

北陸地方およびその近隣地域のアザミ属植物の分類
学的研究: (2) アシウアザミ -
京都府芦生生産の一新種

メタデータ	言語: eng 出版者: 公開日: 2019-10-03 キーワード (Ja): キーワード (En): 作成者: メールアドレス: 所属:
URL	https://doi.org/10.24517/00055575

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Shun-ichi Yokoyama*, Mio Yamashita** and Tatemi Shimizu** :
**Taxonomic Studies on the Genus *Cirsium* (Compositae) in
the Hokuriku District and its Adjacent Areas (2) *Cirsium
ashiuense* — a New Species from Ashiu, Kyoto Prefecture**

横山俊一*・山下水緒**・清水建美** : 北陸地方およびその近隣地域の
アザミ属植物の分類学的研究 (2) アシウアザミ—京都府芦生産の一新種

Abstract

Cirsium ashiuense, which is closely related to *C. kagamontanum*, is described from Ashiu, Kyoto Prefecture, Japan. Morphological and cytological differences between them are briefly discussed.

Key words : chromosome number, *Cirsium ashiuense*, *C. kagamontanum*, Japan Sea side.

During our research on the genus *Cirsium* (Compositae) of the Hokuriku District, plants from Ashiu, Kyoto Prefecture, referred to *Cirsium kagamontanum* Nakai (Yasuda and Nagamasu 1995) were morphologically and cytologically examined. The plants from Ashiu show marked differences from *C. kagamontanum* in the shape of involucre and glandular bodies, the length of terminal spines of phyllaries, and the size of corolla and achenes. Their chromosome number is also different from *C. kagamontanum*. The plants are therefore described here as a new species.

Cirsium ashiuense S. Yokoyama et T. Shimizu, sp. nov. (Figs. 1 and 2).

C. kagamontanum auct. non Nakai: Kitamura, Comp. Jap. 1, 97 (1937); Yasuda and Nagamasu in Contr. Biol. Lab., Kyoto Univ. 28, 418 (1995).

Haec species *Cirsium kagamontanum* affinis est, sed a *C. kagamontanum* involucris anguste campanulato-tubularibus, spinis terminalibus phyllariorum ca. 0.6 mm longis, glandulis phyllariorum anguste lanceolatis vel linearibus, corollis 17-21 mm longis, acheniis 4-5 mm longis, numero chromosomatum $2n=68$ distinguitur.

Planta perennis tetraploidea. Caulis 1-2 m altus ramosus erectus sulcato-striatus glabratus sursum arachnoideus. Folia et caulina inferiora radicalia sub anthesi emarcida. Folia caulina ampla elliptica vel elliptico-lanceolata sessilia, apice acuta basi amplexicaulia margine pinnatifida, lobis circ. 5-6 jugis anguste ovatis margine spinuliferis apice acutis vel acuminatis spinis tenuibus 3-4 mm longis praeditis, paginis supra pilosis subtus pallidis sericeo-pubescentibus. Capitula parva numerosa nutantia rarius erecta. Pedunculi graciles arachnoidei. Involucra anguste campanulato-tubulosa arachnoidea glutinosa, 15-22 mm longa 7-13 mm lata in vivo, phyllariis 7-8 seriatis imbricatis, adpressis cum glandulis phyllariorum anguste lanceolatis vel linearibus, exterioribus abbreviatis lanceolatis vel ovato-lanceolatis apice acuminatis breviter spinulosis, mediis anguste oblongis vel oblongo-lanceolatis apice acutis aut breviter spinulosis interioribus linearibus apice acuminatis scariosis in sicco 13-20 mm longis. Corollae violascentes 17-21 mm longae, tubis 8-11 mm longis in sicco. Achenia 4-5 mm longa. Pappi sordide brunnescentes, 14-17 mm longi. Numerus chromosomatum $2n=68$ (Fig. 3).

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Nom. Jap.: Ashiu-Azami (nov.)
 Typus: Japonia. Honshu. Kyoto Pref.: Ashiu,
 Miyama-cho, Kita-kuwata-gun, 5 Nov., 1993, M.
 YAMASHITA, S. YOKOYAMA et T. SHIMIZU s. n. (Holo-

typus KANA174671 (KANA); Isotypus KYO).

