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NOTE

Typification and specific status of *Senecio lagotis* W. W. Sm. (Asteraceae)

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ABSTRACT: A lectotype is designated for *Senecio lagotis* W. W. Sm. (*Asteraceae*) and for the combination *Ligularia lagotis* (W. W. Sm.) Hand.-Mazz. based on it. *Ligularia lagotis* (W. W. Sm.) Hand.-Mazz. is an independent species but not synonym of *Ligularia virgaurea* (Maxim.) Mattf. ex Rehder et Kobuski. as it was treated earlier.

KEY WORDS: *Asteraceae*, lectotypification, *Ligularia*, *Senecio lagotis.*

INTRODUCTION

During the critical revision of genera *Senecio* and *Ligularia* (*Asteraceae*) in Central National Herbarium (CAL), Botanical Survey of India, Howrah, the materials of *Senecio lagotis* W. W. Sm. were examined. *Senecio lagotis* was described from Sikkim (India) and was placed into the section *Ligularia* (Smith, 1911). Subsequently, the section *Ligularia* was considered as an independent genus *Ligularia*, which contains about 140 species distributed in temperate regions of Asia with only two species in Europe (Liu et al., 1994; Liu and Illarionova, 2011). For a long time *Senecio lagotis* was treated as synonym of *Ligularia virgaurea* (Maxim.) Mattf. ex Rehder et Kobuski (Rao et al., 1988; Liu, 1989; Mathur, 1995; Grierson and Springate, 2001; Liu and Illarionova, 2011) despite the fact that H. Handel-Mazetti (1938) pointed out differences of *Senecio lagotis* in the note to *Ligularia virgaurea* and made combination *Ligularia lagotis* (W. W. Smith) Hand.-Mazz.

In the protologue of *Senecio lagotis* W. W. Sm. five specimens are cited without indicating as type. These specimens are syntypes *vide* Art. 9.2 (McNeill et al., 2006) and correspond to original description made by W. W. Smith. After critical examination of all the syntypes kept at CAL and digital images of syntypes from E and BM the material located at CAL (*King*, 4324; barcode n. CAL0000023564) is designated as lectotype of the name *Senecio lagotis* W. W. Sm. and of the combination *Ligularia lagotis* (W. W. Sm.) Hand.-Mazz. Chosen specimen is the best matches with the description provided in the protologue.

A critical study of the specimens kept in Central National Herbarium of Botanical Survey of India (CAL), Chinese National Herbarium (PE), Sichuan University Herbarium (SZ), *herbaria* of Komarov Botanical Institute (LE), Kunming Institute of Botany (KUN), Chengdu Institute of Biology (CDBI) and Northwest Plateau Institute of Biology (HNWP) revealed that *Ligularia lagotis* clearly differs from *Ligularia virgaurea* by morphology of pappus and of capitula. Compared to *Ligularia virgaurea*, pappus of *Ligularia lagotis* is fulvous, 1.5–2 mm, involucre 8–10 × 10–12 mm, phyllaries 12–16, ligulate florets 12–16 (Fig. 1). Pappus of *Ligularia virgaurea* is white, 5–7 mm long; involucre 7–10 × 6–9 mm, phyllaries 10–14, ligulate florets 5–14 (Fig. 2). Geographical distribution of these two species is also different: *Ligularia virgaurea* is broadly distributed in China (Gansu, Qinghai, Sichuan, NE Xizang, NW Yunnan); *Ligularia lagotis* is distributed in Bhutan, India (Sikkim) and Nepal.

TAXONOMIC TREATMENT

Ligularia lagotis (W. W. Smith) Hand.-Mazz. Bot. Jahrb. Syst. 69: 122. 1938; *Senecio lagotis* W. W. Smith, J. Proc. Asiat. Soc. Bengal, n. s., 7, 3: 70. 1911; *Cremanthodium plantaginifolium* (Franch.) R. D. Good subsp. *franchetii* R. D. Good f. *lagotis* (W. W. Smith) R. D. Good, J. Linn. Soc., Bot. 48: 291. 1929.

