

Hainanecio, a new genus of the Senecioneae, Asteraceae from China

Ying LIU² and Qin-Er YANG^{1,*}

¹Key Laboratory of Plant Resources Conservation and Sustainable Utilization, South China Botanical Garden, Chinese Academy of Sciences, Xingke Road, Tianhe District, Guangzhou 510650, China

²State Key Laboratory of Systematic and Evolutionary Botany, Institute of Botany, Chinese Academy of Sciences, Beijing 100093, China

(Received March 31, 2010; Accepted June 10, 2010)

ABSTRACT. *Hainanecio* Y. Liu & Q. E. Yang, a new genus of Senecioneae, Asteraceae, from Hainan Island, China, is described based on *Sinosenecio hainanensis* (Chang & Tseng) C. Jeffrey & Y. L. Chen. Distinguishing characters include pinnately-veined, ovate to obovate leaves, hemispherical involucre, white florets, apically acuminate and often 2-denticulate rays, basic chromosome number of $x = 29$, typically triporate pollen, and helianthoid type of pollen wall ultrastructure.

Keywords: Asteraceae; *Hainanecio*; New genus; Senecioneae; *Sinosenecio*; Taxonomy.

INTRODUCTION

Hainanecio Y. Liu & Q. E. Yang, based on *Sinosenecio hainanensis* (Chang & Tseng) C. Jeffrey & Y. L. Chen from Hainan Island, China, is described as new. Our recent systematic study of *Sinosenecio* B. Nord. (Senecioneae-Asteraceae) has indicated that this enigmatic species has a series of unusual morphological, cytological, and palynological characters, and thus definitely does not belong in the genus *Sinosenecio*.

Hainanecio hainanensis, endemic to Hainan Island, China (Figure 1), was considered to be the southernmost occurring species of *Sinosenecio* (Jeffrey and Chen, 1984; Chen, 1999). Originally described as *Senecio hainanensis* by Chang and Tseng (1974), it was transferred to *Sinosenecio* by Jeffrey and Chen (1984) based on its scapigerous habit, strictly polarized anther endothelial cell wall thickenings, and tumid epappose achenes. Jeffrey and Chen (1984) regarded those characters in combination as characteristic of *Sinosenecio*, although they noted simultaneously that the species was unusual in the genus in its pinnately veined, ovate to obovate leaves. The species has since been noted as anomalous within *Sinosenecio* (Chen, 1999; Zhang et al., 2008), but has until now been included within the genus.

Our field and herbarium observations have confirmed and increased the number of morphological differences between *Hainanecio hainanensis* and species of *Sinosenecio*:

pinnately-veined, ovate to obovate leaves (vs. palmately-veined, rounded, reniform to ovate or deltoid), hemispherical involucre (vs. obconic or campanulate), white florets (vs. yellow), and apically acuminate, often 2-denticulate rays (vs. apically obtuse and 3-denticulate rays). Among these characters, the color of the flowers is worthy of special note. In the protologue, Chang and Tseng (1974) described the flowers as being ‘*probabiliter aurantiaceis*’ (probably orange), but our field observations at two sites on Hainan (including the type locality) revealed the flowers to be white (Figure 2). All species of *Sinosenecio* have yellow flowers (Jeffrey and Chen, 1984; Chen, 1999), as do all the Chinese species of *Senecio*, in which the species was originally described (Jeffrey and Chen, 1984; Chen, 1999).



Figure 1. Distribution of *Hainanecio hainanensis* (▲).

*Corresponding author: E-mail: qeyang@scib.ac.cn; Tel: +86-20-37094273; Fax: +86-20-37094273.

