymy of *Lactuca* L., on the basis of molecular evidences.

2. *Lactuca erostrata* Roohi Bano & Qaiser, sp.nov. (Fig. 1)

Holotypus: Baltistan (N.A.) Kandeh Nullah Ganche, 27-9-04 *Jan Alam and Alika* 3016 ab (KUH!)

Diagnosis: *Species nostra caule albido vel lucido, foliis ad basin conspicue decurrentibus appendicibus linearibus adnatis, foliis caulinis valde deminutis, flosculis quatuor luteis, inflorescentiis spiciformibus nec non squamis involucre interioribus obtusis Lactucae orientalis et L. vimineae persimilis sed praecipue differt cypselis parvulis ad 5 mm. longis, erostratis; hae species duae cypselis 6-14 mm. longis, distincte rostratis statim dignoscendae.*

Perennial herb. Stem 40-50cm tall, flocosse mostly at the base, branches virgate, mostly straight with decurrent leaves. Leaves sessile-shortly petiolate, pinnatifid or lobed, 4-6 x 0.3-1cm, retrorse, somewhat toothed, acute, decurrent with long, linear auricles adnate to the stem; cauline leaves small, sessile, linear, 1-2x 0.4cm. Synflorescence paniculately spiciform. Capitulum 0.5-1x 0.5cm, cylindrical, with 4 florets, subsessile-shortly pedunculate, peduncle covered with scaly bract. Involucre phyllaries 14-16, 3-4 -seriate, scarios, stereome bifurcate; outer ones, 3-4 x 2mm, ovate, subacute; middle ones 5-6 x 2-2.5mm, lanceolate, inner ones 9-11 x 2mm, linear or oblong, obtuse. Florets yellow. Cypsela 4-5 x 1.5mm long, dark brown-blackish, oblanceolate, more or less terete, not compressed, 5-7 ribbed, truncate apically, beakless, broad, almost discolorous, pappus 5-6mm long, white, not fragile.

Etymology: The name of the new species is given due to its beakless cypsela.

Affinities: The new species viz., *Lactuca erostrata* Roohi Bano & Qaiser is similar in general appearance to *L. orientalis* (Boiss.) Boiss. and *L. viminea* (L.) J. & C. Presl. and share the characters of white or glossy stem; leaf bases strongly decurrent with adnate linear appendages, auriculate and cauline leaves much reduced. Synflorescence spiciform, involucre phyllaries 3-4, scarios, inner most obtuse. Florets yellow, 4 per capitulum. However, the present taxon differs from both the species by having 5 mm long, beakless cypsela and stout pappus whereas cypsela is 6-14mm long with distinct beak and pappus is fragile in *L. orientalis* (Boiss.) Boiss. and *L. viminea* (L.) J. & C. Presl.

Specimens examined: Baltistan Dist.: Kande Nullah, Ganche, Baltistan (N.A.), perennial herb, much branched, 40-50 cm tall, florets yellow, on stream bank, c.3000 m, 27.9.2004, *Jan Alam & Alika* 3016 a, b (KUH); Eidgah, Astor (N.A.) along road, perennial herb, up to 50 cm tall, florets yellow, on dry slope, c. 2300 m, 26.8.2008, *Ali Noor* 1726 (KUH); ibid, ascending perennial herb, florets yellow, on dry slope, c. 2300 m, 26.8.2008, *Ali Noor* 1733 (KUH).

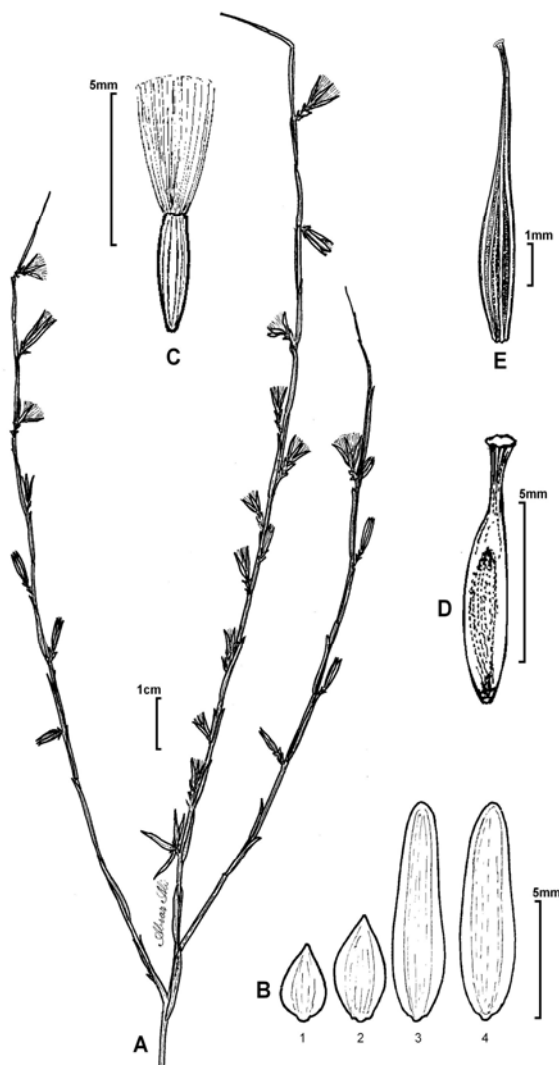


Fig. 1. *Lactuca erostrata* Roohi Bano & Qaiser: A, habit; B(1-4), involucre phyllaries (outer to inner); C, cypsela. *Lactuca orientalis* Boiss.: D, cypsela. *Lactuca viminea* (L.) J. & C. Presl.: E, cypsela.

Distribution: Pakistan - endemic to Baltistan (Fig. 2)

Ecology: Grows on dry slopes and on stream banks at the elevation between 2300 -3000m.

Flowering period: August-September.

3. *Lactuca orientalis* (Boiss.) Boiss., Fl. Or. 3: 819.1875
Phaenopus orientalis Boiss. Voy. Bot. Med. Esp. 2: 390.1839 (in note).

Two subspecies occur in our area.

i. Subsp. *orientalis*

Scariola orientalis (Boiss.) Soják in Novit, Bot. Horti. Bot. Univ. Car. Prag. 46. 1962; Rech. f., Fl. Iran. Comp. 2. 122: 202. f. 19 & 20. 1977.

Lectotype: Persia: Kuh Däena, *Kotschy* 702, (G, Iso-W).

