Taxonomic Studies of *Cirsium* (Asteraceae) in Japan XIX.
Two New Species from Honshu, Central Japan

Yuichi Kadota

Department of Botany, National Museum of Nature and Science,
Amakubo 4–1–1, Tsukuba, 305–0005 Japan
E-mail: kadota@kahaku.go.jp

Abstract  *Cirsium myokoense* Kadota is described from Niigata Pref., Honshu, and is distinguished from *C. tenuipedunculatum* Kadota by having thicker, cylindrical involucres, patent and longer involucral phyllaries, longer and thicker peduncles, membranous, ovate to broadly ovate, medially pinnatifid cauline leaves and the absence of glandular bodies on inner and middle involucral phyllaries. *Cirsium nagisoense* Kadota is described from Nagano Pref. and is distinguished from *C. furusei* Kitam. by having cauline leaf blades glaucous (not woolly) below; adpressed, non spinulose involucral phyllaries and oblong to oblanceolate glandular bodies on bodies on all the involucral phyllaries. Both *C. myokoense* and *C. nagisoense* are endemic to Honshu, Japan, and belong to sect. *Onotrophe* (Cass.) DC. subsect. *Reflexae* Kadota (the *Cirsium kagamontanum* group).

Key words:  *Cirsium kisoense*, *Cirsium myokoense*, *Cirsium nagisoense*, *Cirsium spinuliferum*, Japan, new combinations, new species.

Introduction

This is part of a revisional work on Japanese *Cirsium* (Asteraceae) (Kadota, 1989–2008; Kadota and Nagase, 1988).

Subsect. *Reflexae* Kadota of sect. *Onotrophe* (Cass.) DC. (=the *Cirsium kagamontanum* group) is characterized by the absence of radical leaves, nodding heads, narrowly cylindrical to cylindrical involucres and the chromosome number of 2n=2x=34 and is considered to be a plant group that is extraordinarily differentiated in Honshu and Shikoku Islands, the Japanese Archipelagoes (Kadota, 2007b). Within this plant group there still remain several undescribed taxa especially in the central part of Honshu. Here I describe two new species from Honshu in the subsect. *Reflexae*.

Taxonomic treatment


Sect. *Onotrophe* (Cass.) DC., Prodr. 6: 644 (1837).

1.  *Cirsium myokoense* Kadota, sp. nov.  [Figs. 1 and 2]

Differt ab *Cirsio tenuipedunculatum*, caule bene ramoso ramis divaricatis, phyllariis involucrorum (8–)9–10-seriatis, flosculis longioribus, pedunculis crassioribus, acheniis costatis; ab *C. horiiano*, caule bene ramoso ramis divaricatis, pedunculis crassioribus, foliis mediis caulinis pinnatifidobatis, vittis vestigialibus non nisi super phyllariis involucrorum intimis, phyllariis exter-
Fig. 1. Type specimen of *Cirsium myokoense* Kadota (JAPAN: HONSHU; Niigata Pref., Myōkō-shi, Sasagamine, alt. 1290 m, 17 September 2007, Y. Kadota 075103, TNS 769885, holotype).
nis involucrorum longioribus.

**TYPE:** JAPAN: HONSHU; Niigata Pref., Myôkô-shi (former Naka-Kubiki-gun, Myôkô-Kôgen-cho), Sasagamine, at the foot of Mt. Myôkô-san [36°52'15"N 138°04'23"E], alt. 1290 m, 17 September 2007, Y. Kadota 075103 (TNS 769885–holotype; Fig. 1).