Lectotypus (designated here): **INDIA**. Sikkim, Too-ku-la. 14 Jul 1877, *G. King,* 4324 – CAL! (Barcode n. CAL0000023564, Fig. 3), isolectotypes: BM (Barcode n. BM000035565, photo!); E (Barcode n. E00413143, photo!).

Syntypes: **INDIA**. Sikkim, between Sherabthang et Kapoop, 13000', 13 Jul 1910, *W. W. Smith*, 3414 (CAL!); above Changu, 13000', 16 Jul 1910, *W. W. Smith*, 3516 (CAL!); Dikchu Valley, 13000', 23 Jul 1910, *W. W. Smith*, 3748 (CAL!); Changu (on ridge above), 12000', 26 Oct 1910, *Ribu et Rhomoo*, 4380 (CAL!)

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Plant erect, 45–60 cm tall, stem 4–5 mm in diam. at base, glabrous. Basal leaves petiolate; petiole 3–10 cm, winged or winged only in the upper, glabrous; leaf blade oblanceolate, elliptic or oblong-lanceolate, 8–15 × 2.5–6 cm, glabrous, pinnately veined, base attenuate, margin entire, apex obtuse or acute. Stem leaves sessile, smaller then basal leaves, obovate or oblong, amplexicaule, apex obtuse or acute. Synflorescence racemose, leaflike bracts linear to linear-lanceolate, smaller distally; peduncles 1–5 cm, yellowish pilose. Capitula numerous; supplementary bracts 2–3, filiform. Involucre turbinate or cupular, 7–10 × 10–12 mm, outside glabrous; phyllaries 12–16, in 2 rows, lanceolate or narrowly lanceolate, 10 × 2–5 mm, apex acuminate. Ray florets 12–16, yellow; lamina lanceolate, 8–12 × 3.5–4 mm, apex acute. Disc florets numerous, 3.5–4.5 mm. Achenes brown, cylindric, 3.5–4.5 mm. Pappus fulvous, 1.5–2 mm.

Distribution: Bhutan, India (Sikkim), and Nepal.

Additional specimens examined: **INDIA.** Sikkim: Cho-la, 01 Jul 1882, *G. King*, *s. n.* (CAL; P, photo); Pet-za-la, Jul 1879, *G. King*, *s. n.* (CAL, K, photo); Chimnago, 12500', 26 Jul 1910, *W. W. Smith*, 3806 (CAL); above Kapup, 13600', 10 Oct 1928, *s. leg.* 304 and 307 (CAL); Changu, 12310', 13 Jul 1956, *D. Chatterjee*, 185 (CAL); Sikkim, *G. H. Cave*, 30 and 372 (CAL); Sibpur, Calcutta, 1908. *K. K. Meysner*, *s. n.* (LE); *s. l.* , 5 Jul 1888, *s. leg.*, *s. n. H[erb]. Pomol.* (LE, fig. 1); **BHUTAN**. Chi La Pass, 12500', 20 Aug 1963, *G. Sen Gupta* (CAL).

Ligularia virgaurea (Maxim.) Mattf. ex Rehder et Kobuski, J. Arnold Arbor. 14: 40. 1933; Ling, Contrib. Bot. Inst. Nat. Acad. Peiping, 2: 536. 1934; Hand.-Mazz., Acta Horti Gotoburg. 12: 303. 1938; Hand.-Mazz., Bot. Jahrb. 69: 121. 1938; Walker, Contrib. U. S. Nat. Herb. 28, 4: 671. 1941; S. W. Liu, in Fl. Reip. Pop. Sin. 77, 2: 112. 1989, p. p.; S. W. Liu, in Fl. Qingh. 3: 427. 1996; T. Min, in Fl. Yunnan. 13: 514. 2004, p. p.; I. D. Illar., Novit. Syst. Pl. Vasc. 38: 242. 2006; S. W. Liu a. I. D. Illar., in Fl. China, 20-21: 399. 2011, p. p.; *Senecio virgaurea* Maxim., Bull. Acad. Sci. Pétersb. 27: 484. 1881; *Senecio plantaginifolius* Franch., Bull. Soc. Philom. (Paris), ser. 8, 3: 145. 1891; *Cremanthodium plantaginifolium* (Franch.) R. D. Good, Journ. Linn. Soc. London (Bot.) 48: 291. 1929; *Cremanthodium plantaginifolium* subsp. *oligocephalum* R. D. Good, Journ. Linn. Soc. London (Bot.) 48: 292. 1929; *Ligularia plantaginifolia* (Franch.) Mattf. ex Rehder et Kobuski, J. Arnold Arbor. 14: 40. 1933; *Cremanthodium virgaurea* (Maxim.) Hand.-Mazz., Symb. Sin. 7, 4: 1144. 1936; *Senecillis virgaurea* (Maxim.) Kitam., Acta Phytotax. Geobot. (Kyoto), 8: 85. 1939; *Ligularia virgaurea* var. *oligocephala* (R. D. Good) S. W. Liu, in Fl. Qingh. 3: 427. 1996; S. W. Liu a. I. D. Illar., in Fl. China, 20-21: 400. 2011.



