

**TIBETIODES NESOM, GEN. NOV. (ASTERACEAE: ASTEREAE),
INCLUDING 27 SPECIES OF HIMALAYAN ASTER**

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ABSTRACT

Tibetiodes Nesom, **gen. nov.**, includes 27 species primarily Himalayan in geography — *T. flaccida* ranges significantly more broadly and several other species occur outside of the Tibetan plateau. Molecular sequence data indicate that 7 of these species are monophyletic and distantly related to *Aster sensu stricto* (in the sense of Li et al 2012). The addition here of other species is based on their morphological coherence in a set of features, particularly and consistently by ray florets in 2–3 series and with short tubes and elongate styles. The following constitute the genus, all as new combinations in *Tibetiodes*: *T. angustior*, *T. asteroides*, *T. bietii*, *T. brachytricha*, *T. brevis*, *T. bulleyana*, *T. diplostephioides*, *T. falconeri*, *T. farreri*, *T. flaccida*, *T. glandulosa*, *T. himalaica*, *T. jeffreyana*, *T. labrangensis*, *T. latibracteata*, *T. latisquamata*, *T. likiangensis*, *T. lipskii*, *T. nepalensis*, *T. retusa*, *T. salwinensis*, *T. setchuenensis*, *T. stracheyi*, *T. techinensis*, *T. tientschwanensis*, *T. tsarungensis*, and *T. yunnanensis*. Formal nomenclature is provided for each species and synonyms. Lectotypes are designated for *A. brachytrichus*, *A. delavayi*, *A. diplostephioides* var. *falconeri*, *A. falconeri* var. *nepalensis*, *A. farreri*, *A. flaccidus* var. *fructu-glandulosus*, *A. himalaicus*, *A. labrangensis*, *A. latibracteatus*, *A. likiangensis*, *A. mekongensis*, *A. salwinensis*, *A. stracheyi*, *A. vilmorinii*, and *A. yunnanensis*.

Molecular sequence data indicate that a group of primarily Himalayan species of *Aster* L. is monophyletic and evolutionarily distinct from even the broad range of species considered by Li et al. (2012) to constitute the genus. Six of the species were initially studied by Li et al.; *Aster salwinensis* was added to the set by Zhang et al. (2015), who updated the cladistic topology as in Figure 1. Li et al. (2012) acknowledged that this group of species "might become a new genus" and that is the course taken here. The group is part of the *Asterothamnus* branch of subtribe *Asterinae* (Nesom 2020a, 2020b).

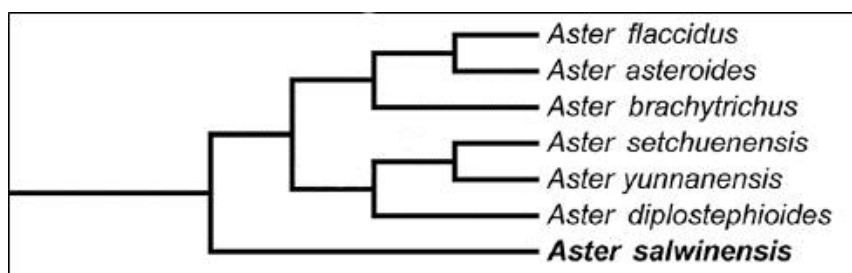


Figure 1. Relationships of seven species of *Aster* based on a combined data set (nuclear ribosomal DNA internal and external transcribed spacer sequences and plastid genome DNA trnL-F sequences). Modified from Zhang et al. (2015).

Grierson (1964) recognized the morphological coherence of these species, placing them in subsects. *Homochaeta* and *Heterochaeta* of *Aster* sect. *Alpigeni* in his classification. His observations add 6 species to those outlined above in Figure 1: *A. bietii*, *A. falconeri*, *A. himalaicus*, *A. latibracteatus*, *A. retusus*, and *A. stracheyi* (*A. tricephalus*, *A. neo-elegans*, and *A. barbellatus* of Grierson's subsect. *Heterochaeta* are not part of the group considered here). The survey here adds another 14 species.

TIBETIODES Nesom, **gen. nov.** **TYPE:** *Tibetiodes diplostephioides* (DC.) Nesom

See Nesom (2020c) for the taxonomic disposition of *Heterochaeta* DC., which might have been used as the name for this genus.

Perennial herbs from a short, thickened, fibrous-rooted rhizome (stolons in *T. stracheyi*); cauline leaves oblong to elliptic-lanceolate, ovate, or elliptic-obovate, entire or with a few, shallow teeth or mucros, epetiolate, often subclasping; heads mostly 1; phyllaries mostly evenly herbaceous, lanceolate-triangular to lanceolate-oblong, usually longer than the disc flowers; ray flowers in 2–3 series (sometimes 1), light blue-violet to violet, tube short and styles elongate, ligules narrow, coiling; disc corollas often darkening or becoming deep violet in age; achenes narrowly obovate to oblanceolate-obovate, strongly compressed, 2-nerved; pappus usually of 2 series, the inner of relatively few, thickened bristles, the outer of short scales (all of the pappus short in *T. brachytricha*).

Tibetiodes species mostly are restricted the Himalayan region (Tibetan Plateau). The ranges of *T. asteroides*, *T. diplostephioides*, and *T. labrangensis* extend to Gansu and Qinghai; *T. farreri* occurs only in central China, not reaching the Himalayas, and *T. lipskii* is restricted to Gansu and Qinghai.

Unambiguously diagnostic features of the genus are in the ray flowers, which are consistently violet and usually occur in 1 or (most commonly) 2–3 series, producing short tubes and prominently long styles. In situ photos (Figs. 2-9) show the long styles.

Most of the species have well-developed cauline leaves, but some have leaves mostly in a basal rosette, with cauline strongly reduced (*Tibetiodes asteroides*, *T. flaccida*, *T. glandulosa*, *T. jeffreyana*, *T. likiangensis*, *T. retusa*, *T. tientschwanensis*). Variation in habit and morphology in Figs. 13-26.

Phyllaries in a few species are narrow and thickened (*Tibetiodes farreri*, *T. labrangensis*, *T. salwinensis*; e.g., Fig. 12), in contrast to the broad and evenly herbaceous phyllaries characteristic of most. Variation in phyllary morphology is shown in Figs. 10-12.

A morphological subgroup includes *Tibetiodes angustior*, *T. brevis*, *T. diplostephioides*, *T. labrangensis*, *T. lipskii*, and *T. yunnanensis* — these have persistent, fibrous petiole bases (e.g., Figs. 14, 17, 18). *Tibetiodes angustior* and *T. labrangensis* (Fig. 17) consistently produce 3–5 heads per stem; *T. yunnanensis* usually is monocephalous but sometimes has 2–3 heads.

1. *Tibetiodes angustior* (Hand.-Mazz.) Nesom, **comb. et stat. nov.** *Aster yunnanensis* var. *angustior* Hand.-Mazz., Notizbl. Bot. Gart. Berlin-Dahlem. 13: 622. 1937. **TYPE: CHINA. Yunnan.** NW Yunnan, Tung-shan in der Yangtze-Schleife, 3050- 3350 m, offene, steinige Matten, Sep, 1913, *G. Forrest 11267* (holotype: E image; isotypes: BM image, K-2 sheets images).