Selected examined: Chitral Dist.: Chumarkan, Mastooj-Chitral, perennial herb, 13" in height, florets yellow,

infrequent, on undulating rocky slope, 1927 m (36° 12' 01.8", 72° 08' 40.9"), 19.7.2005, *Haidar Ali* 2084 (KUH); Sarigulbek, Torikhoo-Chitral, perennial herb, 8" in height, florets yellow, common, on rocky slope, 2979 m, 16.8.2006, *Haidar Ali* 5077 (KUH); Quetta Dist.: Hanna lake, Quetta, a common wild plant, 13.8.1939, *Mohindar Nath* 2396 (RAW); Northern Baluchistan, 1955, *A.H. Savage Lander* s.n. (BM); Quetta, 7.7.1980, *Farrukh & Dasti* s.n. (RAW); Spin Karez, 18.7.1957, *E. Nasir* s.n. (RAW); Baluchistan, 12.2.1962, *R.R. Stewart* 558 (RAW); About 40 miles from Quetta on way to Ziarat, erect herb, 20-25 cm tall, florets yellow, common on stony ground, 11.9.1970, *S.A. Farooqi & M. Qaiser* 2359 (KUH); c.100 km from Quetta on Zhob-Quetta Road, erect, ± 20 cm, florets yellow, 7.7.1988, *T. Ali & Tufail Ahmed* 1245 (KUH); Zharg and Shela area, 13.5.1987, *Atiya Azim* 18 (RAW).

Distribution: Syria, Lebanon, Armenia, Turkey, Iran, Central Asia, Afghanistan, Pakistan, India and Tibet.

Key to the subspecies

- 1 + Plants thorny. Stem divaricately much branched, spinescent with short and rigid branches. Lower leaves not well developed i. subsp. *orientalis*
- Plants not thorny. Stem neither divaricately branched nor spinescent. Lower leaves well developed ii. subsp. *nuristanica*

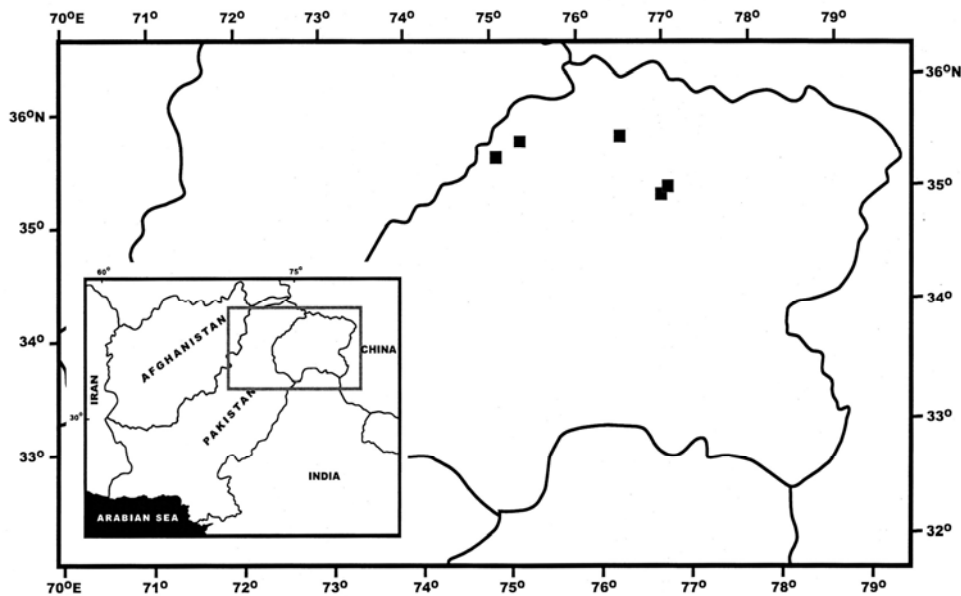


Fig. 2. Distribution pattern of *Lactuca erostrata* (■).

Ecology: A common desert shrub of dry, arid, stony and gravelly places, slopes and in dry ravines, on clayey and loamy soil at the elevation of 1650-3000 m.

Flowering period: June-October.

ii. *Lactuca orientalis* (Boiss.) Boiss. subsp. *nuristanica* (Podlech) Roohi Bano & M. Qaiser **comb. nov.**
Scariola orientalis (Boiss.) Soják subsp. *nuristanica* Podlech in Rech. f., Fl. Iran. Comp. 2. 122: 204. t. 140.1977.

Type: Afghanistan: "Nuristan: Darrah-i Pengar 4 km infra Samanaknesha, 3000 m", 4 Sept 1969, *Podlech* 16580 (M, Iso-W).

Lactuca nuristanica Kitam., in Acta Phytotax. Geobot. 17: 35 f. 100. 1957; Fl Afgh. 427. f. 100.1960.

Holotype: Afghanistan: Nuristan: Chatrass, 2.8.1955, *Kitamura* s.n. (KYO).

Specimens examined: Chitral Dist.: Shogar, 1900 m, 16.10.1954, *F. Schmid* 2404 (RAW); Kaglisht, Booni-Chitral, perennial herb, 9" tall, florets yellow, on undulating slopes, infrequent, 2920 m, (36° 20' 15.7", 72° 06' 19.1"), 6.8.2005, *Haidar Ali* 2417 (KUH); Gilgit Dist.: Bursar Nullah above Gilgit, 4.8.1954, *R.R. Stewart* s.n. (RAW); Naltar valley, 28.8.1986, *A. Rashid* 1103 (KUH); Between Gupis and Phander, growing between rocks, ± 2400 m, 20.7.1990, *M. Qaiser, S. Omer & S.Z. Hussain* 8404 (KUH); Birmoghlast, 2100-2400 m, 2.8.1954, *M.A. Siddiqui & A. Rehman* 26822 (RAW); Meran forest, 1480 m, 1.7.1977, *Hakim Khan* s.n. (RAW); Swat Dist.: 11 miles from Saidu Sharif on way to Kalam, 20 cm tall, florets pale yellow, on sandy clay soil, 27.7.1971, *S. Abedin* 8270 (KUH); Rupal nullah to Gurikot, Astor, 2400-2550 m, 23.8.1939, *R.R. Stewart* 18909 (RAW); Baltistan: Skardu, ± 2400 m, 20.8.1966, *M.A. Siddiqui, Y. Nasir & Zaffar* 4180 (BM); Shigar, Baltistan, 2400 m, 15.8.1875, *C. B. Clarke* 30480 B (BM); Kero Lugma Glacier, Left bank, hill side, 3000-3300 m, 26.7.1939, *R. Scott Russell* 1331 (BM); Satpara lake side, ± 2100 m, 3.10.1996, *Qutbuddin & Hidayat Noor* 220 (RAW); Sanjala-Karamkot, 12 miles from Wana, S.Waziristan, erect herb, c. 25 cm tall, buds present, 17.5.1978, *S. Nazimuddin & S. Abedin* 945 (KUH); Kurram Dist.: Kurram, *M.A.H. Afridi* 301 (M); Gamrud-Warsak Road, in Capparis bush on earth Cliff of dry nullah, shrubby base, florets yellow, 4 in head, ligule broad, 24.5.1958, *B.L. Burt* 694 (E); Quetta Dist.: Kila Saifullah, 24.6.1956, *W.A. Dick Peddie* 35 (K, RAW); Hazargangi forest, Quetta, 16.7.1986, *Qutbuddin* 1 (RAW); c.5.1 km from Khuzdar city on way to Kalat, near Baluchistan Residential College, prostrate herb, florets yellow, ± 1000 m, soil gravel-sandy loam, 27.5.1995, *T. Ali & G.R. Sarwar* 2524 (KUH);

Distribution: Afghanistan and Pakistan.