Perennial, 1-2 m tall. Rhizome thick, well de-
 veloped, with stout adventitious roots. Stem
 erect, 5-10 mm across at base, sulcate, glabres-



Fig. 1. Type specimen of *Cirsium ashuense* (KANA 174671).

cent but arachnoid toward apex, well branched in upper part. Radical and lower cauline leaves shed in anthesis. Cauline leaves large, sessile, amplexicaul at base; blades elliptical or elliptic-lanceolate, 30–60 cm long, 10–30 cm wide, pinnatifid, sparsely covered with short multicellular brownish hairs above, sparsely sericeous beneath; lobes 5–6 jugate, narrowly ovate, 5–15 cm long, 1–5 cm wide, with spines 3–4 mm long. Heads many in a lax corymb, nodding or rarely erect; peduncles 1–20 cm long. Involucres campanulate-tubular, arachnoid, 15–22 mm long, 7–13 mm across in vivo. Phyllaries 7–8 seriate, imbricate, adpressed, glutinous, with glandular bodies narrowly lanceolate to linear; outer ones lanceolate to ovate-lanceolate, 2–4 mm long, acuminate and shortly spinulose; middle ones narrowly oblong to lanceolate, 3–7 mm long, acute at apex; inner ones linear, 13–20 mm long, acuminate at apex, scaly in sicco. Corolla pale

violet, 17–21 mm long; tubes 8–11 mm long. Achenes 4–5 mm long; pappus sordid, brownish, 14–17 mm long. Chromosome number $2n=68$.

Anthesis: September to November.

Distribution: Japan. Honshu: Kyoto, Shiga and Fukui Prefectures (Fig. 4).

Cirsium kagamontanum Nakai was described from Tanitoge Pass on the prefectural border of Ishikawa and Fukui (Nakai 1912) and reported to be a diploid, $2n=34$ (Aishima 1934; Yokoyama and Shimizu 1994). It is classified into sect. *Onetrophe* (Cass.) DC. subsect. *Reflexae* (Kitam.) Kadota characterized by perennial habit, medium to small-sized cylindrical narrowly campanulate nodding heads, basal leaves withering at anthesis and monotone achenes (Kadota 1995). Its distribution range extends from the southern part of the Tohoku District south to the Kinki District (Kitamura 1937) or the Kanto, the Chubu and the Kinki Districts (Kadota

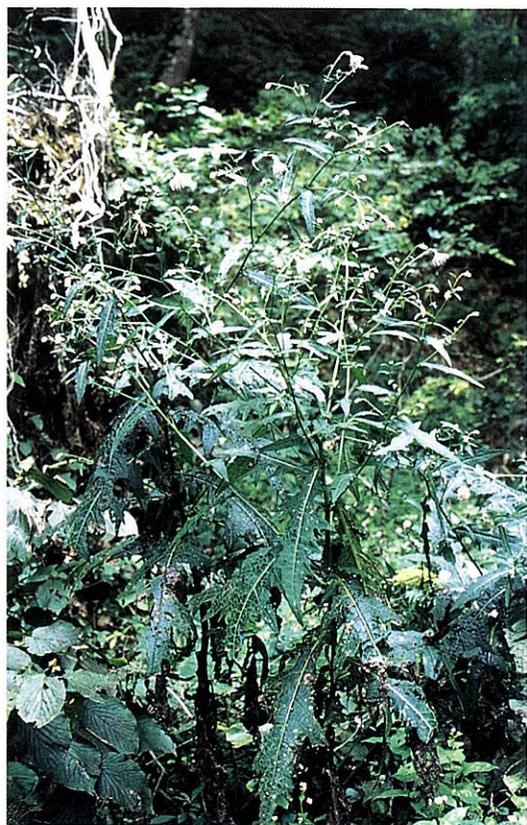


Fig. 2. Habit of *Cirsium ashiiense* (Honshu, Kyoto Pref.: Ashiu, Miyama-cho, Kita-kuwata-gun, 13 Oct., 1995).