China (Sichuan, Yunnan).

2. *Tibetiodes asteroides* (DC.) Nesom, **comb. nov.** *Heterochaeta asteroides* DC., Prodr. 5: 282. 1836. *Aster asteroides* (DC.) Kuntze, Revis. Gen. Pl. 1: 315. 1891. **TYPE: KASHMIR.** Cachemire, 1833, *M. Royle 114* (holotype: G-DC image).

Aster heterochaeta Benth. ex C.B. Clarke, Comp. Ind., 44. 1876 (nom. illeg. superfl.). *Erigeron heterochaeta* (Benth. ex C.B. Clarke) Botsch., Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R. 16: 388. 1954. *Aster heterochaeta* was a replacement name for *Heterochaeta asteroides* DC.

Aster hedinii Ostenf. in Hedin, S. Tibet 6(3): 37. 1932. **TYPE: CHINA. Xizang (Tibet).** SW Tibet, Himalayas norra fot., Från vägen mellan Lager CCIII (Dara-sumkor, 4931 m) och Lager CCIV (Buk-gyayorap, 4870 m), Mellan båda ligger passet Tugri-la, 5270 m, 16 Jul 1907, *S. Hedin s.n.* (holotype, as annotated on the sheet: S image).

China (Gansu, Qinghai, Sichuan, Xizang, Yunnan), Bhutan, India, Kashmir, Nepal.

- 3. *Tibetiodes bietii*** (Franch.) Nesom, **comb. nov.** *Aster bietii* Franch., J. Bot. (Morot) 10: 373. 1896. **TYPE: CHINA. Yunnan.** No other locality data, 3 Jun 1896, *Prince H. d'Orléans s.n.* (holotype: P image).
China (Xizang, Yunnan).
- 4. *Tibetiodes brachytricha*** (Franch.) Nesom, **comb. nov.** *Aster brachytrichus* Franch., J. Bot. (Morot) 10: 372. 1896. **LECTOTYPE** (designated here): **CHINA. Yunnan.** Montagne Hee-chan-men au dessus de Lankong, 11 Jul 1883, *R.P. Delavay 101* (P 711633; isolectotypes: A image, P 711632 image). **Protologue:** "Yun-nan, in pascuis montis Hee-chan-men supra Lankong (R.P. Delavay n. 101 et 4466); in collibus prope collum Yen-tze-hay, 3200 m (id.)."
Aster bodinieri H. Lév., Bull. Géogr. Bot. 25: 14. 1915. **LECTOTYPE** (designated here): **CHINA. Yunnan.** Plateau du Io-chan, 3400 m, Jun 1914, *E.E. Maire 706* (E 385613; isolectotype: E 385616). **Protologue:** "Yun-Nan: patures des plateaux et des pics de Ta-Hai, Io-Chan et de Tong-Tchouan."
China (Guizhou, Sichuan, Yunnan), Myanmar.
- 5. *Tibetiodes brevis*** (Hand.-Mazz.) Nesom, **comb. nov.** *Aster brevis* Hand.-Mazz., Notizbl. Bot. Gart. Berlin-Dahlem. 13: 625. 1937. **TYPE: CHINA. Yunnan.** Mountains of the Chungtien plateau, SE of Chungtien, stony alpine pasture, 13,000 ft, 15 Jul 1913, *G. Forrest 10516* (holotype: B?; isotype: E image, Fig. 18).
China (Yunnan).
- 6. *Tibetiodes bulleyana*** (Jeffrey ex Diels) Nesom, **comb. nov.** *Aster bulleyanus* Jeffrey ex Diels, Notes Roy. Bot. Gard. Edinb. 5: 184. 1912. **TYPE: CHINA. Yunnan.** Western slopes of Kari pass on descent to Shu-pa valley from Pung-tzu-la to Shi-zo, moist shady places, 13,000 ft, 15 Sep 1904, *G. Forrest 7661* (holotype: E image).
China (Yunnan).
- 7. *Tibetiodes diplostephioides*** (DC.) Nesom, **comb. nov.** *Heterochaeta diplostephioides* DC., Prodr. 5: 282. 1836. *Aster diplostephioides* (DC.) Benth. ex C.B. Clarke, Comp. Ind., 45. 1876. *Erigeron diplostephioides* (DC.) Botsch., Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R. 21: 341. 1961. **TYPE: KASHMIR.** Cachemire, 1833, *M. Royle 147* (holotype: G-DC image).
Aster delavayi Franch., J. Bot. (Morot) 10: 374. 1896. *Aster diplostephioides* var. *delavayi* (Franch.) Onno, Biblioth. Bot. 106: 69. 1932. *Erigeron delavayi* (Franch.) Botsch., Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R. 21: 341. 1961. **LECTOTYPE** (designated here): **CHINA. Yunnan.** Les prairies au col de Yen-tze-hay (Lan Kong), 3200 m, 18 Sep 1885, *J.M. Delavay 1675* (P 711648 image; isolectotypes: P 711649, 711650, 711651, 711661, 711662, and 711663, images). **Protologue:** "Yun-nan, in pratis supra collum Yen-Tze-hay, alt. 3300 m. (Delavay, n. 1675; 999); Fang-yang-tchang, in pascuis supra Mo-so-yn, alt. 3000 m.)."
Bhutan, China (Gansu, Qinghai, Sichuan, Xizang, Yunnan), India, Kashmir, Nepal, Pakistan.
- 8. *Tibetiodes falconeri*** (C.B. Clarke) Nesom, **comb. nov.** *Aster diplostephioides* var. *falconeri* C.B. Clarke, Comp. Ind., 45. 1876. *Aster falconeri* (C.B. Clarke) Hutch., Gard. Chron. 47: 398. 1910. *Aster diplostephioides* subsp. *falconeri* (C.B. Clarke) Onno, Bibl. Bot. 106: 69. 1932. *Erigeron falconeri* (C.B. Clarke) Botsch., Acta Inst. Bot. Acad. Sci., U.R.S.S. 21: 341. 1961. **LECTOTYPE** (designated here): **KASHMIR.** "Kashmir," no other collection data, *H. Falconer 561* (K 890378 image; isolectotypes: GOET, K 890379, 890380, and 890382-images, LE, M, P, S, images). **Protologue:** "An species? coll. Falconeri." Grierson (1964, p. 141) cited "holo.

K" — 890378 is the only one of the K sheets with an institutional label of "Type Specimen" but otherwise it is not distinguished from the others.

Kashmir.