Ecology: Grows between 1000-3500 m on rocks, mountains crevices, cliffs, on sandy clayey soil, on wet places and along stream banks.

Flowering period: May- October

NOTE: Podlech's *Scariola orientalis* (Boiss.) Sojak subsp. *nuristanica* Podlech, is based on a different type not on *Lactuca nuristanica* Kitam.

4. *Lactuca viminea* (L.) J. & C. Presl., Fl. Cechica. 160. 1819.

Prenanthes viminea L., Sp. Pl. ed. 2. 797. 1753; *Scariola viminea* (L.) F.W. Schmidt, Samm. Phys. Okonom. Aufs.1: 270. 1795.

Lectotype: "Habitat in Gallia, (France) Lusitania." RCN: 5829.

(Selected by van Raamsdonk in Wisskirchen in *Feddes Repert.*, 108: 105.1997) Herb.A. Van Royen No.999.344-290 (L.) vide Jarvis, Ord. Chaos. 769. 2007.

Specimens examined: Dir Dist.: 4 km from Chakdara on way to Dir, common near graveyard, hanging perennial, c.10 cm tall, florets yellow, 8.10.1988, *A. Ghaffoor & T.*

Ali 4095 (KUH); Skardu Dist.: Skardu (forest nursery), florets yellow, ± 2490 m, 16.9.1981, *Y. Nasir* 9757 (RAW); Kohat Dist.: Sangaur Bagal, Samana Hills near Hangu, 7.8.1971, *S.M.A. Kazmi & M. Saleem* 3311 (M), Kurram Dist.: Parachinar, Kurram Valley, black cypsela, 1800 m, 25.7.1958, *R.R. Stewart* 28043 (BM, RAW); Peshawar Dist.: Between Pabbi and Cherat, florets pale yellow, 4-florets, milky latex, 26.10.1958, *B.L. Burt* 1529 (E); Quetta Dist.: Kolpur (Baluchistan), 20.9.1953, *M. Hanif* 9 (RAW); Kodali, 8.6.1962, *R.R. Stewart* 721 (RAW); c.16 miles from Naushki on way to Quetta, herb on sandy plains, c.20 cm, florets yellow, 30.8.1969, *M. Qaiser* 77 (KUH); Muslim Bagh near Quetta, erect herb, 20-25 cm with buds and fruits, 7.7.1998, *T. Ali & Tufail Ahmed* 1204 (KUH); Urak, 17.7.1957, *E. Nasir* 28470 (RAW); Loralai, common, wild, florets yellow, 21.7.1939, *Mohindar Nath* 2022 (KUH); Kalat Dist.: Dasht Baddo, Kalat, 22.6.1962, *R.R. Stewart* 758 (RAW).

Distribution: Europe, Mediterranean region, Armenia, Kurdistan, Iran, Iraq, Afghanistan, Pakistan and Australia.

Ecology: On rocky slopes, stony and gravel areas, roadsides, field margins, at the elevation between 800-2700 m.

Flowering period: June-October

5. *Lactuca dissecta* D. Don, Prodr., Fl. Nepal. 164. 1825

Type: Described from Nepal, *Wallich* (K!). *Chondrilla auriculata* Wall., Numer. List .3269.1829. nom.nud.

Lactuca auriculata DC., Prodr. 7:140. 1838.

Type: Nepal, *Wallich* 379 (K-W!) Microfiche, IDC.No.316-360.3269.

Lactuca arvensis Edgew., in Trans. Linn. Soc. 20: 79. 1846.

Type: India: "Himalaya, Simla, 3000-7000 ft" ? (K).

Lactuca stocksii Boiss., Diag. Pl. Or. Nov. Ser. 2 (3): 96. 1851.

Syntypes: Iran/Pakistan: "Hab. In province Balochistan", *Stocks*, Exs. Pl. 809, 830 (G-BOIS).

Specimens examined: Chitral Dist.: Shunkur, 28.7.1954, *M.A. Siddiqui & A. Rehman* s.n. (RAW); Chitral Village, 1500 m, florets mauve, 13.4.1958, *J.D.A. Stainton* 2202 (BM); Arkari Gol W. of Bombrait, Chitral, ± 1400 m, 11/12. 7. 1968, *Y. Nasir* 5019 (E, RAW); Gilgit Dist.: Nagar, (74° 43' E-L. 36° 16' N.), 2500 m, 1959, *F. Lobbichler* 475 (M); Nagar Village area, irrigation channel banks, cultivated area, 21-2400 m, 28.8.1960, *O. Polunin* 6419 (BM, E); Minabin, Nagar, cornfield weed, irrigation and cultivated area, florets yellow, 1900 m, 17. 7. 1960, *O. Polunin* 6065 (BM, E); Kalam, (35° 30' N, 72° 30' E), c.2200 m, 1967, *G. Tuisl* 19429 (M); Abbotabad to Manglaur, c.3300 m, 14.4.1958, *R.R. Stewart* s.n. (RAW); Kagan valley Balakot (approx. 34° 35' N., 73° 20' E.) and Babusar pass (approx. 35° 10' N., 74° 2' E.), Jul-Sept 1954, *John Abel* 105 (BM); 2400 m, Astor Dist.: Rama valley,

S.W of Astor, erect annual herb, 6", florets 10-15 mm, with white disc and pale purple ray florets, 3150 m, 28.7.1967, *T.E. Lankester & T.A.S. Pearson* 1243 (BM); Skardu, common along irrigation canals, c.2200 m, florets pale lavender, 24.6.1955, *G.L. Webster & E. Nasir* 5759 (M, RAW); Tasugma Chu, Baltistan, on rocky hill slopes, 1800 m, florets lavender, 1928, *F. Ludlow* 264 (BM); Kashmir: Umli, Kashmir, 1200 m, florets white or pale blue, 3.7.1876, *C.B. Clarke* 28241 A (BM); Srinagar (Salt Course), florets mauve, 22.7.1940, *P.M. Pinfold* 243 (BM); Gandarbal Sind valley, 1650 m, florets lavender, common weed in fields, 8.6.1940, *Ludlow & Sheriff* 8124 (BM); Ramoo, 1800 m, 10.7.1876, *C. B. Clarke* 28508 A, 28503 C (BM, K); Kohat, (33° 37' N, 71° 30' E), 700-900 m, 1967, *G. Tusil* 30180 (M); Kurram Dist.: ½ miles from Parachinar on way to Shalozan, suberect herb, florets violet, 12.5.1974, *Coll. ingot* 5923 (KUH); Kallar Kahar, 6.5.1962, *R.R. Stewart* 331 (RAW); Riwat, Rawalpindi, 11.4.1965, *D. Podlech* 10132 (M); Campbellpur Dist.: Khairi Murrat, Attock, limestone hill, c.700 m, 13.4.1956, *R.R. Stewart & Nasir* 27910 (BM, RAW); Sandeman Tangi, 2 miles from Ziarat, 11.5.1965, *S.M.A. Kazmi* 1649 (M); Loralai Dist.: Loralai, 18.4.1943, *Mohindar Nath* 6103 (RAW); Sibi Dist.: Quetta, Harnai, c.8 km from west, dry river bed, c.900 m, 15.5.1965, *Jennifer Lamond* 1277 (E); Lahore Dist.: Sargodha, Kirana hill, 24.4.1930, *R.R. Stewart* s.n. (RAW); Kalat Dist.: Kalat, Inter Kolpur, 1800 m, March, (29° 52' N, 67° 20' E), 900 m, 2.4.1967, *G. Tusil* 28463 (M); Larkana Dist.: c.46 miles from Seeta Goth on way to Kutte ji Kabar, Kherther range, Larkana, Leaves prostrate, synflorescence erect, c.25 cm, 19.3.1983, *Kamal A. Malik, S. Omer & A. Wahid* 2369 (KUH).