A hermaphrodite, perennial, herbaceous plant, 1–2 m tall or taller. Rootstock stout, horizontal, up to 5 cm in diameter, with cord-like roots. Stem declining, well branched from the middle part, leafy, arachnoid and covered with short brownish hairs chiefly in the upper part. Basal leaves withering at anthesis. Middle cauline leaves dull green on the adaxial side, membranous, neither auriculate nor amplexicaul, short petiolate; blades narrowly ovate to lanceolate in outline, 15–35 cm, 4–18 cm broad, glabrous on the adaxial side and sparingly pubescent with long brownish hairs along midribs on the abaxial side, shallowly to medially pinnatilobate or frequently coarsely dentate, if pinnatilobate, 5–8-jugate; lobes narrowly ovate, 2–7 cm long, 1–2.5 cm broad, with weak spines 1–3 mm long; petioles 0.3–1 cm long. Upper cauline leaves coarsely dentate, subsessile. Flowers in September. Capitula 2–3 in a loose raceme, nodding, with peduncles 4–7 cm long; subtending leaves 2–5, lanceolate to narrowly ovate, 0.5–1 cm long, with sharp spines ca. 1 mm long. Involucres cylindrical, 18–20 mm long, 8–10 mm (*in vivo*) and 2–3 cm (*in sicco*) in diameter, sparingly arachnoid. Phyllaries 9–10-seriate, patent to gently recurved; glandular bodies absent, eglutinous; middle phyllaries sometimes provided with spinules along the margin; outer phyllaries ovate with long acuminate tips, 5–8 mm long, clearly shorter than the inner ones, herbaceous, terminated with sharp spines ca. 1 mm long. Corollae pale violet, 14–15 mm long; lobes 3–4 mm long; throats 4.5–5 mm long; tubes 6 mm long, slightly longer than the throats. Achenes grayish brown, ca.

---

Fig. 2. Habit of *Cirsium myokoense* Kadota (JAPAN: HONSHU; Niigata Pref., Myôkô-shi, Sasagamine, alt. 1290 m, 17 September 2007). Left corner inset shows a nodding capitulum.
3.5 mm long, ribbed; pappus sordid, 8–13 mm long.

Chromosome number: 2n=2x=34.

Japanese name: Myôkô-azami (nom. nov.).

Distribution: Honshu (the Kubiki Mountain Range, Myôkô Mountains; Fig. 5, star). Endemic to Japan.


*Cirsium myokoense* is distinguished from *C. tenuipedunculatum* Kadota [= *C. effusum* auct. non (Maxim.) Matsum.: cf. Kadota, 1993] by having cylindrical and thicker involucres, patent (spreading) and longer involucral phyllaries, longer and thicker peduncles, membranous, ovate, medially pinnatilobate cauline leaves and the absence of glandular bodies on inner and middle involucral phyllaries. *Cirsium tenuipedunculatum* is known as a member of the Fossa Magna (Fuji–Hakone) Elements plants and is distributed in Mt. Fuji and its neighboring area and the northern part of the Akaishi Mountain Range.

*Cirsium myokoense* is different from *C. horii-anum* Kadota by having longer peduncles, cylindrical involucres, patent (spreading) involucral phyllaries, shorter florets and shorter, ribbed achenes. *Cirsium horii-anum* is restricted to the Oga Mountains, Akita Pref., northern Honshu. The locality of *C. horii-anum* is distant from that of *C. myokoense* by ca. 400 km in beeline distance (Kadota, 2005).

*Cirsium myokoense* grows exclusively along the margin of *Fagus crenata* woods. The range of *C. myokoense* is restricted to the southern slopes of the Myôkô Mountains, central Honshu, Japan (Fig. 5, star).

2. *Cirsium nagisoense* Kadota, sp. nov.

[Fig. 3, 4 and 6A]

Differt ab *Cirsio furusei*, foliis caulibus subter glaucis (non lanatis), phyllariis involucrorum adpressis integris (sine spinulis), vittis bene evo-lutis oblongis vel oblanceolatis.

**TYPE**: JAPAN: HONSU: Nagano Pref., Kiso-gun, Nagiso-machi, Azuma, Araragi, at the foot of Mt. Nagiso-dake, 35°34'31"N 137°38'12", alt. 990 m, 20 September 2007, Y. Kadota 075401 (TNS 769879–holotype; Fig. 3).

