

A New Species of *Parasenecio* (Asteraceae), *P. ogamontanus*, from Akita Prefecture, Northern Japan

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A new species of *Parasenecio*, *P. ogamontanus* Kadota, is described here. *Parasenecio ogamontanus* is distinguished from *P. chokaiensis* (Kudo) Kadota, comb. nov. by having winged petioles with slightly but clearly auriculate bases, depressed pentagonal-reniform leaf blades with acute lobe-apices and with denticulate margin and 5–7 involucre phyllaries; from *P. hayachinensis* (Kitam.) Kadota, stat. nov. also by depressed pentagonal-reniform leaf blades with acute lobe-apices. *Parasenecio ogamontanus* is endemic to Oga Peninsula, Akita Pref., northern Japan, and occurs under *Fagus crenata* woodland.

Key words: Japan, new species, *Parasenecio chokaiensis*, *Parasenecio hayachinensis*, *Parasenecio ogamontanus*.

During a botanical survey in the Oga Mountains of Oga Peninsula, Akita Prefecture, northern Japan, I encountered an unknown plant of *Parasenecio* (Asteraceae) in the Ashinokura-sawa Gorge of the mountains in September of 2004. The leaf-shape of was characterized the plant in question: leaf blades were depressed pentagonal-reniform, very shallowly divided into five lobes with short, triangular and acute. Species with such leaf blades were not hitherto known in the genus *Parasenecio*. The plants grew on rich humus under *Fagus crenata* forests and reached to only 80 cm tall at highest. As *Parasenecio* plants generally become more than 1 m tall (frequently up to 3 m tall or more) on the Japan Sea side of Tohoku District, I had the impression that the Oga plants were significantly smaller than the known taxa of the genus from this region. As a result it was clear that the plants belong to a new species.

Taxonomic treatment

Parasenecio W. W. Sm. & J. Small in Trans. & Proc. Bot. Soc. Edin. **23**: 93 (1922) – C. Jeffrey & Y. L. Chen in Kew Bull. **39**: 209 (1984).

Cacalia auct. non L.: Maxim. in Bull. Acad. Imp. Sci. St.-Pétersb. **19**: 475 (1874) – Kitam. in Acta Phytotax. Geobot. **7**: 236 (1938); Comps. Jap. **3**: 202 (1942); Col. Illust. Herb. Pl. Jap. **1**: 46 (1957); Wild Flow. Jap. **3**: 178 (1981) – H. Hara, Enum. Sperm. Jap. **2**: 146 (1952) – Ohwi, Fl. Jap. 1337 (1965) – H. Koyama in Mem. Fac. Sci., Kyoto Univ., ser. Biol. **2**: 164 (1969) – Ohwi (Kitag.), New Fl. Jap. 1486 (1992).

TYPE: *P. forrestii* W. W. Sm. & J. Small. Sect. **Koyamacalia** (H. Robins. & Brettel) Y. L. Chen, Fl. Reipubl. Popul. Sin. **77**(1): 28 (1999) – Genus *Koyamacalia* H. Robins. & Brettel in Phytologia **27**: 270 (1973).

Cacalia L. Sect. *Eucacalia* DC., Prodr. **6**: 327 (1837); Kitam., Compos. Jap. **3**: 203

(1942), p. p. – *Cacalia* Sect. *Cacalia*: H. Koyama in Mem. Facul. Sci. Kyoto Univ., ser. Biol., 2: 169 (1969).

Sect. *Parasenecio*: H. Koyama, Fl. Jap. **IIIb**: 49 (1995).

TYPE: *P. hastatus* (L.) H. Koyama.

Ser. **Koyamacalia**

Cacalia Sect. *Eucacalia* DC. Ser. *Candidae* Kitam., Compos. Jap. **3**: 203 (1937), p. p. – Ser. *Candidae* (Kitam.) Y. L. Chen, Fl. Reipubl. Popul. Sin. **77**(1): 30 (1999).

Parsenecio ogamontanus Kadota, sp. nov. [Figs. 1, 2]