Distribution: Turkey, Jordan, Iraq, Iran, Russia, Turcomania, Afghanistan, Pakistan, India and Tibet.

Ecology: A fairly common annual weed of hills and plains, at the elevation between 300-3300m.

Flowering period: April-September.

6. *Lactuca glaucifolia* Boiss., Fl. Or. 3: 813. 1875.

Type: Ad Ssertschah Persiae mediae orientalis "Bunge, 238 (G, Iso-LE).

Lactuca longirostrata Aitch. & Hemsl. in Aitch., Trans.Linn. Soc.Ser. (2) 3: 82.1888.

Type: Afghanistan: Hari-rud valley, 10.5.1885, *Aitchinson* 416 (K!).

Specimens examined: Quetta Dist.: Zhob valley, Hindubagh, 5850 m, 15.5.1941, *Mohindar Nath* s.n. (RAW); Between Bostan and Seran Tangi, c. 55 km from Quetta, on gravel slopes and roadside edges, 1700-1800 m, 10.5.1965, *Jennifer Lamond* 1113 (E); Spinkarez, Quetta, 11.5.1965, *S.M.A. Kazmi* 1598 (RAW); Shelabagh hills near Chaman Quetta, leaves rosulate, florets yellowish, 7.5.1985, *A. Ghafoor & Rizwan Yousuf* 1448 (KUH); Baba Khurwari, Ziarat, erect small annual herb, up to 7 cm, commonly present, grow on mountains slope, 4.5.2007, *Jan Alam & Saleem* 3706 (KUH); Makaran Dist.: Panjgur to Surab, c.70 km from Panjgur wadi, c.1100 m, 21.4.1965, *Jennifer Lamond* 638 (E); Nag,

Between Panjgur to Surab, c.1300 m, 21.6.1967, *G. Tusil* 28263 (M).

Distribution: An Irano – Turanian element, Iran, Central Asia, Afghanistan and Pakistan.

Ecology: A common species of dry mountainous range of Balochistan, ascending 1500- 2500 m on gravel slopes, sandy places and roadside edges.

Flowering period: April–June.

6. *Lactuca dolichophylla* Kitam., in Add. Correct. Fl. Afgh. 150. 1966 (Rep. ed. Results Kyoto Univ. Sc. Exped. Karak. a. Hinduk. 8. 1955).

Type: Nepal, *Wallich* (K-W!).

Chondrilla longifolia Wall.Cat. 3272 & 3273 nom.nud.

Lactuca longifolia Wall.ex DC., Prodr. 7: 135. 1838 non Mich. 1803.

Lactuca wallichiana Tuisl., Ann. Nat. Hist. Mus.Wien. 72:608. 1968.

Syntypes: In Nepali, Kamon et ad Srinagar, "Wallich, (K-W!).

Specimens examined: Chitral Dist.: Bombrat, 24.7.1956, *A.R. Beg* 1538 (RAW); Minaband, Torikhoo-Chitral, perennial herb, 1 m in height, infrequent on undulating slope, 2970 m, 16.8.2006, *Haidar Ali* 5070 (KUH); Swat Dist.: Below Utrot, Swat, 2100-2400 m, 22.7.1953, *R.R. Stewart & A. Rehman* 25156 (BM,RAW); Hazara Dist.: Naran-Kagan road, c.2400 m, 23.8.1987, *Y.Nasir, Rubina Akhtar & Hanif* 13074 (RAW); Kagan valley between Balakot (approx. 34° 35' N., 73° 20' E.) and Babusar pass (approx. 35°10' N., 74° 2' E.), July- Sep,1954, *John Abel* 106 (BM); Muzaffarabad Dist.: Leepa valley, erect herb, 1 m tall, florets light blue, 26.8.1972 *M. Qaiser & A. Ghafoor* 5012 (KUH); Astor Dist.: Rama valley, S.W of Astor, erect herb, 12"-18" tall, florets pale violet–blue, 2 cm across, 3100 m, 1.8.1967, *T.E. Lankester & T.A.S. Pearson* 1320 (BM); Kashmir, heads large, blue florets, 3 feet high, 22.7.1876, *C. B. Clarke* 29421 A (BM); Tragbol, 2550 m, 4.8.1919, *R.R. & I.D. Stewart* 4833 (RAW); Between Sharda and Kail, erect herb, c.90 cm tall, florets blue, 23.9.1987, *T. Ali, M.Qaiser & M. Ajmal* 527 (KUH); Pahlgam, Kashmir, florets lilac blue, Sep,1913, *R.M. Thackeray* s.n. (BM); Battal, Sonamarg, ± 2850 m, 31.8.1940, *R.R. Stewart* 21292 (RAW); Wangat valley, florets purple daisy, up to 3' high, 12.8.1940, *P.M. Pinfold* 257 (BM); Badwan, field borders, 12.7.1946, *R.R. & I.D. Stewart* 21604 (RAW); Balakut, Liddar valley, waste ground among cultivation, florets blue, c.1900 m, 22.8.1956, *O. Polunin* 56/425 (BM); Srinagar, Pahalgam, c.2350 m, 30.6.1978, *C.R. Lancaster* 91 (BM); Kashmir, 2700-3000 m, 24.8.1993, *J.F. Duthie* 12538 (BM).

Distribution: Afghanistan, Pakistan, Kashmir, India and Nepal.

Ecology: On rocky slopes, walls and hedges, around cultivated fields, on clayey loam at the elevation between 1200-3200 m.

Flowering period: July-August (October).

8. *Lactuca serriola* L. Centur. Pl. 2: 29. no.189. 1756; L., Amoen, Acad. 4: 328.1759.

Lectotype: "In Europe australis" Hb.Linn.No.950.3 (LINN) Photo! (Selected by Prince & Carter (1977) fide Jarvis, Ord. Chaos. 610. 2007.