9. ***Tibetiodes farreri*** (W.W. Smith & Jeffrey) Nesom, **comb. nov.** *Aster farreri* W.W. Smith & Jeffrey, Notes Roy. Bot. Gard. Edinb. 9: 78. 1916. *Aster diplostephioides* subsp. *farreri* (W.W. Smith & Jeffrey) Onno, Biblioth. Bot. 106: 69. 1932. *Erigeron farreri* (W.W. Smith & Jeffrey) Botsch., Botsch., Botsch., Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R. 21: 341. 1961. **LECTOTYPE** (designated here): **CHINA. Xizang.** Near Gansu frontier, sporadic in the higher valley fields and alps, in hay grass, 12 Aug 1914, *R. Farrer & W. Purdom 174* (E 385643 image; islectotype: E 385642 image). The protologue cited only "Farrer and Purdom. No. 174."

Aster nigrotinctus Y. Ling, Contr. Inst. Bot. Natl. Acad. Peiping 2: 461. 1934. *Aster vilmorinii* var. *nigrotinctus* (Y. Ling) Y. Ling, Contr. Inst. Bot. Natl. Acad. Peiping 2: 461. 1934. **LECTOTYPE** (designated here): **CHINA. Xizang.** Hsiaowutaishan, 2400 m, 27 Jul 1931, *T.-P. Wang 760* (PE 275522 image; islectotypes: PE 272528 and 275529 images).

China (Gansu, Hubei, Qinghai, Shanxi, Sichuan).

10. ***Tibetiodes flaccida*** (Bunge) Nesom, **comb. nov.** *Aster flaccidus* Bunge, Mém. Acad. Imp. Sci. St.-Pétersbourg Divers Savans 2: 599. 1835. *Erigeron flaccidus* (Bunge) Botsch., Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R. 16: 388. 1954. **TYPE: RUSSIA. Protologue:** "Hab. in alpinis ad Tschujam et in subalpinis Sailughem; floret Julio mense [perennial]" (Probable type material: P 711768 image, "alp. Tschujae "; possible type material: GH image).

Aster argunensis DC., Prodr. 5: 272. 1836. **TYPE: RUSSIA.** Ad fl. Argunum in Dahurie, 1820, *Razgildeev s.n.* (holotype: G-DC image).

Aster glarearum W.W. Smith & Farrer, Notes Roy. Bot. Gard. Edinb. 9: 79. 1916. **TYPE: CHINA. Gansu.** Kansu, high alpine shingles above Siku, 11,000–12,000 ft, 21 Jun 1914, *R. Farrer and W Purdom 131* (holotype: E image; isotype: E image). f

Bhutan, China (Gansu, Hebei, Qinghai, Shaanxi, Shanxi, Sichuan, Xinjiang, Xizang, Yunnan), India, Iran, Kashmir, Kazakhstan, Mongolia, Nepal, Pakistan, Russia, Uzbekistan.

11. ***Tibetiodes glandulosa*** (Keissl.) Nesom, **comb. nov.** *Aster flaccidus* var. *glandulosus* Keissl., Ann. Naturhist. Hofmus. Wien 22: 26. 1907. *Aster glandulosus* (Keissl.) Hand.-Mazz., Ost. Bot. Zeit. 79: 35. 1930 (not *Aster glandulosus* Labill. 1806). *Aster flaccidus* subsp. *glandulosus* (Keissler) Onno, Biblioth. Bot. 26(Heft 106): 66. 1932. **TYPE: CHINA. Xizang.** Tibet, Sudufer des Mangzaka, 5370 m, Umgebung von Thermen, 1907, *E. Zugmayer s.n.* (holotype: W, photo-E image).

Aster flaccidus var. *fructu-glandulosus* Ostenf. in Hedin, Southern Tibet 6(3): 36. 1922. *Aster flaccidus* subsp. *fructu-glandulosus* (Ostenf.) Onno, Bibl. Bot. 106: 65. 1932. **LECTOTYPE** (designated here): **CHINA. Xizang.** Eastern or Inner Tibet, Mandarlik, near Camp XLIV, 5127 m, 18 Aug 1901, *S. Hedin s.n.* (C image; islectotype: S [as cited by Onno 1932 and by Grierson 1964]). The lectotype comprises the 3 small plants at the bottom right of the sheet; another Hedin collection (2 plants) of the same species is above, another (1 plant) to the left. **Protologue:** "Northern Tibet, Camp XVII, at a river, 4024 m, 31 Jul 1900 (flow.); Kar-yakak-sai, Camp X, Chimen-tagh, 3984 m, 21 Jul 1900 (flow.); Mandarlik, 3437 m, medio July 1900 (flow.); some spec. very large); Eastern or Inner Tibet, near Camp XLIV, 5127 m, 18 Aug 1901 (flow.); S.W. Tibet, Camp CCXI, East of the lake Manasarovar, 4654 m, 24 Jul 1907 (flow.)."

Ostenfeld (1922) was aware of Keissler's earlier var. *glandulosus* from Tibet but noted that "As nothing is said [in Keissler's protologue] about the achenes I cannot refer it to its proper place and do not know if it is a variety of *A. flaccidus* or of *A. Hedinii* described below."

China (Xizang), India.

- 12. *Tibetiodes himalaica*** (C.B. Clarke) Nesom, **comb. nov.** *Aster himalaicus* C.B. Clarke, Comp. Ind., 42. 1876. **LECTOTYPE** (designated here): **INDIA. Sikkim.** Jongri [Dzongri], 13,000 ft, 15 Oct 1875, *C.B. Clarke 26195* (K 102216 image; isolectotype: K 102214 image). No collections were cited in the protologue. *Clarke 26195* is among sheets with a handwritten label by Clarke as *A. himalaicus*.

Aster mekongensis Onno, Bibl. Bot. 106: 54. 1932. **LECTOTYPE** (designated here): **CHINA. Yunnan.** Lichiang Range, 27° 24' N, stony alpine pasture, 14,000 ft, Sep 1913, *G. Forrest 11137* (E image; isolectotype: PE image-Fig. 25). Without designating a type, Onno cited these collections by Forrest: 11137, 14241, 17230, 18892, 20710, 21984, and 22276, all from herb. E. *Forrest 11137* (E) has Onno's annotation as "*Aster mekongensis* nova. sp." and matches his description of stems as ca. 15 cm tall. Grierson (1964), followed by Ling (1985) and Chen et al. (2011), cited "*Aster mekongensis* p.p." as a synonym of both *A. himalaicus* and *A. bietii*.

Bhutan, China (Sichuan, Xizang, Yunnan), India, Myanmar, Nepal.

- 13. *Tibetiodes jeffreyana*** (Diels) Nesom, **comb. nov.** *Aster jeffreyanus* Diels, Notes Roy. Bot. Gard. Edinb. 5: 185. 1912. **TYPE: CHINA. Yunnan.** Base of Lichiang peak, Lichiang valley, marshy hillsides, 10,000 ft, Sep 1904, *G. Forrest 669* (holotype: E image-Fig. 25; isotypes: BM image, P image).

China (Guizhou, Sichuan, Yunnan).