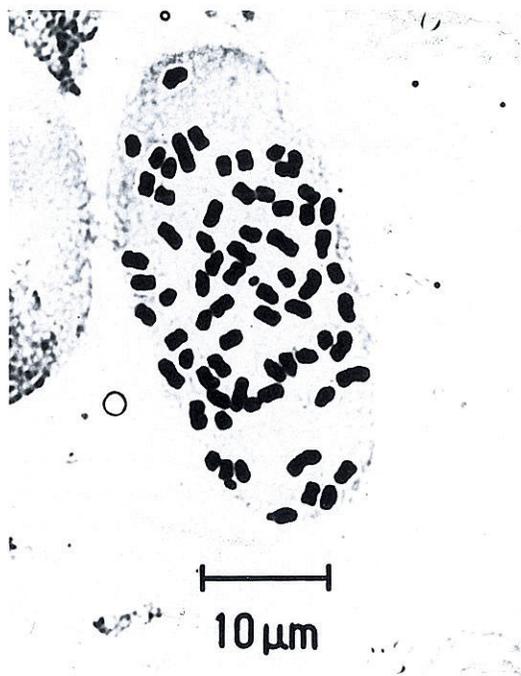


Fig. 3. Somatic chromosome of *Cirsium ashiiense*, $2n=68$. Ashiu, Miyama-cho, Kita-kuwata-gun, 16 Sep., 1991, S. YOKOYAMA (KANA172276).

1995), covering Ashiu and its adjacent areas. However, the entity of plants referred to *C. kagamontanum* in Ashiu and its adjacent areas, which are likewise classified into the same subsection, has been remained questionable to us.

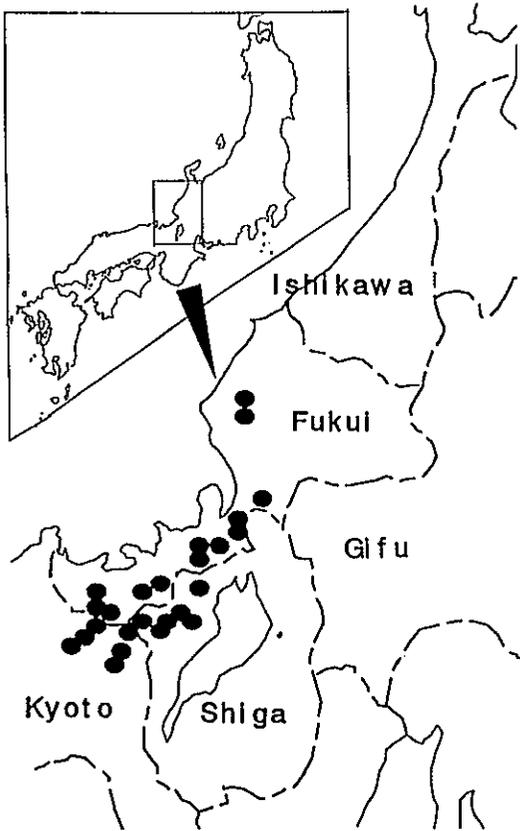


Fig. 4. Confirmed localities of *Cirsium ashuense* (●).

The result of morphological comparison between *C. ashuense* and *C. kagamontanum* from the type locality and its surrounding areas showed that the former could be discriminated from the latter by the shape of involucre (campanulate-tubular vs. narrowly tubular, Fig. 5), the shape of glandular bodies on involucre bracts (narrowly lanceolate to linear vs. elliptical), length of terminal spines of middle involucre bracts (0.6 mm vs. 0.3 mm long), the length of collora (18.7 ± 0.8 mm vs. 15.9 ± 0.7 mm long) and the size of achenes (4.4 ± 0.2 mm vs. 3.6 ± 0.1 mm long).

The somatic chromosome number of *C. ashuense* are also examined in root tip cells by the

squashing method with 1% aceto-orcein solution. All of 50 plants examined were proved to be tetraploid, $2n=68$. The voucher specimens are denoted in Appendix.

We wish to express our cordial thanks to Dr. K. Nakamura, Department of Biology, Faculty of Science, Kanazawa University, for his valuable advice and encouragement during the course of this study. We also wish to express our hearty thanks to Dr. Y. Kadota, Department of Botany, National Science Museum, Tokyo, for criticism and kind suggestion. Our thanks should be extended to Mr. Y. Fukunaga, Wakasa High School, for his various help in the field. This study was supported in a part by a Grant-in-Aid for the Scientific Research Program from the Ministry of Education, Science and Culture, Japan (No. 05454008 to Yokoyama and Shimizu; leader, K. Nakamura).

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Appendix

The following list shows specimens examined except the type. The specimens preserved in KANA are denoted by the running sheet number in the herbarium (KANA number). The underlined specimens are the vouchers for chromosome count.

