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), Thulini (2006), Lack (2007). Rao (1995), Chaudhary (2000), Grierson & Springate (2001), Thulini (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. andinked 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).


Synonyms


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 panicled. Capitula erect, infundibuliform-cylindrical or campanulate, many flowered. Involucre phyllaries 3-5(-6) -seriate, glabrous or hairy, scarious-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**

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<table>
<thead>
<tr>
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<tr>
<td>1+</td>
<td>Pappus uniseriate</td>
<td>2</td>
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<tr>
<td></td>
<td>- Pappus biseriate, outer setae small, forming a corona</td>
<td>12</td>
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<tr>
<td>2+</td>
<td>Cypsela 1-ribbed</td>
<td>3</td>
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<td>- Cypsela more than 1-ribbed</td>
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<tr>
<td>3+</td>
<td>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</td>
<td>6. L. glaucifolia</td>
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<td></td>
<td>- 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</td>
<td>1. L. undulata</td>
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<tr>
<td>4+</td>
<td>Middle and upper leaves decurrent. Synflorescence spicate to subracemose. Florets 4 per capitulum</td>
<td>5</td>
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<tr>
<td></td>
<td>- Middle and upper leaves not decurrent. Synflorescence not as above. Florets (5-) many per capitulum</td>
<td>7</td>
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<tr>
<td>5+</td>
<td>Cypsela not beaked. Pappus not fragile</td>
<td>2. L. erostrata</td>
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<td></td>
<td>- Cypsela beaked. Pappus fragile</td>
<td>6</td>
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<tr>
<td>6+</td>
<td>Plant dichotomously or intricately branched. Cypsela brown, beak slender, up to 3 mm long</td>
<td>3. L. orientalis</td>
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<td>- Plant virgately branched. Cypsela black, beak filiform, up to 8 mm long</td>
<td>4. L. viminea</td>
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<td>7+</td>
<td>Involucre phyllaries pale green. Cypsela brown-dark brown or blackish, beak filiform-capillary, either equaling 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</td>
<td>8</td>
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<td></td>
<td>- 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</td>
<td>11</td>
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<tr>
<td>8+</td>
<td>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</td>
<td>5. L. dissecta</td>
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<td></td>
<td>- Stem up to 200 cm long, paniculate to corymbose branched above. Cypsela more than -3 ribbed, pilose, beak equaling or 1 ½ times longer than the body; pappus 4-6 mm long</td>
<td>9</td>
</tr>
<tr>
<td>9+</td>
<td>Cauline leaves linear-lanceolate, lower leaves sparingly ½ pinnafidly lobed, entire. Florets blue or lavender</td>
<td>7. L. dolichophylla</td>
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<td></td>
<td>- Leaves not as above. Florets yellow</td>
<td>10</td>
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<tr>
<td>10+</td>
<td>Lower leaves succulent, undivided, minutely and softly spinulose to quite smooth. Cypsela blackish. (Cultivated plants)</td>
<td>9. L. sativa</td>
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<td></td>
<td>- Lower leaves non-succulent, variously divided usually runcinate pinnatifid, prickly or spinulose along the margin and midrib beneath. Cypsela brown. (Wild plants)</td>
<td>8. L. serriola</td>
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<tr>
<td>11+</td>
<td>Annual herb. Stem 15-30 cm tall. Leaves not polymorphous, 5-9 x 0.3-1 cm, denticulate -entire. Cypsela blackish</td>
<td>10. L. clarkei</td>
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<td></td>
<td>- 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</td>
<td>11. L. tatarica</td>
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<tr>
<td>12+</td>
<td>Florets 25-30 per capitulum. Cypsela up to 3 mm broad. Beak 3-4 mm long, smaller than the cypsela</td>
<td>12. L. crambifoldia</td>
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<td></td>
<td>- Florets more than 30 per capitulum. Cypsela up to 4 mm broad. Beak 10-12 mm long, longer than the cypsela</td>
<td>13. L. persica</td>
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**Type:** Russia “Hab. in Sibiriae Altalcae montibus Arkaul et Dolen-Kara”, C.A. Meyer, (LE, n.v.)

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

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, 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 conspicus decurrentibus appendicibus linearibus adnatis, foliis caulinis valde deminutis, flosculis quatuor luteis, inflorescentiis spiciformibus nec non squamis involucralibus interioribus obtusis Lactuae orientali et L. viminea 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, floccose mostly at the base, branches virgate, mostly straight with decurrent leaves. Leaves sessile-shortly petiolate, pinnafiled 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 panicularly 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, scarious, 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, scarious, 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).
**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  

Two subspecies occur in our area.

i. **Subsp. orientalis**


**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-Chitrul, 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); Chitral: Chumarkan, Mastooj-Chitral, perennial herb, 13” 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); 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**

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**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  
*Scariola orientalis* (Boiss.) Sojak subsp. nuristanica  