Herba perennis 35–80 cm alta. Radix tenuis horizontalis 3–5 mm in diametro. Caulis suberectus, rectus sed superne valde flexuosus, simplex, glaber, teretus, striatus, basi 2–4 mm in diametro. Folia basalia emarcida sub anthesi. Folia caulina 3–6, luteo-virida, herbacea, laminis depressis pentagono-reniformibus 6–12 cm longis 9–16 cm latis leviter 5-lobis, venis palmatis, grosse dentatis basi late cordatis, lobis brevioribus triangularibus acutis, petiolis 3.5–8 cm longis alatis basi parum auriculatis. Flores in Septembris. Capitula 4–20 vel plus in racemoso laxo, obliqua vel nutantia, flosculis 5–9, pedunculis 3–17 mm longis sparse arachnoideis et pubescentibus, foliis subtensis 1–2 spathulatis 2–3 mm longis. Involucra anguste cylindrica ca. 10 mm longa, 3–4 mm in diametro, glabra, phyllariis 5–6(–7) herbaceis ca. 10 mm longis 2–3 mm latis anguste ovato-lanceolatis, acuminatis vel acutis. Corollae luteo-alba 7 mm longa, lobis 1 mm longis, faucibus 4 mm longis, tubis 2 mm longis. Achenia 6–7 mm longa valde striata, pappis 5–6 mm longis albis.

TYPE: JAPAN: Honshu; Akita Pref., Oga-shi, Oga Peninsula, Mt. Kenashiyama, Ashinokura-sawa Gorge, alt. 320 m, 28 September 2004, Y. Kadota 044001 (TNS 733962–holotype, Fig. 1; TNS 733961, 733963, 733966–isotypes).

A medium-sized perennial, 35–80 cm tall. Rootstock slender, running horizontally, 3–5 mm in diameter, with fibrous roots. Stem suberect, straight but slightly zigzag in the upper parts, simple, glabrous, terete, striate, 2–4 mm in diameter at base. Basal leaves withering at anthesis. Cauline leaves 3–6, yellowish green above, herbaceous; blades depressed reniform-pentagonal, 6–12 cm long, 9–16 cm wide, wider than long, very shallowly 5-lobed with short triangular acute lobes, with palmate veins, coarsely dentate, broadly cordate at base, glabrous on both sides or sparingly pubescent with brownish multicellular hairs on the adaxial side and along margin; petioles 3.5–8 cm long, glabrous, winged, slightly but clearly auriculate at base. Flowering in September. Capitula 4–20 or more in a loose raceme or small panicle, oblique to nodding; florets 5–9; subtending leaves 1–2, spathulate, 2–3 mm long; peduncles 3–17 mm long sparingly arachnoid and pubescent with light brownish multicellular hairs, bracteate with linear to lanceolate bracts 1–2 mm long. Involucres narrowly cylindrical, ca. 10 mm long, 3–4 mm in diameter, glabrous; phyllaries 5–6(–7), herbaceous, ca. 10 mm long, 2–3 mm wide, narrowly ovate-lanceolate, acuminate to acute at apex. Collorae white tinged with yellow, 7 mm long; lobes 1 mm long; throats 4 mm long; tubes 2 mm long. Achenes cylindrical, 6–7 mm long, ca. 0.5 mm in diameter, prominently furrowed; pappi white, 5–6 mm long.

Japanese name: Oga-kômorî (nom. nov.).

Other specimens examined: JAPAN: Honshu; Akita Pref., Oga-shi, Oga Peninsula, Mt. Kenashiyama, Ashinokura-sawa Gorge, 22 Aug. 2004, Y. Horii 2717 (TNS 748359); Ashinokura-sawa Gorge, 26 Sept. 2004, Y. Horii 2700, 2701, 2704 (TNS 748345, 748350, 748351).

Distribution: Oga Mountains, Oga Peninsula (Akita Pref.). Endemic.

Parasenecio ogamontanus is unique in having such cauline leaves as the leaf blades



Fig. 1. Type specimen of *Paraseneoia ogamontanus* Kadota (JAPAN: Honshu; Akita Pref., Oga-shi, Oga Peninsula, Mt. Kenashiyama, Ashinokura-sawa Gorge, alt. 320 m, 28 September 2004, Y. Kadota 044001 (TNS 733962–holotype). Left corner inset shows auriculate petiole base.



Fig. 2. Habit of *Parasenecio ogamontanus* Kadota (JAPAN: Honshu; Akita Pref., Oga-shi, Oga Peninsula, Mt. Kenashiyama, Ashinokura-sawa Gorge (on 26 September 2004, courtesy of Mr. Y. Fujita).

are depressed pentagonal-reniform in outline and are very shallowly 5-lobed with short and acute lobes. No species with such leaf blades have yet been reported in *Parasenecio* (Kitamura 1938, Koyama 1967, 1968a,

1968b, 1969, 1978a, 1978b, 1978c, 1995, Jeffrey and Y. L. Chen 1984, Chen 1999).