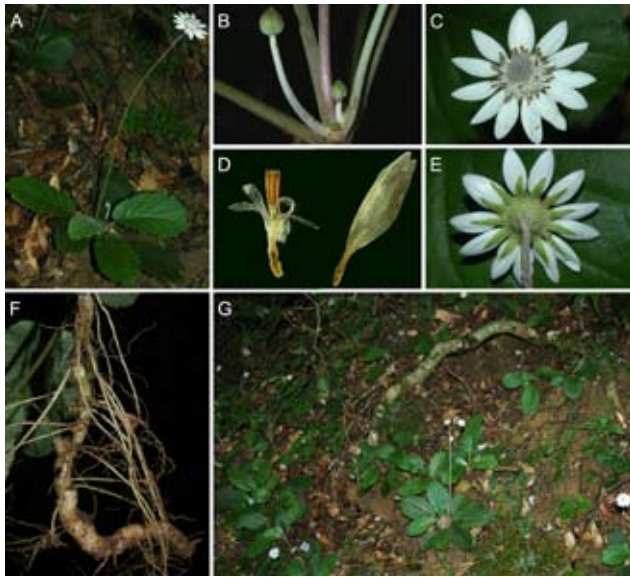


Figure 2. *Hainanecio hainanensis*. A, Habit; B, Young capitula; C, Capitulum (top view); D, Florets (left: disc floret; right: ray floret); E, Capitulum (bottom view), showing phyllaries; F, Rhizome; G, Habitat. (All from Y. Liu 2008044, IBSC, PE).

Hainanecio hainanensis has truncate style arms with marginal and apical papillae (Figure 3A), polarized and radial endothelial cell wall thickenings, with the polarized ones being predominant (Figure 3B), and a short, cylindrical filament collar (Figure 3C). These features have been previously observed in species of *Sinosenecio* (Nordenstam, 1978; Jeffrey and Chen, 1984; Liu, 1999; Zhang et al., 2008; Liu et al., 2009). Jeffrey and Chen (1984) reported the anther endothelial cell wall thickenings of *H. hainanensis* as being strictly polarized, but this was not confirmed in our study. Most notably, the anther apical appendage of *H. hainanensis* is ovoid and bubble-like in shape, with the abaxial cells obviously enlarged (Figure 3D). In all species of *Sinosenecio* the anther apical appendages are ovoid, but not bubble-like, with the abaxial cells not enlarged (Liu and Yang, in prep.).

During our study, the distinctive nature of *Hainanecio hainanensis* was strongly reinforced by observations of the chromosomes and pollen.

The mitotic chromosome number of *Hainanecio hainanensis* is $2n = 58$ (Figure 3E), with a basic number of $x = 29$. The chromosomes range from ca. 1.8 to ca. 0.8 μm from the largest to the smallest. In contrast, the basic chromosome numbers in the species of *Sinosenecio* are predominantly $x = 24$ and 30, rarely 13, and the chromosomes are larger, usually ranging from ca. 4.0 to ca. 1.2 μm (Liu and Yang, in prep.).

All the species of *Sinosenecio* examined, except *Hainanecio hainanensis*, have the same pollen external morphology under scanning electron microscopy (SEM) (Figures 4-7). The pollen grains are spheroid, tricolporate, echinate, with the tectum coarse and not perforate (Figure

7B, D). Surprisingly, the pollen grains of *H. hainanensis* are typically triplicate, lacking the three noticeably wide colpi that are always present in pollen grains in *Sinosenecio* (Figure 7E), and the tectum is smooth and perforate (Figure 7F). The pollen grains of other genera in the tribe Senecioneae have all been reported to be tricolporate (Stix, 1960; Skvarla and Turner, 1966; Skvarla et al., 1977; Vincent and Norris, 1989; Liu, 2002). Furthermore, SEM shows that the pollen grains of *H. hainanensis* are obviously less densely echinate than those of other species of *Sinosenecio* examined. Under transmission electron microscopy (TEM), the structure of the pollen wall of all species of *Sinosenecio*, except *H. hainanensis*, are of the senecioid type (absence of internal foramina, Figure 8A-I), the commonest pollen type within the tribe Senecioneae (Nordenstam, 2007; Nordenstam et al., 2009). Unexpectedly, the structure of the pollen wall of *H. hainanensis* is of the helianthoid type (presence of internal foramina, Figure 8J-L). In the Senecioneae, the helianthoid pollen type has been reported previously only in a few genera (Nordenstam, 2007; Nordenstam et al., 2009): *Doronium* (Skvarla et al., 1977; Liu, 2000) from the subtribe Doronicinae, *Farfugium* (Liu, 2000), *Telanthophora* and *Robinsonecio* (Bain et al., 1997) from the subtribe Tus-silaginatae, *Pericallis* (Skvarla et al., 1977) and *Packeria* (Skvarla et al., 1977; Bain and Walker, 1995) from the subtribe Senecioninae. Obviously, *H. hainanensis* cannot be referred to any of these six genera because of the remarkable differences in other characters.