Lactuca scariola L., Amoen. Acad. 4: 489. 1759; Sp. Pl. ed. 2 (2): 1119. 1763.

Lectotype: "Habitat in Europa australi." Microfiche No.: IDC 327.13! Bauhin & Cherler, Hist. Pl. Univ. 2.1003.1651. (Selected by de Varies & Jarvis (1987) vide Jarvis, Ord. Chaos. 610. 2007.

Lactuca bracteata Wall. Cat. 3243, 3244 nom.nud.

Specimens examined: Shishi, Chitral, florets pale yellow, 7500 m, 28.7.1958, S.A. *Bowes Lyon* 153 (BM); Trichkherchum high school, Molikhoo-Chitral, perennial herb, 5"-15" in height, florets light yellow, infrequent, on undulating slope, 2651 m, (36° 23' 32.5", 72° 13' 03.6"), 7.8.2005, *Haidar Ali* 2479 (KUH); Gilgit Dist.: Naltar valley, 28.8.1986, *A.Rashid* 1065 (KUH); c.49 km from Gilgit on way to Aliabad, Chashma Hotel, erect, ± 10 cm tall, florets pale yellow, ± 1620 m, 3.10.1989, *S.I. Ali, W. Sugong, T. Ali & G. Khan* 3271 (KUH); Swat Dist.: Kalam, Utror, 22.8.1962, *Nasir Siddiqui* 995 (RAW); Muzaffarabad Dist.: Leepa valley, erect herb, 1 m tall, florets yellow, 26.8.1972, *M. Qaiser & A. Ghafoor* 5001 (KUH); Astor Dist.: Peer Route village above Gurikot (N.A.), on undulating slopes under tree shade, erect, perennial herb, 60 cm tall, florets yellow, 2600 m, 25.8.2008, *Ali Noor* 1683 (KUH); Kashmir: Sao, Chamba, 1500 m, 7.10.1874, *C. B. Clarke* 23567C (BM); Kashmir, Aug 1880, *A.P. Young* 88/750 (BM); Kanpur to Baramula, Aug, 1880, *A.P. Young* 38/750 (BM); Dras, Kashmir, too much branched from base, August 1922, *R.R. & I.D. Stewart* s.n. (RAW); Shdipur, Jhelum valley, on edge of cultivated field, up to 6 ft tall, florets white or tinged pink, 1700 m, 17.7.1940, *Ludlow & Sherriff* 7809 (BM); Nara Nag Wangat Nullah, Kashmir, waste ground and edges of cultivation, 2380 m, 10.9.1956, *O. Polunin* 56/775 (BM); Parachinar, Agricultural farm, 28.8.1972, *S.M.A. Kazmi* 3727 (M); Wana Camp, South Waziristan, 1400 m, 17.7.1979, *K.B. Marwat* s.n.(RAW); Chakwal Dist.: Village Katas, between Kalar Kahar and Choa Saidan Shah, erect annual herb, c.1 m tall, florets light yellow, milky latex, common, 4.10.1988, *A. Ghafoor & T. Ali* 3888 (KUH); Quetta Dist.: Quetta, Oct, 1952, *S.M.H. Jafri* 471 (KUH); Sibi Dist.: Ziarat, Sep. 1937, *V.K. Mall* 16187 (RAW); Urak, ± ½ ft tall, florets yellow, 14.8.1959, *S.I. Ali* 1206 (KUH).

Distribution: Europe, Siberia, Mediterranean region, Turkey, Iraq, Iran, Central Asia, Afghanistan, Pakistan, India and Australia.

Ecology: Grassy slopes, on mountains, field margins, on roadsides, in cultivated fields, irrigated land, at the elevation between 1000-3600m.

Flowering period: June-September (October).

9. *Lactuca sativa* L., Sp. Pl. ed. 2. 795. 1753.

Lactuca scariola var. *sativa* (L.) Boiss., Fl. Or. 3:809. 1875.

Lectotype: Herb.Linn.No. 950.2, (LINN) Photo! (Selected by Alavi in Jafri 1983) fide Jarvis, Ord. Chaos. 610.2007.

Lactuca scariola var. *capitata* L., Sp. Pl. ed. 2. 795. 1753.

Lactuca capitata (L.) DC., Prodr. 7:138. 1838.

Lectotype: Herb.Burser VI: 6 (UPS). Selected by de Varies & Jarvis (1987) vide Jarvis, Ord. Chaos. 610.2007.

Lactuca scariola var. *crispa* L.,Sp. Pl. ed. 2. 795.1753.

Lactuca crispa (L.) DC., Prodr. 7:138. 1838.

Lectotype: Herb.Burser VI: 7 (UPS) (Selected by de Varies & Jarvis1987): vide Jarvis, Ord. Chaos. 610.2007.

Specimens examined: Quetta Dist.: P & T colony, Qaiser's residence (E-1), Quetta, erect, cultivated herb, 45-60cm tall, florets yellow, 17.10.1971, *M. Qaiser & A. Ghafoor* 4436 (KUH); Rahimyar Khan Dist.: Mianwali, 1.5.1965, *M.A. Siddiqui & Y. Nasir* 3378 (RAW); Karachi Dist.: Darsano chano, in cultivated field of mint, herb, c.70 cm tall, florets yellowish green, 19.3.1969, *S. Abedin & A. Ghafoor* 1336 (KUH); Karachi, cultivated herb, *S.M.H. Jafri* s.n. (KUH); Navy Housing Scheme, Clifton, *Roohi Bano* s.n. (KUH).

Distribution: Widely cultivated all over the world.

Ecology: Cultivated in plains as well as in the hills, in moist areas.

Flowering period: March-November.

Note: Garden lettuce is also used as a medicinal plant, fresh juice of lettuce mixed with sugar or honey, is used to cure stomatitis, sprue and anemia. Leaves of salad are taken with cucumber or carrot after meal and act as a carminative. It also prevents tuberculosis, jaundice, gall bladder stones, corneal ulcers etc. The seeds contain lignose which is an effective intestinal antiseptic (Pullaiah, 2006). Besides these damaged heads and outer leaves are used as cattle feed (Chopra *et al.*, 1956).

10. *Lactuca clarkei* Hook. f., Fl. Bri. Ind. 3:406.1881.

Type: Pakistan Iskardo (now Skardu) *C. B. Clarke* 30035 D (K!).