A hermaphrodite, perennial, herbaceous plant, 0.7–2 m high. Root stock sturdy, oblique to suberect, up to 2 cm in diameter, with firm, cord-like roots. Stem erect to inclining, oblicue, well branched from the middle part, sparingly arachnoid and densely covered with multicellular, brownish hairs throughout the surface; branches well elongated. Basal leaves withering at anthesis. Middle cauline leaves deep green, herbaceous; blades narrowly ovate in outline, 16–35 cm long, 5–15 cm wide, glaucous on the abaxial side, almost glabrous on both sides, deeply pinnatifoliate, sessile, amplexicaul, not decurrent; lobes 6–11-jugate, ovate, 2.5–7 cm long, 0.7–1.5 cm wide, with strong and sharp spines up to 10 mm long. Upper cauline leaves narrowly ovate, smaller than the middle, diminishing in size, glabrous, sessile, amplexicaul. Flowers in September to October. Capitula nodding, 3–4 in a loose corymb or solitary, long pedunculate; peduncles 6–17 cm long, densely pubescent with multicellular, brownish hairs; subtending leaves 3–5, lanceolate, 2–4 mm long, provided with weak spines less than 1 mm long. Involucres narrowly cylindrical, exceedingly glutinous, 13–15 mm long, 5–8 mm (*in vivo*) and 1–1.5 mm (*in sicco*) in diameter, sparingly arachnoid. Phyllaries 9–10-seriate, herbaceous, terminated with weak spines less than 1 mm long; innermost phyllaries broadly linear, ca. 15 mm long, erect; middle phyllaries narrowly ovate, ca. 1 cm long, adpressed; outer phyllaries ovate, adpressed, 2–4 mm long, 1/5 shorter than the inner ones; glandular bodies well developed, oblong to oblanceolate on all the phyllaries.
Two new species of *Cirsium* from Honshu

Fig. 3. Type specimen of *Cirsium nagisoense* Kadota (JAPAN: HONSHU; Nagano Pref., Kiso-gun, Nagiso-machi, Azuma, Araragi, at the foot of Mt. Nagiso-dake, alt. 990 m, 20 September 2007, Y. Kadota 075401, TNS 769879, holotype).
Fig. 4. Habit of Cirsium nagisoense Kadota (JAPAN: HONSHU; Nagano Pref., Kiso-gun, Nagiso-machi, Azuma, Araragi, at the foot of Mt. Nagiso-dake, alt. 990 m, 20 September 2007). Left corner inset shows a nodding capitulum.
Corollae violet to pale violet, 14–15 mm long; lobes 2.5–4 mm long; throats 4.5–5 mm long; tubes 6–7 mm long, slightly longer than the throats. Achenes grayish brown, minutely light purple-spotted or -striated, ca. 3 mm long, angled, finely striate, tapered to the base; pappi ivory-white, 8–13 mm long.

Chromosome number: 2n = 2x = 34.

Distribution: Central Honshu (Nagano Pref., the southernmost part of the Kiso Mountain Range; Fig. 5, triangle). Endemic to Japan.

Japanese name: Nagiso-azami (nom. nov.).


Cirsium nagisoense is distinguished from C. furusei Kitam. (Fig. 6B) by cauline leaf blades glaucous below (not woolly), adpressed, entire (not spinulose), involucral phyllaries, oblong to oblancoolate glandular bodies on the inner and middle involucral phyllaries.


Fig. 5. Distribution of Cirsium myokoense Kadota (star) and C. nagisoense Kadota (triangle).


*Cirsium nagisoense* is restricted to the southern slopes of Mt. Nagiso-dake, Nagano Pref., Honshu (Fig. 5, triangle), and grows near streams along summer-green woods and/or *Cryptomeria japonica* plantations.

**Acknowledgement**

I wish to give my sincere thanks to Prof. Dr. T. Nishikawa for his counting the chromosome numbers of *Cirsium myokoense* and *C. nagisoense*.

**References**


Kadota, Y. 1991. Taxonomic studies of *Cirsium* (Asteraceae) of Japan I. Alpine species of central Honshu — the *Cirsium fauriei* group. Bulletin of the National Sci-