- 14. *Tibetiodes labrangensis*** (Hand.-Mazz.) Nesom, **comb. nov.** *Aster labrangensis* Hand.-Mazz., Notizbl. Bot. Gart. Berlin-Dahlem 13: 621. 1937. *Aster yunnanensis* var. *labrangensis* (Hand.-Mazz.) Y. Ling, Fl. Reipubl. Popularis Sin. 74: 246. 1985. **TYPE: CHINA. Xizang** (Tibet). Eastern Tibet, grasslands between Labrang and Yellow River, in meadow of Wago (Waro) valley beyond Kadja, 11,500 ft, Jul 1926, *J.F. Rock 14447* (holotype: B not seen; isotypes: E-image, GH image-Fig. 17, W not seen). Protologue: "*Rock 14447*: Herb. Berlin, Mus. Wien."

Aster kawaguchii Kitamura, Acta Phytotax. Geobot. 15: 41. 1953. **TYPE: CHINA. Xizang** (Tibet). Circa Lhasa, Mt. Cho-mo-sese, 6 Sep 1914, *E. Kawaguchi* (holotype: SM [National Science Museum, Tokyo] 96879, Fig. 4 in the protologue).

China (Gansu, Qinghai, Sichuan, Xizang)

- 15. *Tibetiodes latibracteata*** (Franch.) Nesom, **comb. nov.** *Aster latibracteatus* Franch., J. Bot. (Morot) 10: 371. 1896. **LECTOTYPE** (designated here): **CHINA. Yunnan.** Lieux frais un peu ombragés, au sommet du Tsang-chan, au dessus de Ta-li, 4000 m, 5 Aug 1884, *R.P. Delavay 1207* (P 11698 image; isolectotypes: K image, P 11697, 11698, and 11699, images). Protologue: "Yun-nan, ad cacumina montis Tsang-chan, alt. 4000 m. (R.P. Delavay, n. 1207, 2650)."

China (Yunnan), Myanmar.

- 16. *Tibetiodes latisquamata*** (C.E.C. Fischer) Nesom, **comb. nov.** *Doronicum latisquamatum* C.E.C. Fischer, Bull. Misc. Inform. Kew 1937: 98. 1937. *Aster platylepis* Y.L. Chen [nom. nov.], Kew Bull. 39: 159. 1984 (not *Aster latisquamatus* (Maxim.) Hand.-Mazz. 1938). **TYPE: INDIA. Sikkim.** Tsamgo Lake, common all around lake on rocky shale, 12,000 ft, 3 Aug 1935, *C.S. Cutting and A.S. Vernay 20* (holotype: K image, photo-E!).

Aster heliopsis Grierson, Notes Roy. Bot. Gard. Edinb. 26: 124. 1964. **TYPE: NEPAL.** Lihkoo-Shailoong, 14,000-15,000 ft, 1930, *Capt. L. Dhwoj 403* (holotype: E; isotypes: BM-2 images).

China (Xizang), India.

- 17. *Tibetiodes likiangensis*** (Franch.) Nesom, **comb. nov.** *Aster likiangensis* Franch., J. Bot. (Morot) 10: 370. 1896. **LECTOTYPE** (designated here): **CHINA. Yunnan.** Les hauts côteaux du Li Kiang Suee Chan (Li Kiang), 4000 m, 14 Aug 1886, *R.P. Delavay 2098* (P 711708 image; isolectotypes: A image, P 711706 and 711707 images).
Aster costei H. Lév., Bull. Géogr. Bot. 25: 14. 1915. *Aster likiangensis* subsp. *costei* (H. Lév.) Onno, Biblioth. Bot. 26 (Heft 106): 72. 1932. *Aster asteroides* subsp. *costei* (H. Lév.) Grierson, Notes Roy. Bot. Gard. Edinb. 26: 136. 1964. **TYPE: CHINA. Yunnan.** Pâtures du Io-Chan, 3300 m, 15 Aug 1912, *E.E. Maire s.n.* (holotype: E image).
Bhutan, China (Sichuan, Xizang, Yunnan).
- 18. *Tibetiodes lipskii*** (Komarov) Nesom, **comb. nov.** *Aster lipskii* Komarov, Bot. Mater. Gerb. Glavn. Bot. Sada R.S.F.S.R. 2: 8. 1921. Not seen. According to Chen et al. (2011), the original description was based on seeds collected from near Qinghai Hu (Qinghai Province) and cultivated at the Komarov Botanical Gardens. Treated as a good species by Ling (1985) and by Chen et al. (2011). Two collections from the region of the type locality are morphologically distinctive and have been identified as *Aster lipskii*: **Gansu.** Lapuleng, weedy slope, 3800 m (12,500 ft), 19 Jul 1937, *T.-P. Wang 7256* (PE, Fig. 14). **Qinghai.** Halihatu Mountain, Xireg, Ulan County, Chaidamu Basin, 26 Jul 1956, *Qinghai Collecting Team 642* (PE, Fig. 15).
China (Gansu, Qinghai).
- 19. *Tibetiodes nepalensis*** (Grierson) Nesom, **comb. et stat. nov.** *Aster falconeri* subsp. *nepalensis* Grierson, Notes Roy. Bot. Gard. Edinb. 26: 141. 1964. **LECTOTYPE** (designated here): **NEPAL.** Bhurchula Lekh, near Jumla, open slopes among dwarf rhododendrons, 12,500 ft, 11 Jul 1952, *O. Polunin, W.R. Sykes, and L.H.J. Williams 4554* (E image; isolectotype: BM, as cited by Grierson). Grierson did not designate a type but cited many collections from Kumaun (India) and Nepal.
India, Nepal.
- 20. *Tibetiodes retusa*** (Ludlow) Nesom, **comb. nov.** *Aster retusus* Ludlow, Bull. Brit. Mus. (Nat. Hist.), Bot. 2: 69. 1956. **TYPE: CHINA. Xizang.** SE Tibet, Kungbo, Nambu La, on rocks, 14,000 ft, 18 Jul 1947, *F. Ludlow & G. Sherriff 15467* (holotype: BM image).
China (Xizang).
- 21. *Tibetiodes salwinensis*** (Onno) Nesom, **comb. nov.** *Aster salwinensis* Onno, Biblioth. Bot. 26 (Heft 106): 74, pl. IB. 1932. **LECTOTYPE** (designated here): **CHINA. Yunnan.** No other locality data, 1917-1919, *G. Forrest 19088* (K 890445 image, Fig. 22). There are 7 other K collections by Forrest with the same minimal label data, each with a different collection number, each with a handwritten annotation by Onno in 1930 as "*Aster salwinensis* Onno nova sp."
China (Sichuan, Xizang, Yunnan), Myanmar. Phyllary morphology of *T. salwinensis* (Figs. 12A, 22) is unusual, as are the relatively broad, few ray flowers in a single series. But morphology otherwise seems characteristic of the genus and molecular data place it there.
- 22. *Tibetiodes setchuenensis*** (Franch.) Nesom, **comb. nov.** *Aster setchuenensis* Franch., J. Bot. (Morot) 10: 377. 1896. **TYPE: CHINA. Sichuan.** "Thibet Oriental, Ta-t sien-lou (Principauté de Kiala)," 1893, *J.-A. Soulié 472* (holotype: P image).
China (Sichuan).