Specimens examined: Chitral Dist.: Owan Arkari, Lutkhoo-Chitral, annual herb, 5" in height, florets purple, on stream bank, 2814 m, (36° 16' 07.9" 71° 40' 30.8"), 29.8.2005, *Haidar Ali* 3036 (KUH); Kashmir: Abedan, Shayok river near Khapalu, heliotrophs borders of cultivation, 2400-2700 m, 24.6.1928, *F. Ludlow* 373 A (BM); Deskit nubrag Shayok, Ladak, heliotrophs field, 2700-3000 m, 5.7.1929, *F. Ludlow* 523 (BM); Baltistan Range: Iskardo, Kashmir, 2400 m, 4.8.1940, *C.B. Clarke* 30035 (BM); Satpura nullah to Skardu, 2400-2700 m, 3.8.1940, *R.R. Stewart* 20343 (RAW); Skardu, Baltistan, in ponds, 2400 m, 5.8.1940, *R.R.*

Stewart 20425 (RAW); Skardu to Shigar, c.2400 m, 7.8.1940, *R.R. Stewart* s.n. (RAW); Skardu, c.15 cm in height, florets violet, 2.7.1982, *S.Omer* 359 (KUH); Sailing to Kand, c.2700 m, 2.7.1955, *E. Nasir & G.L. Webster* 5933 (RAW); Near Daghoni, Baltistan, florets blue, c.2700 m, 27.7.1955, *E. Nasir & G.L. Webster* 6300 (RAW); Karakorum Dist.: Ashkoly, Karakorum, c.3100 m, 10.8.1876, *C. B. Clarke* 30390 C (BM).

Distribution: Pakistan and India.

Ecology: On stream banks, in ponds at the elevation of 2400 – 3100 m.

Flowering period: July-August.

11. *Lactuca tatarica* (L.) C.A. Meyer, Verzeichn. Pfl. Cauc. 56. f. 26. 1831 (Fig. 3)

Sonchus tataricus L., Mant. Pl. Altera, 2:572. 1771.

Mulgedium tataricum (L.) DC., Prodr. 3:248. 1838.

Lectotype: "Habitat in Tataria, Sibiria." Hb. Linn. 949/17, photo! (Selected by Van Raamsdonk (1997) fide Jarvis, Ord. Chaos, 865. 2007.

Lactuca tatarica (L.) C.A. Meyer var. *tibetica* Hook.f., Fl. Brit. Ind. 3: 406.1881.

Syntypes: China: "Western Tibet; Nubra, Hanli, 12000-16000 ft.", Thomson, (K!); *Stoliczka*, (K!).

Specimens examined: Chitral Dist.: Laspur (Phargam), Chitral, ± 3000 m, (36°5' N. 72°16' E.), edge of cornfield, florets pale blue, 15.7.1958, *S.A. Bowes Lyon* 33 (BM); Chunch Lal, Mastooj- Chitral, biennial herb, 14" in height, florets light purple, rare, 3800 m, (36° 07' 32.9" 71° 29' 38.9"), 8.7.2005, *Haidar Ali* 1846 (KUH); Gilgit Dist.: Manu Gam Nala, Gilgit, 1800-2400 m, in moderately damp soil along irrigation canal, 1.9.1950, *J.W. Thornley* 40 (BM); Gilgit, c. 1500 m, florets blue, 28.7.1954, *R.R. Stewart* 26361 (BM, RAW); c.4 km from Sost on way to Khunjerab Pass (top), erect herb, 30-40 cm tall, florets violet, 3300 m, 5.10.1989, *S.I. Ali, W. Sugang, T. Ali & G. Khan* 3328 (KUH); Atabad, Hunza Valley, 1800-2100 m, 12.10. 1997, *Capt. H.H.P. Deasy* 5 (BM); Hoper, Nagar, perennial herb, up to 10", florets purple, in dry or arid soil, 11.7.2005, *Sajjad Haider* 222 (KUH); Baltistan: Skardu to Shigar, 2400 m, 7.8.1940, *R.R. Stewart* 20501 A (RAW); Thalle La above Shigar, ± 2700 m, 13.8.1940, *R.R. Stewart* 20581 (RAW); Nagar Village, Karakorum, 2100-2400m, on stony dryer ground, irrigated and cultivated area, florets blue, 28.8.1960, *O. Polunin* 6398 (BM, E). Karakorum: Baltistan, (N-Pakistan), (Schweiz-Expendition zum Biafo Gletscher-1962, 3080 m, 6.8.1962, *Hans Hartmann* 1403 (RAW); Above Askule, Baltistan, in dry gravel place, erect perennial herb, florets light purple, 25.7.2003, *Jan Alam & Mehboob Ali* 2035 (KUH); Takshai, upper Nubra, Ladak, c.3300 m, 17.7.1947, *R.C.F. Schaumburg* 3 (BM); Zanskar Valley, N. W. of Padam, 3ft in height, florets blue, on stony slopes, c.3800 m, 8.8.1981, *J.D.A. Stainton* 8415 (BM);

Kashmir, entire Gilgit et Imit. Vallee, Semi-desertique, 1620-2580 m, 28.7.1954, *F. Schmid* 2036 (RAW).

Distribution: Europe, Caucasus, Siberia, Afghanistan, Pakistan, India, China, Tibet, and Mongolia.

Ecology: On clayey soil and sandy slopes, in moderately damp soil along irrigation channel, stream banks, in fields of different cultivated crops at the elevation of 2800-5000m.

Flowering period: July-August.

A highly polymorphic species presenting much variation in the size, shape of leaves and colour of phyllaries, which varies from pale brown-pink. The colour of ray florets also varies from blue to purple. However, the variation seems to be continuous.

12. *Lactuca crambifolia* (Bunge) Boiss., Fl. Or. 3: 806. 1875.

Stectorhamphus crambifolia Bunge, Beitr. Fl. Russl. 205.1852.

Cicerbita crambifolia (Bunge) Beauv., Bull. Soc. Bot. Geneve, II. Ser 2: 143. 1910.

Type: Hab in den Felsspalten des Tiumen-bai-tau" *Lehmann* (LE).

Lactuca edelbergii Rech.f., in Biol. Skr. 2: 205. f. 145. 1955.

Syntypes: Afghanistan: Nuristan: Vama, 1400 m, 4.5.1948, *Edelberg* 523,524. (W, C).

Specimens examined: Chitral Dist.: Arando, S.W. Drosh, 3' in height, florets yellow, on shady rock ledges, 1200m, 25.4.1958, *J.D.A. Stainton* 2296 (BM, RAW); Village Shagram, Minko Gol, c.5 km North of Garam Chashma, erect herb, 35-40 cm tall, florets yellow, leaves basal large, latex white, common on dry sandy hill slopes, 19.6.1987, *A. Ghafoor & S. Omer* 2677 (KUH); Chitral, 2100m, 3.6.1995, *Surg.Lt. Harris I.M.S.* 16300 (BM); Bakamak hill, Chitral, perennial herb, 18" tall, florets yellow, on rocky slopes (N 35 49' 09.6", E 71 45' 04.4"), 2114m, 28.5.2005, *Haidar Ali* 161 (KUH); Gilgit Dist.: Lower Naltar, erect perennial herb, rosette leaves, dark brown cypsela, ± 2600m, 28.6.2003, *Jan Alam & Karim Madad* 1898 (KUH); Yoshah (Khaltaraw), perennial herb 40-50 cm tall, on dry sandy and stony area, florets yellow, white latex, July 2001, *Sherwali Khan & Shabbir Hussain* 97 (KUH); Baltistan: Satpura lake, 3000m, 25.6.1955, *E. Nasir & G.L. Webster* 5835 (RAW); Skardu, erect, branched, perennial herb, infrequent species for Baltistan florets yellow, c.2500 m, 2.7.2003, *Jan Alam & Mehboob Ali* 2004 (KUH).