Cirsium ashuense S. Yokoyama et T. Shimizu

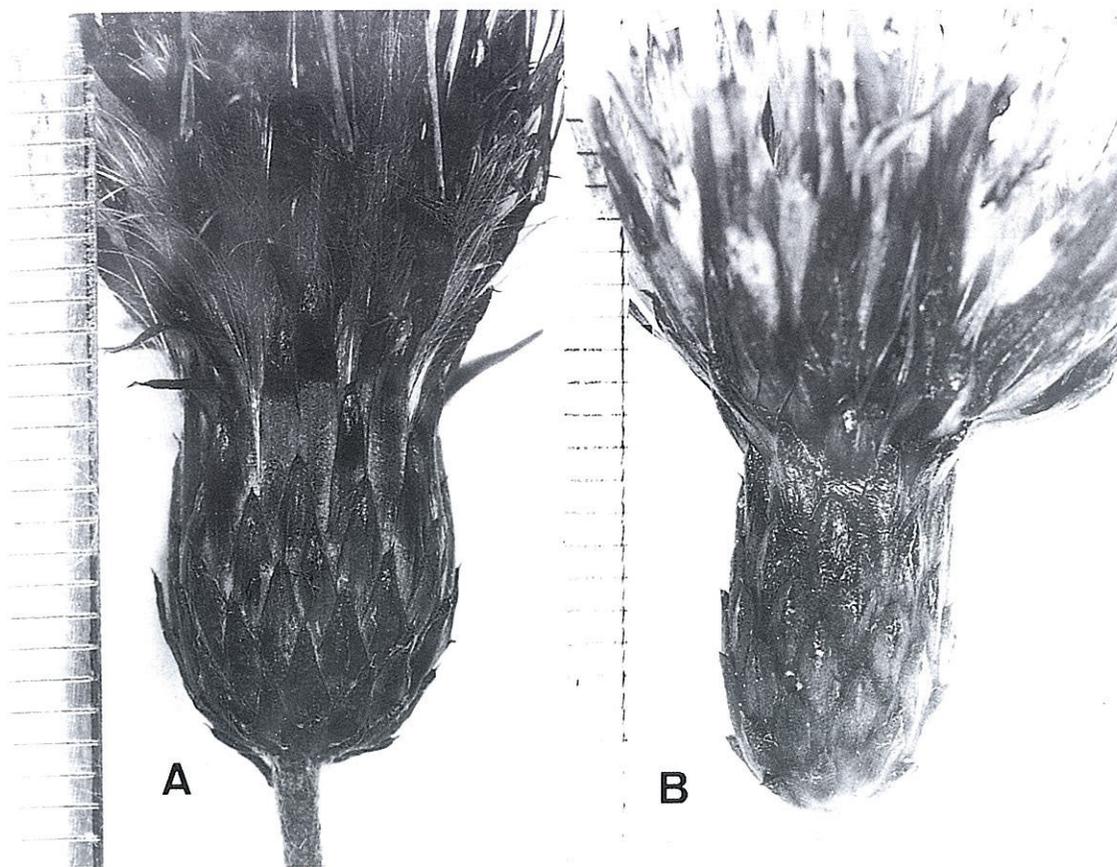


Fig. 5. Involucres of *Cirsium ashiuense* (A) and *C. kagamontanum* (B). A: Honshu, Kyoto Pref.: Ashiu, Miyama-cho, Kita-kuwata-gun (KANA 193505). B: Honshu, Ishikawa Pref.: Tani-toge, Shiramine-mura, Ishhikwa-gun (KANA 193509).

Kyoto Pref.: Kyoto Univ. Forests, Ashiu, Miyama-cho, Kita-kuwata-gun, 1 Nov., 1989, K. NAKAMURA *s. n.* (KANA 175718, 175721, 175723); *ibid.*, 16 Sep., 1991, S. YOKOYAMA *s. n.* (KANA 172272-172276); *ibid.*, 13 Oct., 1995, YOKOYAMA *s. n.* (KANA 193505, 193506); *ibid.*, 17 Oct., 1992, S. TSUGARU *et al.* 17132-17134 -cited in Yasuda and Nagamasu (1995) as *C. kagamontanum* (KYO), Horikoshi-toge, Miyama-cho, Kita-kuwata-gun, 2 Oct., 1991, S. YOKOYAMA *s. n.* (KANA172269, 172270); *ibid.*, 2 Nov., 1993, T. SHIMIZU *et al.* *s. n.* (KANA 174450, 174453, 174457); Morisato, Miyama-cho, Kitakuwata-gun, 14 Oct., 1994, S. YOKOYAMA *s. n.* (KANA 193519, 193520); Toyosato, Miyama-cho, Kita-kuwata-gun, 14 Oct., 1994, S. YOKOYAMA *s. n.* (KANA193521-193522); Haiya, Kyohoku-cho, Kita-kuwata-gun, 14 Oct., 1994, S. YOKOYAMA *s. n.* (KANA193523, 1935224); Sasari, Miyama-cho,

Kita-kuwata-gun, 14 Oct., 1994, S. YOKOYAMA *s. n.* (KANA193535, 193536).