- 23. *Tibetiodes stracheyi*** (Hook. f.) Nesom, **comb. nov.** *Aster stracheyi* Hook. f., Fl. Brit. India 3(8): 250. 1881. **LECTOTYPE** (designated here): **INDIA. Uttarakhand.** Kumaon, Pindari, 12,000 ft, 1848, *R. Strachey & J.E. Winterbottom* 2 (K 890386 image; isolectotypes: BM, K, P, images). **Protologue:** "WESTERN ALPINE HIMALAYA; Kumaon, *Wallich*; Pindari, alt. 12,000 ft., *Str. & Wint., Stewart*."
 Bhutan, China (Xizang), India, Nepal.
- 24. *Tibetiodes techinensis*** (Y. Ling) Nesom, **comb. nov.** *Aster techinensis* Y. Ling, Fl. Reipubl. Pop. Sin. 74: 359. 1985. **TYPE: CHINA. Yunnan.** Y. Atuntze, Yangtsatung, 3900 m, 24 Aug 1938, *T.T. Yü* 9828 (holotype: PE 275892 image; isotypes: A image, KUN image, PE-5 sheets images).
 China (Yunnan).
- 25. *Tibetiodes tientschwanensis*** (Hand.-Mazz.) Nesom, **comb. nov.** *Aster tientschwanensis* Hand.-Mazz., Oesterr. Bot. Zeit. 89: 58. 1940. **TYPE: CHINA. Sichuan.** Tien-chuan-hsien, 3340 m, 13 Jun 1936, *K.L. Chu* 2780 (holotype: B?; isotypes: E image, PE image).
 China (Sichuan).
- 26. *Tibetiodes tsarungensis*** (Grierson) Nesom, **comb. nov.** *Aster flaccidus* subsp. *tsarungensis* Grierson, Notes Roy. Bot. Gard. Edinburgh 26: 133. 1964. *Aster tsarungensis* (Grierson) Y. Ling, Fl. Reipubl. Popularis Sin. 74: 241. 1985. **TYPE: CHINA. Xizang** (Tibet). Doker La, 28 20'N, 3960 m Aug 1918, *G. Forrest* 16873 (holotype: E image-Fig. 19).
 China (Sichuan, Xizang, Yunnan).
- 27. *Tibetiodes yunnanensis*** (Franch.) Nesom, **comb. nov.** *Aster yunnanensis* Franch., J. Bot. (Morot) 10: 375. 1896. *Aster diplostephioides* var. *yunnanensis* (Franch.) Onno, Biblioth. Bot. 106: 69. 1932. **LECTOTYPE** (designated here): **CHINA. Yunnan.** Les bois de Fang-yang-tchang, 3000 m, 19 Jul 1887, *R.P. Delavay* 3107 (P 711811 image; isolectotypes: K image, P 711814 and 711815 images). **Protologue:** "Likiang in pratis et silvis haud procul a nivibus perpetuis, alt. 3500 m. (Delavay, n. 2099 et 2482);" in silvis ad Kan-ho, prope Fang-yang-tchang, alt. 3000 m. (id., n. 3107 et 3701; ad collum Lo-pin-chan (id.)."
Aster vilmorinii Franch., J. Bot. (Morot) 10: 373. 1896. *Erigeron vilmorinii* (Franch.) Botsch., Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk S.S.S.R. 21: 342. 1961. **LECTOTYPE** (designated here): **CHINA. Sichuan.** Ta-tsien-lou, 17 Jun 1891, *M. Pratt* 631 (P 7111807 image; isolectotype: BM image). **Protologue:** "Se-tchuen occid., in silvis prope Ta-tsien-lou (R.P. Soulié, n. 418; Pratt, n. 631; Tongolo ad limites tibetana, in quercetis et betuletis (id., n. 505)."
 China (Sichuan, Yunnan).

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Figure 2. *Tibetiodes diplostephioides*. Sichuan. Photo by Dave Boufford, 2005.

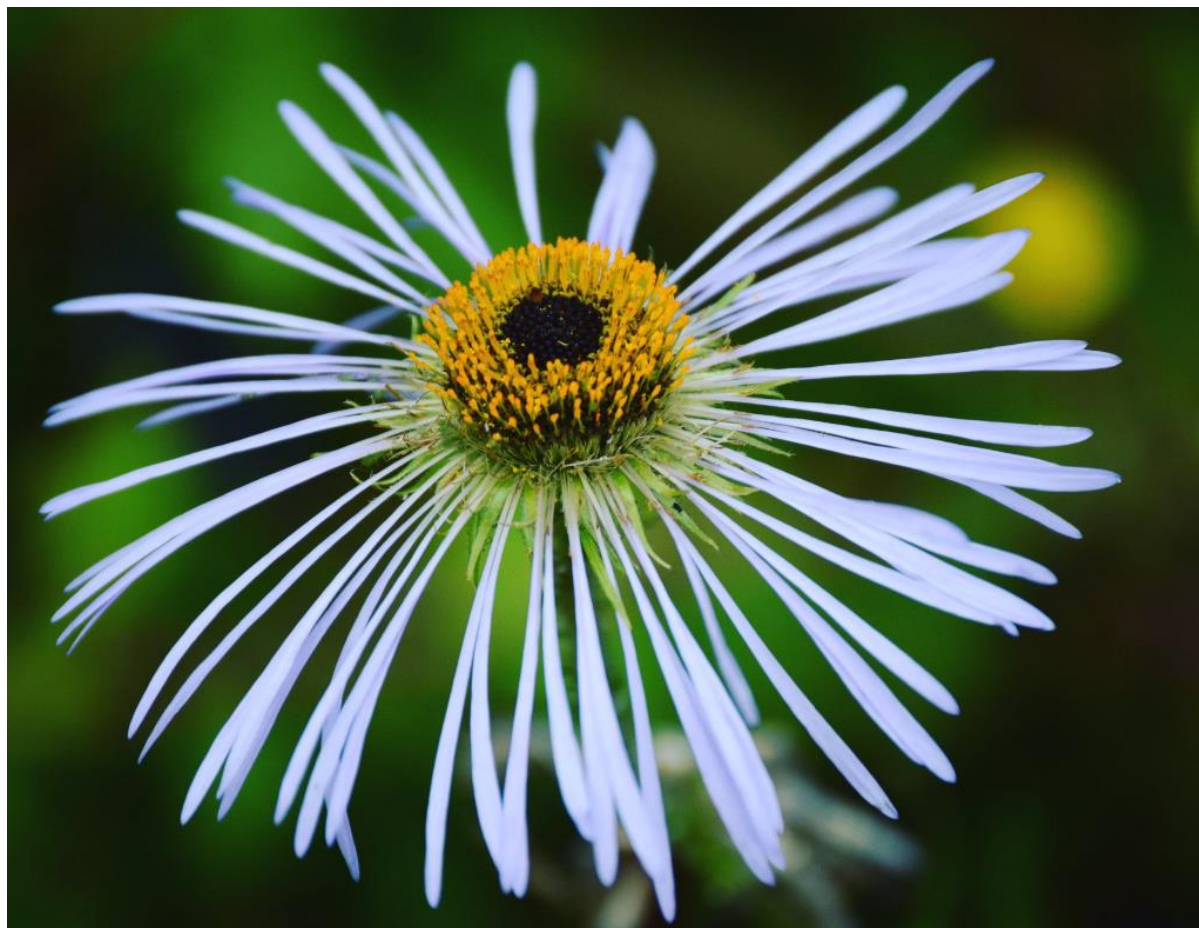


Figure 3. *Tibetiodes diplostephioides*. St. Andrews Botanic Garden. Photo by Kirsty Wilson, 2010.