Distribution: Central Asia Afghanistan, Pakistan

Ecology: Grows on stony and gravel slopes at 1200-3000m.

Flowering period: April-July.

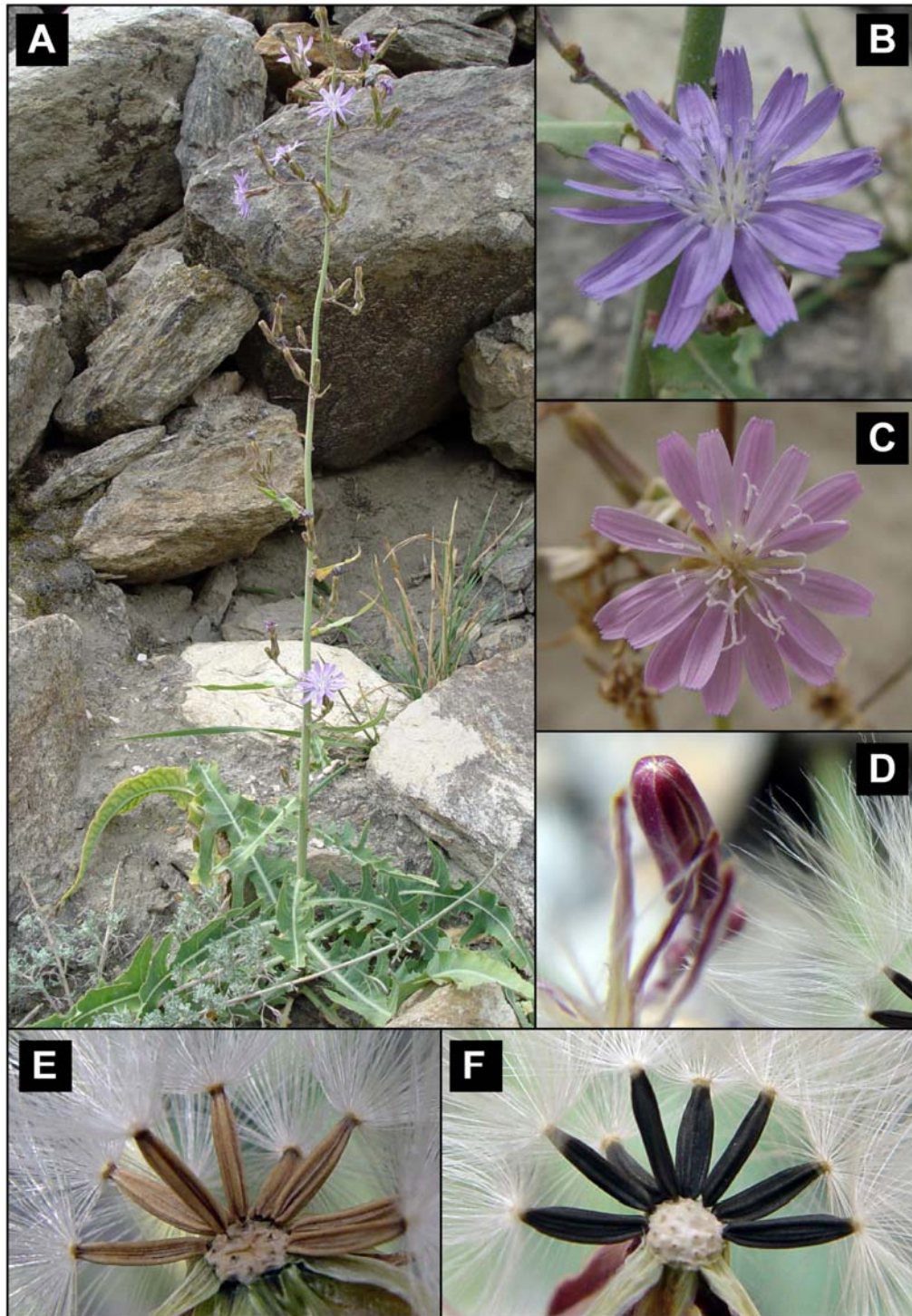


Fig. 3. *Lactuca tatarica* (L.) C.A. Meyer: A, habit; B,C, capitulum; D, involucre bracts; E, F, receptacle and cypselas.

13. *Lactuca persica* Boiss., *Diagn. Pl. Or. Nov. Ser.1*, 7: 9.1846; in *Fl. Or.3*: 806.1875.

Cicerbita persica (Boiss.) Beauv. *Bull. Soc. Bot. Gen. II. Ser. 2*: 142. 1910.

Steptorhamphus persica (Boiss.) O. & B. Fedtsch. *Consp. Fl. Turk.* 4: 319.1911.

Type: Iran: "Hab. in Persiâ australi in rupestribus montis Kuh-Ajub prop [sic] Persepolim", *Kotschy* 409 (Holo G-BOIS, Iso – LE, W)

Specimens examined: Quetta Dist.: Urak, 16.6.1962, *R.R. Stewart* 872 (RAW); Hanna lake, 4-5-1963, *M.A. Siddiqui* 1757, 1759 (RAW), 10 miles from Mustung on way to Quetta, c.45 cm, erect herb, florets whitish, 11.5.1978, *S. Nazimuddin and S.Abedin* 629 (KUH); Kudali Spring, Maslakh, Quetta, c.40 cm, florets yellow, 14.5.1978, *S. Nazimuddin, Hameedullah & S. Abedin* 804 (KUH); Wali Tangi, Quetta, 40-50 cm, erect herb, florets yellow, latex present, 22.5.1984, *S. Omer & A.Ghafoor*

1773, 1798 (KUH); Hanna lake, herb, c.50 cm, florets yellow, 5.5.1984, *S.Omer* 1281 (KUH); Karkhasa, Chiltan hills, Quetta, florets, yellow, 23.4.1987, *Rubina Akhter* 12608 (RAW); Kalat to Quetta, Takpass, 30km from Quetta, florets golden yellow, on steep rocky slopes, crack in rock, c.2100 m, 22.4.1965, *Jennifer Lamond* 703 (E); Ziarat, c.2400m, 28.5.1968, *Zafar Ali* 4814 (RAW), Kalat Dist.: Harboi hills: Jurgi Pass, c. 41 km from Kalat on way to Nichar, Calcareous hills; erect perennial herb, florets yellow, 12.05.1990, *A.Ghafoor & Steve M. Goodman* 5155 (KUH).

Distribution: An Irano-Turanian element, distributed in Central Asia, Iran, Afghanistan and Pakistan.

Ecology: Grows among rock crevices, stony and calcareous hills between 1000-2500m.

Flowering period: April-July.