Fig. 1. Head of *Ligularia lagotis* (W.W.Sm.) Hand.-Mazz.



Fig. 2. Head of *Ligularia virgaurea* (Maxim.) Mattf. ex Rehder et Kobuski.

Types: **CHINA**, Qinghai: China occidentalis, regio Tangut (prov. Kansu), ad fl. Rako-gol, 10000–11000' s. m. 9/21 Jul 1880, *N. M. Przewalski, s. n.* (LE, barcode n. LE01002747, lectotype! Fig. 4); China occidentalis, regio Tangut (prov. Kansu), regio alpina prope alpem Dshachar-Dsargyn, 10500–11500' s. m. secus rivulos, 11/23 Jun 1880, *N. M. Przewalski, s. n.* (LE, syntype!); ad fl. Rako-gol, 10000–11000' s. m. 10/22 Jul 1880, *N. M. Przewalski, s. n.* (LE, syntype!); ad fl. Yussun-chatyma, 11/23 Jul 1880, *N. M. Przewalski, s. n.* (LE, syntype! Fig. 2).

Plant erect, 15–80 cm tall, stem 2–9 mm in diam. at base, glabrous. Basal leaves petiolate; petiole (2.5) 3–10 cm long, winged or winged only in the upper, glabrous; leaf blade ovate, elliptic or oblong-lanceolate, 3–15 × 1.5–7 cm, glabrous, pinnately or sometimes subparallel veined, base cuneate, gradually attenuate, margin entire, apex obtuse or acute. Stem leaves sessile, smaller then basal leaves, ovate or ovate-lanceolate to linear, often tubular-amplexicaule, apex acute to acuminate. Synflorescence racemose, leaflike bracts linear to linear-lanceolate, 0.5–3 cm, smaller distally; peduncles 0.3–5 cm, white arachnoid-puberulous, rare with short

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brown hears. Capitula numerous, sometimes solitary or few; supplementary bracts 2–3, filiform. Involucre turbinate or cupular, 7–10 × 6–9 mm, outside glabrous or pilose; phyllaries 10–14, in 2 rows, oblong or narrowly lanceolate, 6–10 × 1–2.5 mm wide, apex acuminate. Ray florets 5–14, yellow; lamina linear, 7–22 × 1.1–3 mm, apex acute. Disc florets numerous, 7–8 mm. Achenes yellowish, cylindric, 3.5–5 mm. Pappus white, 5–7 mm.

Distribution: China (Gansu, Qinghai, Sichuan, NE Xizang, NW Yunnan).

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Senecio lagotis W. W. Sm.（菊科）的選定模式

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摘要：*Senecio lagotis* W. W. Sm. 先前被處理為*Ligularia virgaurea* (Maxim.) Mattf. ex Rehder et Kobuski的異名，本文指定*Senecio lagotis* W. W. Sm.的選模式標本，並根據此選模式，將此一分類群轉移並採用*Ligularia lagotis* (W. W. Sm.) Hand.-Mazz.此一學名。

關鍵詞：菊科、選定模式、橐吾屬、*Senecio lagotis*。

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Fig. 3. Lectotype of *Senecio lagotis* W. W. Sm. (*King* 4324, CAL).

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Fig. 4. Lectotype of *Senecio virgaurea* Maxim. (*Przewalski*, 09 Jul 1880, LE).

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