Recent molecular phylogenetic studies, which did not sample *Hainanecio hainanensis*, have shown that *Sinosenecio* is a polyphyletic group (Pelser et al., 2007; Wang et al., 2009). Some species of *Sinosenecio* were found to be nested in a well supported clade with *Tephroses* and

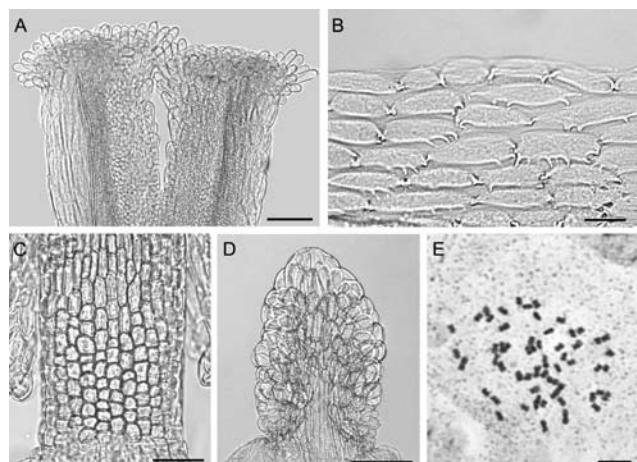


Figure 3. Floral micromorphological characters (A, B, C, D) and mitotic metaphase chromosomes (E) of *Hainanecio hainanensis*. A, Style-arms; B, Anther endothelial cell wall thickenings; C, Filament collar; D, Anther apical appendage; E, Mitotic metaphase chromosomes ($2n = 58$) (all from Y. Liu 2008044, IBSC, PE). Scale bars: A, D = 100 μm ; B = 25 μm ; C = 50 μm ; E = 5 μm .

Nemosenecio ('tephroseroid' clade = subtribe Tephroseridinae), whereas others clustered with typical genera of Tussilagininae ('tussilaginoid'), such as *Cremanthodium*, *Farfugium*, *Ligularia*, *Parasenecio*, *Petasites*, *Syneilesis*, and *Tussilago*. Wang et al. (2009) have discussed in detail the strong incongruence between the ITS phylogeny and

the generic delimitation in the *Nemosenecio-Sinosenecio-Tephroseris* assemblage, pointing out that neither *Sinosenecio* nor *Tephroseris* as currently construed forms a monophyletic group. Both are awaiting a generic recircumscription. The results of our phylogenetic analysis of the ITS data set of *Sinosenecio*, which included a broader taxon sampling, have also revealed the polyphyly of *Sinosenecio* and indicated that *H. hainanensis* is a member of subtribe Senecioninae, only distantly related to the species of *Sinosenecio*, some of which may belong to the typical subtribe Tussilagininae and others may belong to subtribe Tephroseridinae (Wang et al., 2009; Liu and Yang, unpubl.). The nearest likely relatives of *Hainanecio* within subtribe Senecioninae could not be determined with certainty in our analysis, which indicates that *H. hainanensis* shows no close affinities with any genera sampled. *Hainanecio* may better be regarded as a fairly isolated member of the subtribe until further systematic data are available to elucidate its affinities.

Several lines of evidence (morphological, palynological, cytological, and molecular), therefore, strongly support the segregation of *Hainanecio hainanensis* as a distinct genus. *Hainanecio* is easily distinguished from *Sinosenecio* through a series of characters as given in Table 1.