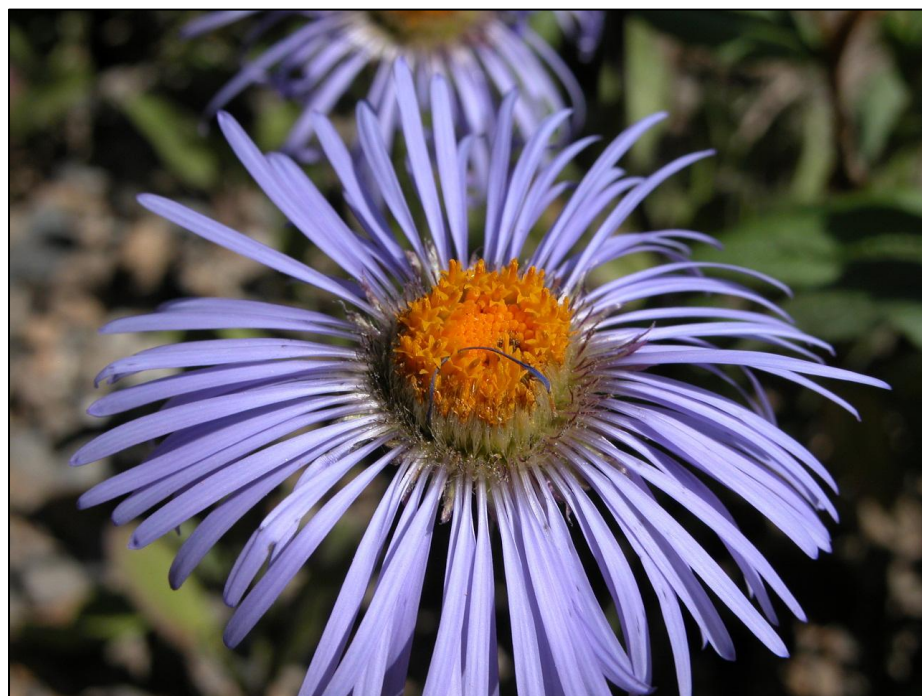


Figure 4. *Tibetiodes yunnanensis*. Sichuan. Photo by Susan Kelley, 2006.



Figure 5. *Tibetiodes yunnanensis*. Sichuan. Photo by Susan Kelley, 2006.



Figure 6. *Tibetiodes labrangensis*. Tibet. Photo by Dave Boufford, 2004.



Figure 7. *Tibetiodes flaccidus*. Sikkim. Photo by Harry Jans, 2018, iNaturalist.



Figure 8. *Tibetiodes flaccidus*. Yunnan. Photo by Dave Boufford, 2013.



Figure 9. *Tibetiodes himalaicus*. Nepal. Photo by T. Abe Lloyd, 2017.

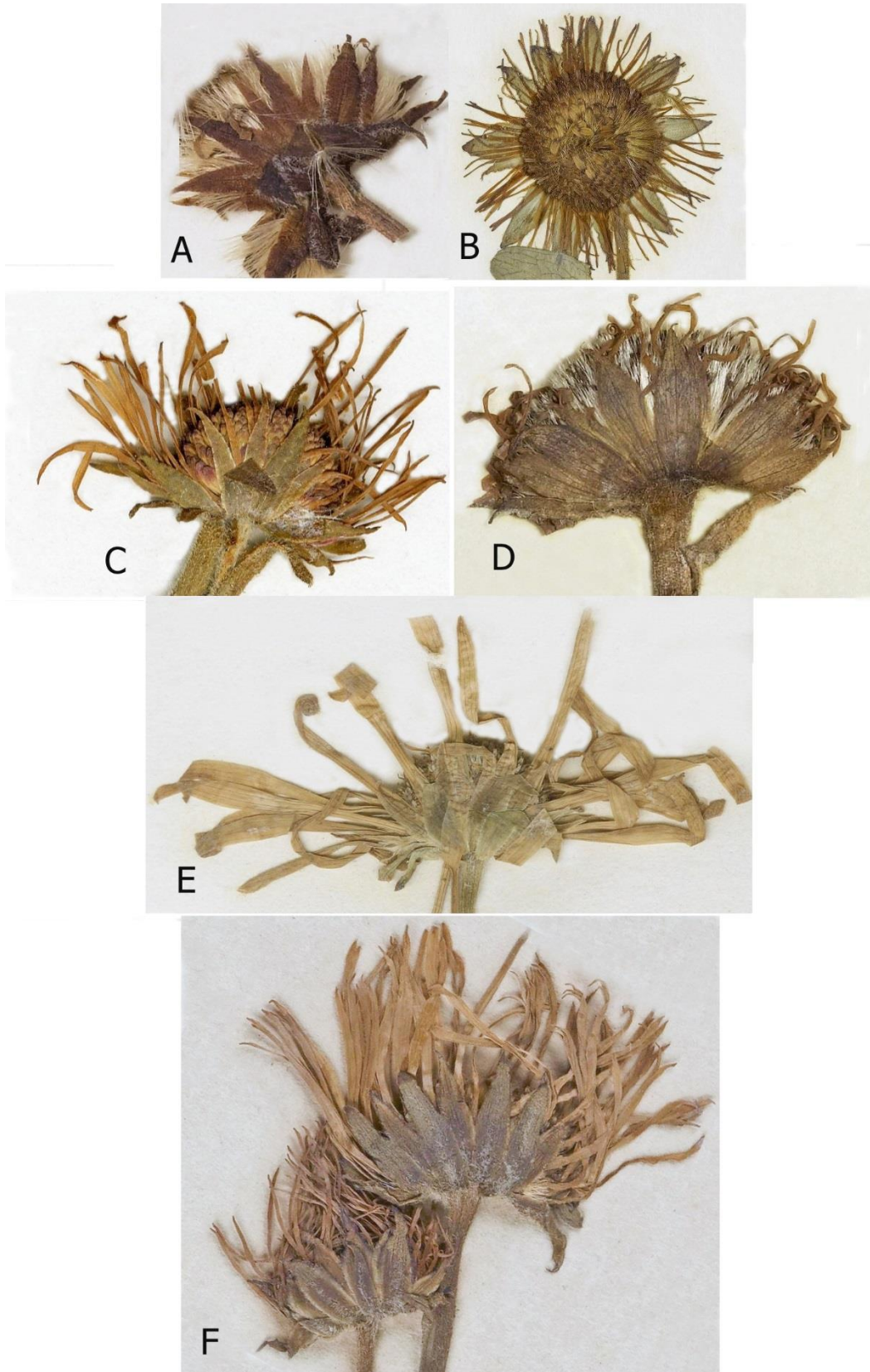


Figure 10. *Tibetiodes* involucres. A. *T. stracheyi*. B. *T. latisquamatum*. C. *T. brachytricha*. D. *T. himalaica*. E. *T. jeffreyana*. F. *T. yunnanensis*.