Parasenecio ogamontanus is morphologically similar to *P. chokaiensis* (Kudo) Kadota [**comb. nov.**; basionym: *Cacalia*

chokaiensis Kudo in Bot. Mag. Tokyo **29**: 227 (1915) – *C. hastata* L. subsp. *orientalis* Kitam. var. *chokaiensis* (Kudo) Kitam. in Acta Phytotax. Geobot. **7**: 246 (1938) – *Parasenecio hastata* (L.) H. Koyama subsp. *tanakae* (Franch. & Sav.) H. Koyama var. *chokaiensis* (Kitam.) H. Koyama, Fl. Jap. **IIIb**: 52 (1995)] but the former is distinguished from the latter by having 1) winged petioles slightly but clearly auriculate at base, 2) depressed pentagonal-reniform, denticulate cauline leaf blades with acute lobes, 3) 5–7 involucrel phyllaries and 4) 8–13 florets. In the protologue Kudo (1915) described the achene size of this species as “*Achenia linearis*, 1.5 mm longa, glabra.”

However, *P. chokaiensis* usually has mature achenes 4.5–7 mm long.

Parasenecio hayachinensis (Kitam.) Kadota [stat. nov.; basionym: *Cacalia hastata* L. subsp. *orientalis* Kitam. var. *hayachinensis* Kitam. in Acta Phytotax. Geobot. **14**: 180 (1952) – *Parasenecio hastata* (L.) H. Koyama subsp. *orientalis* (Kitam.) H. Koyama var. *hayachinensis* (Kitam.) H. Koyama, Fl. Jap. **IIIb**: 52 (1995)] is similar to *P. ogamontanus* in having winged petioles with auriculate bases, the number of phyllaries (5–6), the number of florets per head (8), and the size of achenes (6.5–8 mm long). However, the former is clearly distinguished from the latter

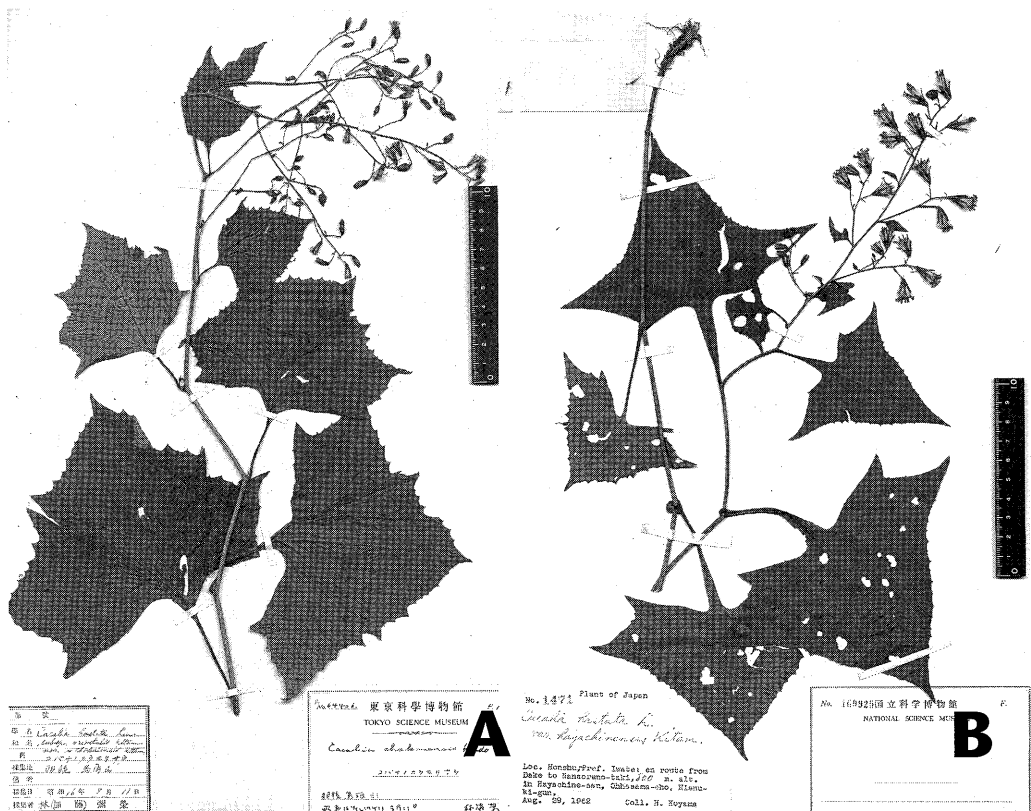


Fig. 3. Comparison in the shape of leaf blades between *Parasenecio chokaiensis* (A) and *P. hayachinensis*. A. Mt. Chôkaisen (Y. Hayashi s. n., TNS 64406). B. Mt. Hayachinesan (H. Koyama 1471, TNS 169925).

by triangular hastate leaf blades with acuminate apices.