Hainanecio Y. Liu & Q. E. Yang, gen. nov.—TYPE: *Senecio hainanensis* Chang & Tseng in Fl. Hainan. 3: 585. 1974. 海南菊屬

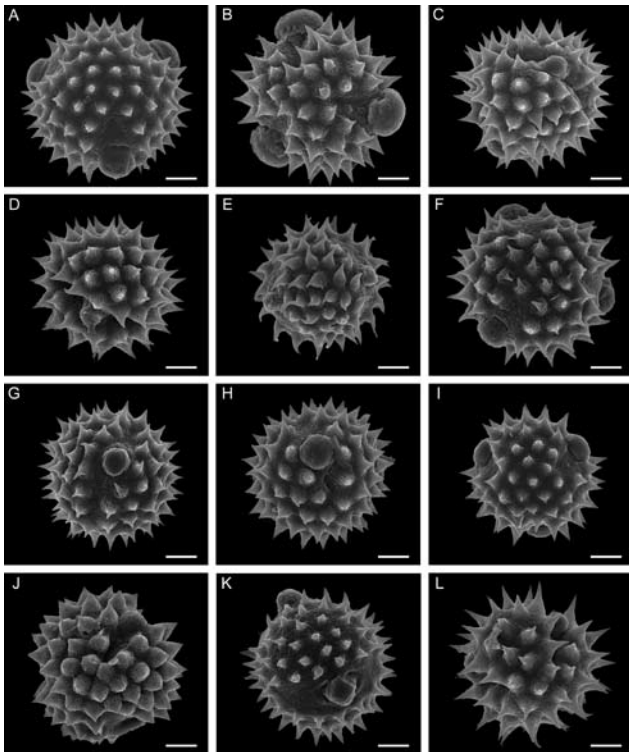


Figure 4. Scanning electron micrographs of pollen grains in species of *Sinosenecio* with a basic chromosome number of $x = 24$ (rarely 13). A, *S. baojingensis* (Q. E. Yang et al. 554, IBSC, PE); B, *S. euosmus* (Q. E. Yang et al. 992, IBSC, PE); C, *S. globigerus* (Q. E. Yang et al. 575, IBSC, PE); D, *S. guangxiensis* (Guangxi Exped. 4257, PE); E, *S. hupingshanensis* (Q. E. Yang et al. 613, IBSC, PE); F, *S. jishouensis* (Q. E. Yang et al. 544, IBSC, PE); G, *S. jiuhuashanicus* (Y. Liu & T. Deng 2008019, IBSC, PE); H, *S. koreanus* (Komarov 1601, PE); I, *S. oldhamianus* (Yang et al. 683, IBSC, PE); J, *S. palmatilobus* (Q. E. Yang et al. 673, IBSC, PE); K, *S. palmatisectus* (Y. Liu 2008006, IBSC, PE); L, *S. saxatilis* (Y. Liu 2008025, IBSC, PE). Scale bar = 5 μm .

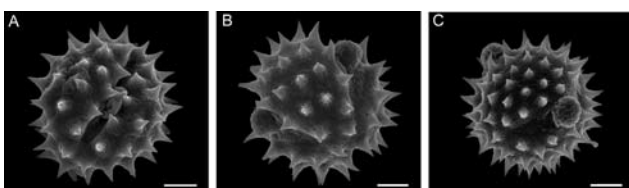


Figure 5. Scanning electron micrographs of pollen grains in species of *Sinosenecio* with a basic chromosome number of $x = 24$ and in *Tephroseris changii*, a species that may better be transferred to *Sinosenecio*. A, *S. septilobus* (Y. Liu & T. Deng 2008040, IBSC, PE); B, *S. sungpanensis* (Q. E. Yang et al. 1042, IBSC, PE); C, *Tephroseris changii* (Y. Liu & T. Deng 2008028, IBSC). Scale bar = 5 μm .