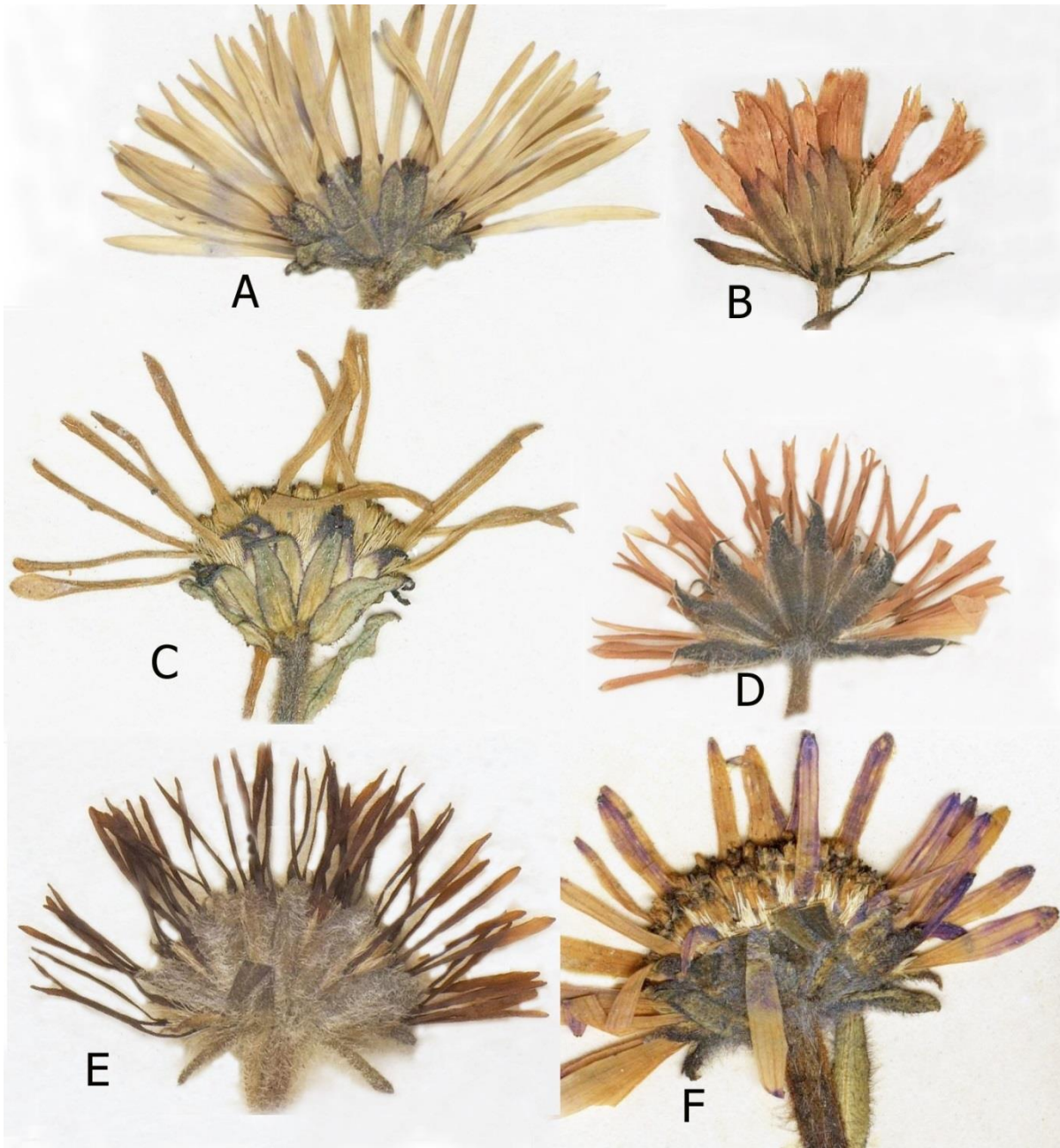


Figure 11. *Tibetiodes* involucres. A. *T. likiangensis* B. *T. tientschwanensis*. C. *T. retusa*. D. *T. asteroides*. E. *T. flaccidus*. F. *T. brevis*.