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

**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, Boomi-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, (KUH); 8404 (KUH); Baltistan: Skardu, ± 2400 m, 20.8.1966, R.G. Gurikot, Astor, 2400-2550 m, 23.8.1939 Baltistan, 2400 m, 15.8.1875, M. Hussain rocks, ± 2400 m, 20.7.1990, (KUH); Between Gupis and Phander, growing between rocks, ± 2400 m, 20.7.1990, (KUH); 8404 (KUH); Baltistan: Skardu, ± 2400 m, 20.8.1966, R.G. Gurikot, Astor, 2400-2550 m, 23.8.1939, R.R. Stewart 18909 (RAW); Baltistan: Skardu, ± 2400 m, 20.8.1966, M.A. Siddiqi, Y. Nasir & Zaffer 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 1313 (BM); Satpara lake side, ± 2100 m, 3.10.1996, Quetta, ± 2100 m, 3.10.1996, Hakim Khan s.n. (RAW); Swat Dist.: 11miles 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. Siddiqi, Y. Nasir & Zaffer 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 1313 (BM); Satpara lake side, ± 2100 m, 3.10.1996, Quatbuddin & Hitdayat Noor 220 (RAW); Sanjala-Karamkot, 12 miles from Wana, S.Waziristan, erect herb, c. 25 cm tall, buds present, 17.5.1978, S. Nazimuuddin & S. Abedn 945 (KUH); Kurram Dist.: Kurram, M.A.H. Afridi 301 (M); Garamrud-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. Burtt 694 (E); Quetta Dist.: Kila Saifullah, 24.6.1956, W.A. Dick Peddie 35 (K, RAW); Hazargangi forest, Quetta, 16.7.1986, Quatbuddin 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: Podleck’s Scariola orientalis (Boiss.) Sojak subsp. muristanica Podleck, is based on a different type not on Lactuca muristanica Kitam.


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. Ghafoor & 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 cypselas, 1800 m, 25.7.1958, R.R. Stewart 28043 (BM, RAW); Peshawar Dist.: Between Pabbi and Cheraf, florets pale yellow, 4-florets, milky latex, 26.10.1958, B.L. Burtt 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, Mohinda Nuth 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, road sides, 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.


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


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. Rehan 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. Lobichler 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.Tuif 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); Tasumga Chu, Baltistan, on rocky hill slopes, 1800 m, florets lavender, 1928, F. Ludlow 264 (BM); Kashimir: 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, M. Nasir Coll (BM, K); Kohat, (33º 37' N, 71º 30' E), 700-900 m, 1967, C. B. Clarke 28508 A, 28503 C (BM, K); Kohat, (33º 37' N, 71º 30' E), 700-900 m, 1967, G. Tatsil 30180 (M); Kurram Dist.: Sargodha, Kirana hill, 24.4.1930, Larkana Dist.: c.46 miles from Seeta Goth on way to Kutte Course, florets mauve, 22.7.1940, (RAW); Kalat Dist.: Kalat, Inter Kolpur, 1800 m, March, (39º 52' N, 67º 20' E), 900 m, 2.4.1967, (RAW); Ziarat, 11.5.1965, Jennifer Lamond & I. Rehman 527 (KUH); Pahalgam, Kashmir, florets lilac blue, 31.8.1940, 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. 34º 35' N., 73º 20' E.) and Babusar pass (approx. 35º10' N., 74º 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 50012 (KUH); Astor Dist.: Rama valley, S.W of Astor, erect herb, 12"-18" tall, florets pale violet–blue, 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. Alt, 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); Kashimir, 2700-3000 m, 24.8.1993, J.F. Duthie 12538 (BM).

**Distribution:** Afghanistan, Pakistan, Kashimir, India and Nepal.

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

**Flowering period:** July-August (October).


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

Specimens examined: Shishi, Chitrak, florets pale yellow, 7500 m, 28.7.1958, S.A. Bowes Lyon 153 (BM); Trichkherchum high school, Molikhoo-Chitrak, 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, Utro, 22.8.1962, Nasir Siddiqui 995 (RAW); Muzzaffarabad Dist.: Leepa valley, erect herb, 1 m tall, florets yellow, 26.8.1972, M. Quaiser & 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); Kandpur 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); Shidip, Jhelum valley, on edge of cultivated field, up to 8 ft tall, florets white or tinged pink, 1700 m, 17.7.1940, Ludlow & Sherriff 7809 (BM); Nar Nag Wangat Nullah, Kashmir, waste ground and edges of cultivation, 2380 m, 10.9.1956, O.P. Polunin 76/77 (BM); Parachinar, Agricultural farm, 28.8.1972, S.M.A. Kazmi 3277 (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 Saidaan 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.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).


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


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


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


Specimens examined: Quetta Dist.: P & T colony, Qaiser’s residence (E-1), Quiteta, erect, cultivated herb, 45-60cm tall, florets yellow, 17.10.1971, M. Quaiser & A. Ghafoor 4436 (KUH); Rashid 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 bladder stones, corneal ulcers etc. The seeds contain linoignose which is an effective intestinal antiseptic (Pullaiah, 2006). Besides these damaged heads and outer leaves are used as cattle feed (Chopra et al., 1956).


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

Specimens examined: Chitrak Dist.: Owan Arkari, Lutkho-Chitrak, 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 Khabalu, heliotrophi borders of cultivation, 2400-2700 m, 24.6.1928, F. Ludlow 373 A (BM); Deskit nubrag Shayok, Ladakh, heliotrophi borders, 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 pale blue, 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.: Askhole, 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)


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 S (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-Expedition zum Bialo Gletscher-1962, 3800 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 & Mehbboob 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); Kashmiir,entire Giglit 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 polymorhic 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.


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


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 2292 (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. Ghafour & 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 (Khalta raw), 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 & Mehbboob Ali 2004 (KUH).

Distribution: Central Asia Afghanistan, Pakistan.

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

Flowering period: April-July.

Type: Iran: "Hab. in Persiä australi in rupestribus montis Kuh-Ajob 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 Mustang 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); Karkhsa, Chilan hills, Quetta, florets, yellow, 23.4.1987, Rubina Akhter 12608 (RAW); Kalat to Quetta, Takpass, 30 km from Quetta, florets golden yellow, on steep rocky slopes, crack April-July.

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

**Flowering period:** April-July.

**Acknowledgement**

We are thankful to the directors/curators of BM, E, K, KUH, M and RAW for providing loan of herbarium specimens and library facilities. Indebtedness is also expressed to Prof. Dr. Kirschner (PRA) for Latin diagnosis of the new species.

**References**


*References*