Parasenecio nikomontanus (Matsum.) H. Koyama resembles *P. ogamontanus* in having depressed cauline leaf blades. However, *P. nikomontanus* is discriminated from *P. ogamontanus* by the shape of inflorescence (corymbose vs. racemose), petioles (wingless and not auriculate vs. winged and slightly but clearly auriculate), leaf lobes (acuminate vs. acute) and the diameter of involucre (1–2 mm vs. 3–4 mm).

Parasenecio ogamontanus occurs under *Fagus crenata* woodlands exclusively in the Oga Mountains, Oga Peninsula, Akita Prefecture. The Oga Mountains facing the Japan Sea are segregated by ca. 50 km in the east from the central mountains (the Ôwu Mountain Range) of Tohoku District, northern Japan, and the flora of the Oga Mountains is slightly but significantly different from that of the Ôwu Range: e. g., the flora of the Oga Mountains includes at least two endemic species of the genus *Cirsium* of the family Asteraceae (*C. horii* and *C. ashinokuraense*; Kadota 2005). Three taxa of *Parasenecio*, *P. chokaiensis*, *P. hastatus* (L.) H. Koyama subsp. *tanakae* (Franch. & Sav.) H. Koyama and *P. nikomontanus*, are distributed in the inland region of Akita Prefecture these three taxa have not been reported from the Oga Mountains (Horii pers. comm.).

I am deeply indebted to Mr. Yûjirô Horii, Akita Prefecture, for his valuable information on *Parasenecio ogamontanus* from Oga Peninsula, Oga-shi, Akita Prefecture and his guidance to the localities of *P. ogamontanus* in the Peninsula; to Mr. Yoshinari Fujita and Ms. Toshie Sasaki, Akita Prefecture, for their providing the photographs of *P. ogamontanus* and field assistance in Oga Peninsula. I should also like to thank the Curators of the Herbaria (KYO, TI and TNS).

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門田裕一：秋田県産コウモリソウ属（キク科）の一新種，オガコウモリ

秋田県男鹿半島からキク科コウモリソウ属の new species を，オガコウモリ *Parasenecio ogamontanus* Kadota として記載した。オガコウモリは秋田県在住の堀井雄治郎氏によって発見された植物である。オガコウモリの最も著しい特徴はその葉形にある。即ち，葉身は偏五角状腎形で，極く浅く五裂し，裂片の先端は短く尖り，他の種のように先端が尾状に長く尖らない。オガコウモリはコバナノコウモリ（チョウカイコウモリ）*P. chokaiensis* (Kudo) Kadota に最も近い。オガコウモリとコバナノコウモリとの区別点は，上記の葉形の違いの他，次の点で異なっている；1) 葉柄に翼があり，わずかではあるが明瞭に抱茎する，2) 茎葉の鋸歯は低平であり，3) 総苞片は5–6(–7)個で，4) 頭花あたりの小花数は5–9個と少ない。また，葉柄に翼があり，基部が茎を抱く点ではハヤチネコウモリ *P. hayachinensis* (Kitam.) Kadota に似ているが，ハヤチネコウモリの葉身は葉裂片の先端が尾状に長く尖り，オガコウモリとは明瞭に区別できる。オオカニコウモリ *P. nikomontanus* (Matsum.) H. Koyama は葉身が偏五角状腎形となる点でオガコウモリに似ているが，花序が散房状になる別の一群の植物であり，この他に葉柄に翼がなくかつ抱

茎せず，総苞が細い点でも異なっている。

オガコウモリはコウモリソウ属の日本海側地域に分布する種としては全体的に小型で華奢な植物体をもつ。オガコウモリは男鹿半島毛無山，芦ノ倉沢の特産植物であり，この沢のブナ林下に生育しているが個体数は多くない。秋田県の内陸部にはコバナノコウモリの他，イヌドウナ *P. hastatus* (L.) H. Koyama subsp. *tanakae* (Franch. & Sav.) H. Koyama とオオカニコウモリが分布しているが，これらは男鹿半島には見いだされていない（堀井私信）。

Cacalia L. はキク科コウモリソウ属の属名として我々が永い間親しんできた名前であるが，東アジアのコウモリソウ属植物は *Parasenecio* W. W. Sm. & J. Small としてまとめられた (Jeffrey 1979, 1992, Jeffrey and Chen 1984, Chen 1999)。日本産の種は既に小山博滋氏によって *Parasenecio* の下に組み合わせがなされている (Flora of Japan, vol. **IIIb**; Koyama 1995)。しかし，この属名は男性であるため，そこに挙げられている種形容語（亜種名，種小名，変種名）の語尾は「-a」を「-us」と読み替える必要がある。

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