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References

- Ambasta, S.P., K. Ramachandra, K. Kashyapa & R. Chand. 1986. *The Useful Plants of India*. C.S.I.R. New Delhi.
- Bentham, G. 1873. *Compositae*. In: *Genera Plantarum*. (Eds.): G. Bentham & J. D. Hooker. Vol.2 (1): 163-533. Reeve & Co. London.
- Boissier, P.E. 1875. *Flora Orientalis*. Vol. 3. Basileae, Geneva & Lugduni.
- Bremer, K. 1994. *Asteraceae, Cladistics & Classification*. Timber Press. Portland, Oregon. pp. 752.
- Bunge, M. 1852. In: *Flora Russlands und der Steppen Central Asiens*. Beitrag zur Kenntnissder. Reliq. Bot. 205. St. Petersburg.
- Cassini, H. 1824. *Dictionnaire Des Sciences Naturelles*, 33: 296, 39: 391. *Cassini on Compositae*, II. Oriole editions, New York.
- Chaudhary, S.A. 2000. *Flora of the Kingdom of Saudi Arabia*, 2(3): 118, 244 -246. National Agriculture and Water Research Center, Riyadh.
- Chopra, R.N., S.L. Nayar and I.C. Chopra. 1956. *Glossary of Indian Medicinal Plants*. C. S. I. R. New Delhi.
- Clarke, C.B. 1876. *Compositae Indicae*, pp. 259-273. Thacker, Spink and Company, Calcutta.
- De Candolle, A.P. 1836. *Prodomous systematics*, Vol.7. Naturalis regni vegetabilis, Paris.
- Feráková, V. and P.D. Sell. 1976. In: *Flora Europaea*. (Eds.): T.G. Tutin, V.H. Heywood, N.A. Burges, D.M. Moore, D.H. Valentine, S.M. Walters and D.A. Webb. Vol. 4. Cambridge University Press, Cambridge.
- Grierson, A.J.C. and L.S. Springate. 2001. *Compositae*, In: *Flora Bhutan*. (Eds.): A.J.C. Grierson and D.G. Long. Vol.2, part 3. Royal Botanic Gardens, Edinburgh.
- Holmgren, P.K., N.H. Holmgren and L.C. Barnell. 1990. *Index Herbariorum*. Part I: The Herbaria of the World. 8th edition. Regnum Veg. New York.
- Hooker, J.D. 1881. *The Flora of British India*, Vol. 3: 402-413. London.
- Jarvis, C. 2007. *Order out of Chaos. Linnaean Plant Names and their Types*. Linnaean Society and Natural History Museum, London.
- Jeffrey, C. 1975. In: *Flora of Turkey & East Aegean Isles*. (Ed.): P.H. Davis. 5: 764-783. University Press. Edinburgh.
- Kilian, N., B. Gemeinholzer & H.W. Lack. 2009. In: *Systematics, Evolution and Biogeography of Compositae*. (Eds.): V.A. Funk, A. Susanna, T.F. Stussey and R.J. Bayer, Cichorieae 344-383. Vienna.
- Kirpicznikov, M.E. 1964. In: *Flora of the USSR*. (Eds.): E.G. Bobrov & N.N. Tzevlev. *Compositae*, Vol. 29: 7-9, 255-355. Leningrad.
- Kitamura, S. 1960. *Flora of Afghanistan*. Results of the Kyoto University Scientific Expedition to the Karakorum and Hindukush. 1955, Vol. II. Kyoto, Japan.
- Kitamura, S. 1964. *Plants of West Pakistan and Afghanistan*. The committee of the Kyoto University Scientific Expedition to the Karakorum and Hindukush. Kyoto, Japan.
- Lack, H. 2007. In: *The Families and Genera of Vascular Plants*. (Eds.): J.W.K. and C. Jeffrey. Edited by K. Kubitzki, Vol. 8. pp.1-636.
- Linnaeus, C. 1753. *Species Plantarum* (1st ed.) pp. 795-796. The Ray Society, London.
- Linnaeus, C. 1754. *Genera Plantarum* (5th Ed.), pp. 815-816. New York.
- Mabberley, D.J. 2008. *Mabberley's Plant-Book*. A portable dictionary of plants their classification and uses. 3rd Edition. Cambridge University Press, Cambridge. New York.
- Mamgain, S.K. and R.R. Rao. 1995. In: *Flora of India*. (Eds.): P.K. Hajra, R.R. Rao, D.K. Singh & B.P. Uniyal, Asteraceae (Cichorieae), 12: 267-303, 312- 316. Botanical Survey of India, Calcutta.
- Nazarova, E.A. 1990. *Takhtajianantha* Nazarova and *Lactucella* Nazarova: Two new genera of the tribe Lactuceae (family Asteraceae). *Biol. Zhurn. Armen.*, 43 (3): 179-183.
- Pullaiyah, T. 2006. *Encyclopedia of World Medicinal Plants*. Vol. 3: 1204-1205. Regency Publications, New Delhi, India.
- Rechinger, K.H. 1955. In: *Det Kongelige Danske Videnskabernes Selskab Biologiske Skrifter (Symbolae Afghanistanicae)*. (Eds.): M. Koeie & K.H. Rechinger. *Compositae*, II. pp. 204-211.
- Rechinger, K.H. 1977. *Flora Iranica*, *Compositae* II- Lactuceae No.122: 1-5, 180-216. Akademische Druck-u Verlagsanstalt, Graz- Austria.
- Schmidt, F. W. 1795. *Sammlung physikalisch Ökonomischer Aufsätze zur Aufnahme der Naturkunde und deren damit ver wandten Wissenschaften in Bohmen* Prag. 1:270.
- Shih, C. 1987. On circumscription of the genus *Prenanthes* L. and *Notoseris* Shih. A new genus of *Compositae* from China. *Acta Phytotax. Sin.* 25: 189-203. (in Chinese with an English abstract)
- Shih, C. 1988. Revision of *lactuca* L. and two new genera of tribe Lactuceae (*Compositae*) on the mainland of Asia.. *Acta Phytotax. Sin.* 26: 394-417. (in Chinese with an English abstract)
- Shih, C. 1991. On circumscription of the genus *Cicerbita* Wallr. and two new genera of *Compositae* from Sino Himalayan region. *Acta Phytotax. Sin.* 29: 394-417.
- Soják, J. 1961. Bemerkungen zu einigen *Compositen*, I. *Novitates Bot. Horti. Bot. Pragensis*. pp. 33-37.
- Soják, J. 1962. Bemerkungen zu einigen *Compositen*, II. *Novitates Bot. Horti. Bot. Pragensis*. pp. 41-50.
- Stebbins, G. L. 1937. Critical notes on *Lactuca* and related genera. *J. Bot.*, 75: 12-18.
- Thulin, M. 2006. *Flora of Somalia*. Vol.3: 465-558. Royal Botanic Gardens, Kew.
- Tuisl, G. 1968. *Der Verwandtschaftskreis der Gattung Lactuca L. im iranischen Hochland und seinen Randgebieten*. Selbstverlag Naturhistorisches Museum Wien.