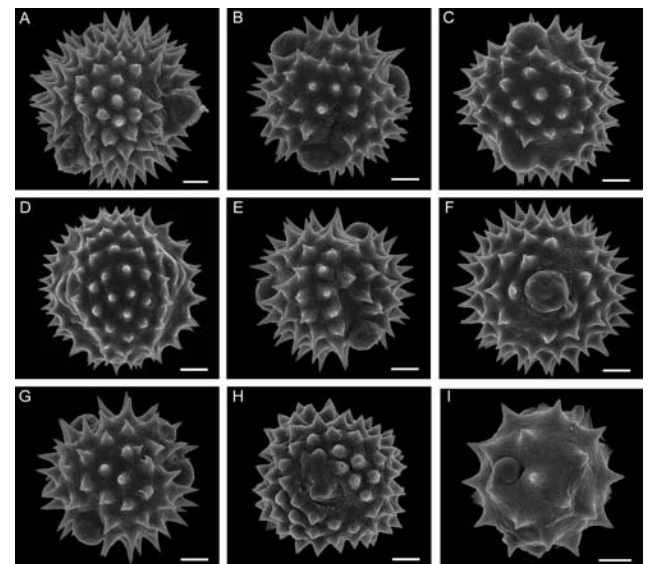


Figure 6. Scanning electron micrographs of pollen grains in species of *Sinosenecio* with a basic chromosome number of $x = 30$ and in *Hainanecio hainanensis*. A, *S. cyclaminifolius* (Q. E. Yang et al. 761, IBSC, PE); B, *S. dryas* (Q. E. Yang et al. 851, IBSC, PE); C, *S. eriopodus* (Q. E. Yang et al. 641, IBSC, PE); D, *S. hederifolius* (Y. Liu 2008007, IBSC, PE); E, *S. ligularioides* (Q. E. Yang et al. 948, IBSC, PE); F, *S. subcoriaceus* (Q. E. Yang et al. 701, IBSC, PE); G, *S. subrosulatus* (Q. E. Yang et al. 1014, IBSC, PE); H, *S. villiferus* (Q. E. Yang et al. 771, IBSC); I, *H. hainanensis* (Y. Liu 2008044, IBSC, PE). Scale bar = 5 μm .

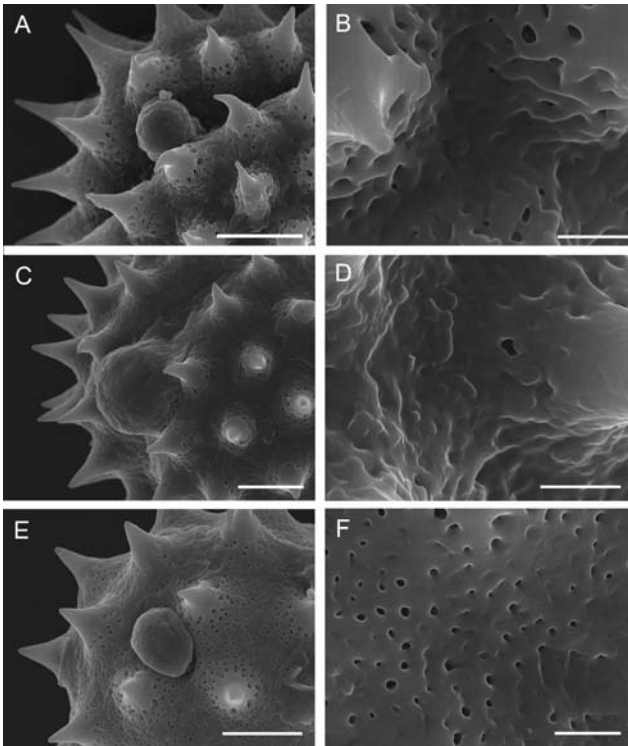


Figure 7. Scanning electron micrographs of pollen grains in *Sinosenecio saxatilis* (A, B), *S. dryas* (C, D) and *Hainanecio hainanensis* (E, F), showing germination apertures and tectum surface. A, Aperture with colpus; B, Tectum, coarse and not perforate; C, Aperture with colpus; D, Tectum, coarse and not perforate; E, Aperture, without colpus; F, Tectum, smooth and perforate. (A, B from *Y. Liu 2008025*, IBSC, PE; C, D from *Q. E. Yang et al. 851*, IBSC, PE; E, F from *Y. Liu 2008044*, IBSC, PE). Scale bars: A, C, E = 5 μ m; B, D, F = 1 μ m.