Shiga Pref.: Noge, Kutsuki-mura, Takashima-gun, 10 Nov., 1994, M. YAMASHITA *s. n.* (KANA 193078-193082); Utotani, Kutsuki-mura, Takashima-gun, 10 Sep., 1993, S. YOKOYAMA *s. n.* (KANA193558-193560); Kuwabara, Kutsuki-mura, Takashima-gun, 11 Nov., 1994, M. YAMASHITA *s. n.* (KANA193074-193077); Arakawa, Kutsuki-mura, Takashima-gun, 11 Nov., 1994, M. YAMASHITA *s. n.* (KANA193044, 193046); Tochutani, Kutsuki-mura, Takashima-gun, 11 Nov., 1994, M. YAMASHITA *s. n.* (KANA193091-193094); Hosaka, Imazu-cho, 10 Nov., 1994, M. YAMASHITA *s. n.* (KANA193037-193040).

Fukui Pref.: Horikoshi-toge, Natasho-mura, Onyu-gun, 30 Sep. 1991, S. YOKOYAMA *s. n.* (KANA193544-193546); Okusakamoto, Natasho-mura, Onyu-gun, 2 Oct., 1991, S. YOKOYAMA *s. n.*

(KANA172233, 172265, 172271) ; Hitotsutani, Natasho-mura, Onyu-gun, 5 Oct., 1993, S. YOKOYAMA s.n. (KANA 193528-193530), Kochi, Kamina-cho, Onyu-gun, 10 Oct., 1994, S. YOKOYAMA s.n. (KANA193516-193518) ; Kaminemuro, Obama City, 10 Oct., 1994, S. YOKOYAMA s.n. (KANA193563, 193564) ; Ishikannon, Mikata-cho, Mikata-gun, 15 Oct., 1994, S. YOKOYAMA s.n. (KANA193561, 193562) ; Oritotani, Mihama-cho, Mikata-gun, 15 Oct., 1994, S. YOKOYAMA s.n. (KANA193525-193527) ; Kurikaratani, Mihama-cho, Mikata-gun, 15 Oct., 1994, S. YOKOYAMA s.n. (KANA193531-193533), Kuroko National Forest, Tsuruga, 19 Sep., 1994, S. YOKOYAMA s.n. (KANA193547, 193549), Nakaikemi, Tsuruga, 19 Sep., 1994, S. YOKOYAMA s.n. (KANA193542, 193543) ; Tochinoki-toge, Imajo-cho, Nanzyo-gun, 29 Sep., 1994, S. YOKOYAMA s.n. (KANA193551, 193552) ; Amagatani, Fukui, 29 Sep., 1994, S. YOKOYAMA s.n. (KANA193514, 193515) ; Kamiyamanaka, Echizen-cho, Nyu-gun, 29 Sep., 1994, S. YOKOYAMA s.n. (KANA193550).

摘 要

カガノアザミは中井 (1912) によって石川県白峰村谷峠で採集された標本を基にして命名された。

染色体数は既に $2n=34$ の2倍体であることが報告されている (Aishima 1934)。その分布域は北村 (1937) によれば近畿地方の北部から東北地方にかけての主に日本海側の地域とされている。また、門田 (1995) は、関東、中部、近畿地方にかけて分布すると報告している。

しかしながら、筆者らが北陸およびその近隣地域のアザミ属植物を調べている中で、京都府美山町芦生のカガノアザミとされているアザミ集団 (Yasuda and Nagamasu 1995) の染色体数を調べたところ $2n=68$ の4倍体であることがわかった。このアザミはカガノアザミに類似するが、次の形質において区別される。総包の形は前者は鐘状筒型に対して後者は狭筒型、総包片の腺体の形状は狭披針形または線形に対して楕円形である。又、小花の長さ、総包片先端の刺針長、瘦果の長さは前者は後者より長い。

そこで、筆者らは、これを新種としてアシウアザミ *Cirsium ashiuense* S. Yokoyama et T. Shimizu と命名することにした。

このアシウアザミは、これまでに京都府と滋賀県の北部、福井県に分布していることが確認されている。これまで、福井県以南でカガノアザミとされていたものはアシウアザミと混同されていたものである。

(received April 21, 1995; accepted February 13, 1996)