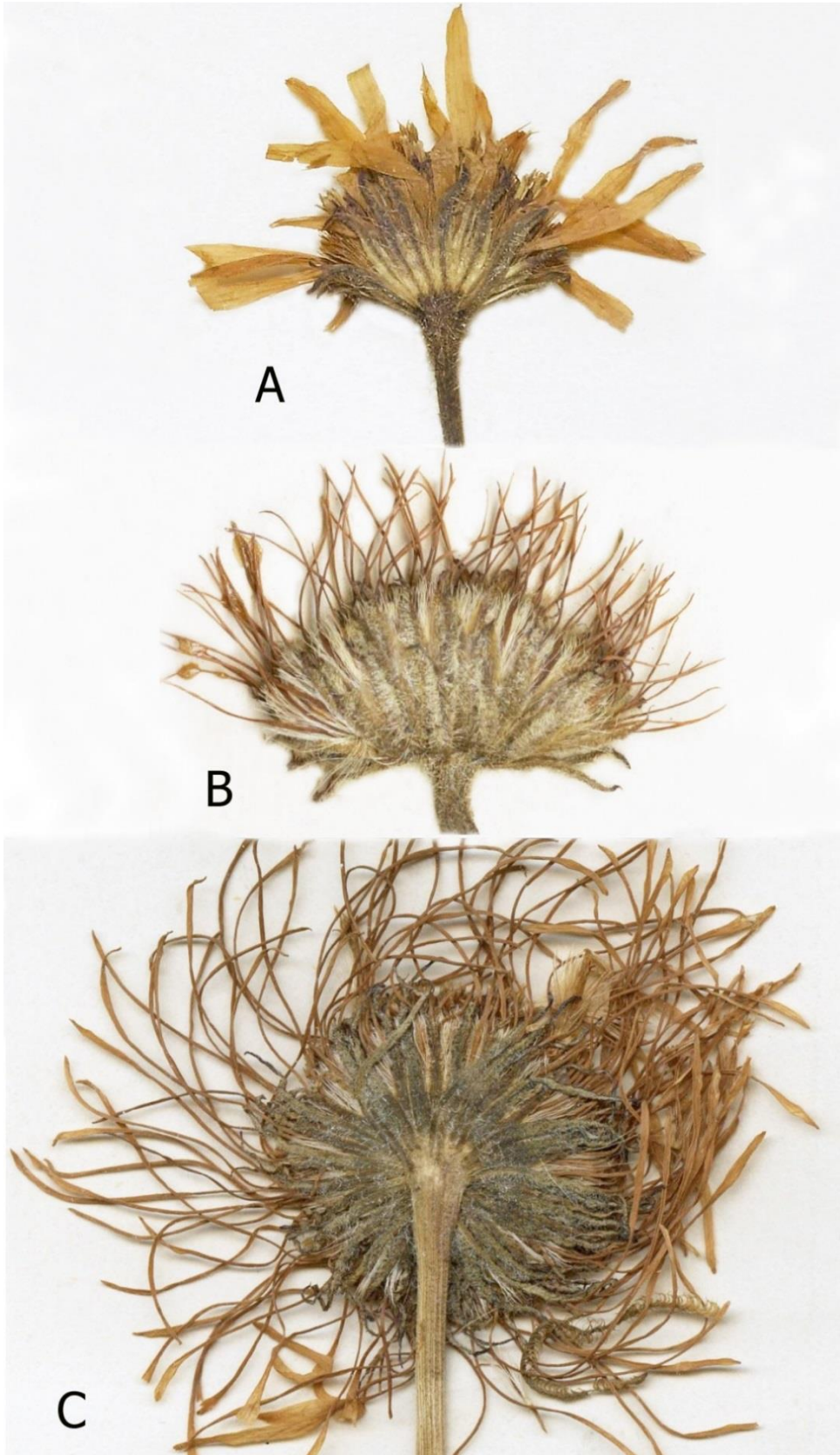


Figure 12. *Tibetiodes* involucres. A. *T. salwinensis*. B. *T. labrangensis*. C. *T. farreri*.



Figure 13. *Tibetiodes diplostehioides*. Yunnan. Forrest 30624 (E).



Figure 14. *Tibetiodes lipskii*. Gansu. Wang 7256 (PE).

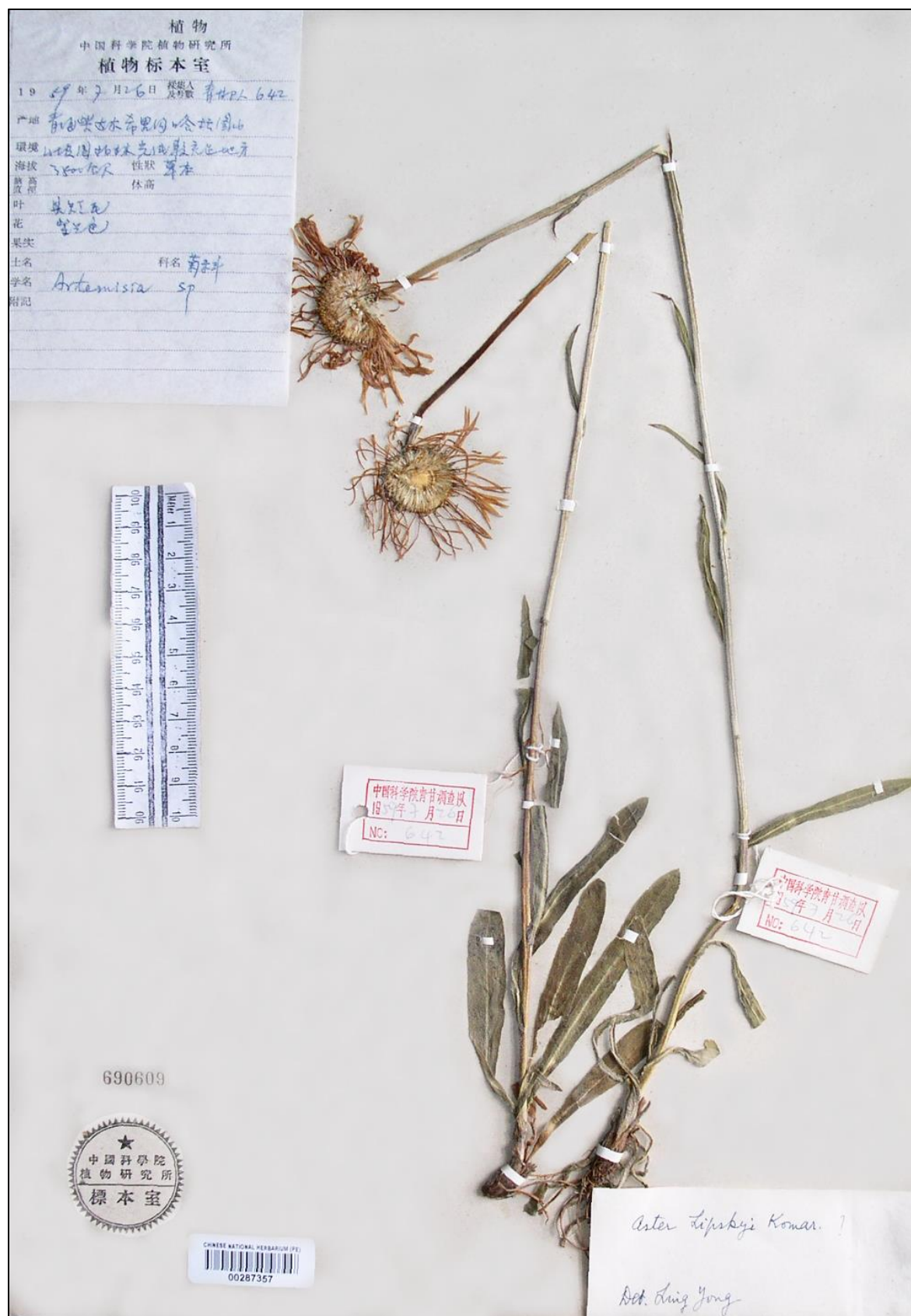
Figure 15. *Tibetiodes lipskii*. Qinghai. Qinghai Collecting Team 642 (PE).



Figure 16. *Tibetiodes bietii*. Yunnan. Rock 9728 (E).



Figure 17. *Tibetiodes labrangensis*. Tibet. Rock 14447, isotype (GH).



Figure 18. *Tibetiodes brevis*. Yunnan. Forrest 10516, asdfafd, *Aster brevis* (E).



Figure 19. *Tibetiodes tsarungensis*. Yunnan. Forrest 16873, *Aster flaccidus* subsp. *tsarungensis*, holotype (E).



Figure 20. *Tibetiodes asteroides*. Tibet. Lepcha 226 (K).



Figure 21. *Tibetiodes likiangensis*. Yunnan. Forrest 6001 (E).



Figure 22. *Tibetiodes salwinensis*. Yunnan. Forrest 19088, lectotype (K).



Figure 23. *Tibetiodes stracheyi*. Nepal. Hoshino et al. 9666126 (E).



Figure 24. *Tibetiodes brachytricha*. Yunnan. Rock 9728 (US).



Figure 25. *Tibetiodes himalaicus*. Yunnan. Forrest 11134, isolectotype of *Aster mekongensis* (PE).



Figure 26. *Tibetiodes jeffreyana*. Yunnan. Forrest 669, holotype of *Aster jeffreyanus* (E).