Herba perennis. Rhizoma incrassatum. Folia rosulata, longe petiolata; lamina ovata usque obovata, pinnatinnervis. Capitula solitaria, terminalia; involucrem hemisphaericum, ecalyculatum; phyllaria ca. 13, uniseriata, lanceolata, apice acuminata. Flores radii ca. 13, ligulis albis, elliptico-lanceolatis, apice acuminatis, saepe bilobatis. Flores disci numerosi, albi. Antherae basi rotundatae; appendix apicalis ovoidea, cellulis abaxialibus conspicue amplicatis; endothecii cellulae parietes horizontales solum vel omnes sparse noduliferi; filamentum cylindraceum. Pollinis grana helianthoidea, triporata, colpis nullis. Styli rami apice truncati. Achaenia obovoidea. Pappus nullus.

Etymology. We name this “senecioid” genus “*Hainanecio*”, because it is endemic to Hainan, the second largest island of China.

Distribution. Endemic to Hainan Island, China.

Hainanecio contains only the single species.

Hainanecio hainanensis (Chang & Tseng) Y. Liu & Q. E. Yang, comb. nov. Basionym: *Senecio hainanensis* Chang & Tseng in *Fl. Hainan*. 3: 585. 1974.—TYPE: CHINA. Hainan, Qiongzong County, Limu Ling,

1956, fl., *S. H. Chun 10928* (holotype, IBSC!). Synonym: *Sinosenecio hainanensis* (Chang & Tseng) C. Jeffrey & Y. L. Chen in *Kew Bull.* 39: 238. 1984. 海南菊

Figure 2

Rhizomes stout, to 10 mm in diameter. Stem 1-several, simple. Leaves several, radical, petiolate; petiole 5-10 cm long, sparsely lanate or glabrescent; lamina 6-12 \times 4-8 cm, entire or shallowly repand-dentate, sparsely or densely white tomentose on both surfaces, later more or less glabrescent or sparsely puberulous, pinnately veined; midrib on lower surface prominent. Capitula solitary, terminal, 2-3 cm across including rays; scape distally 4-8-bracteolate. Involucres hemispherical, ca. 8 mm long, 12 mm broad, ecalyculate; receptacle subglabrous. Phyllaries ca. 13, uniseriate, lanceolate, apex acuminate. Ray florets 10-13, corolla tube 3 mm long; rays white, elliptic-oblong, 12-15 \times 3-4 mm, apex acuminate, often 2-denticulate. Disc florets many; corolla white, campanulate, 3.5 mm long, tube 2 mm long; lobes oblong-lanceolate, 2 mm long. Anthers rounded at base; apical appendage ovoid, with abaxial cells obviously enlarged; endothecial cell wall thickenings polarized and radial, with polarized thicken-

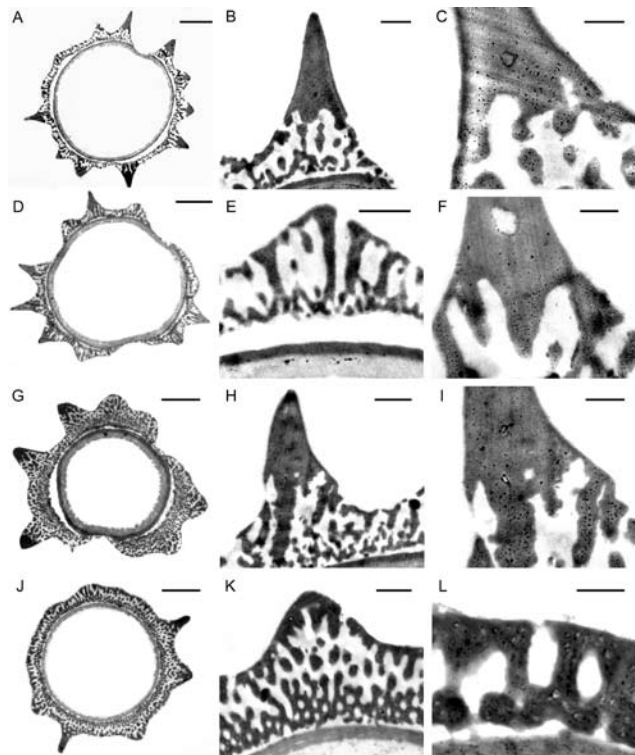


Figure 8. Transmission electron micrographs of pollen walls in three *Sinosenecio* species and *Hainanecio hainanensis*. A, B and C, *S. euosmus* (*Q. E. Yang et al. 883*, IBSC, PE), senecioid wall structure (absence of internal foramina); D, E and F, *S. jihuashanicus* (*Y. Liu & T. Deng 2008019*, IBSC, PE), senecioid wall structure; G, H and I, *S. subrosulatus* (*Yang et al. 1014*, IBSC, PE), senecioid wall structure; J, K and L, *S. hainanensis* (*Liu 2008044*, IBSC, PE), helianthoid wall structure (presence of internal foramina). Scale bars: A, D, G, J = 5 μ m; B, E, H, K = 1 μ m; C, F, I, L = 0.5 μ m.

Table 1. Comparison of *Hainanecio* and *Sinosenecio*.

	<i>Hainanecio</i>	<i>Sinosenecio</i>
Habit	Perennial herb	Perennial or rarely biennial herb
Leaf	Radical	Radical or cauline
Leaf shape	Ovate to obovate	Rounded, reniform to ovate or deltoid
Leaf veining	Pinnately veined	Palmately or rarely pinnately veined
Capitulum	Radiate	Radiate
Floret color	White	Yellow
Ray florets	Apically acuminate, often 2-denticulate	Apically obtuse, 3-denticulate
Pollen germination aperture	Triporate	Tricolporate
Pollen wall ultrastructure	Helianthoid	Senecioid
Endothelial cell wall thickenings	Polarized and radial, with polarized ones predominant	Strictly polarized, or polarized and radial
Filament collar	Cylindrical	Cylindrical
Style-arms	Truncate	Truncate or slightly convex
Anther apical appendage	Ovoid and bubble-like in shape, with the abaxial cells obviously enlarged	Ovoid, but not bubble-like in shape, with the abaxial cells not enlarged
Achene	Obovoid	Cylindrical or obovoid-cylindrical
Pappus	Absent	Present or absent
Basic chromosome number (<i>x</i>)	29	13, 24, 30
Distribution	Hainan Island, China	Mainland China

ings predominant. Filament collar cylindrical. Pollen triporate, helianthoid. Style arms truncate. Achenes obovoid, 3 mm long, glabrous. Pappus absent.

Additional specimens examined. **CHINA.** Hainan, Qiongzong County, Limu Ling, alt. 900-1,200 m, in dense forests, 5 Jul 1960, *anonymous collector* (*Herb. No. 323201*) (IBSC); Qiongzong County, Limu Ling, alt. 1,300 m, in dense forests, 27 Jul 2008, *fl.*, *Y. Liu 2008044* (IBSC, PE); Changjiang County, Bawang Ling, alt. 1,300 m, in dense forests, *G. A. Fu 6015* (IBSC); Changjiang County, Bawang Ling, Laodian, alt. 1,200 m, in dense forests, 27 Jul 2008, *fl.*, *Y. Liu 2008043* (IBSC, PE); Baoting County, Baima Ling, in dense forests, 14 Oct 1936, *X. Q. Liu 27992* (IBSC).

Phenology. Flowering July to August, fruiting September to November.

Distribution and habitat. Known from three populations on Hainan Island, China; shady places in broadleaved evergreen forests; 900-1,200 m above sea level.

Acknowledgments. We are very grateful to Dr. Bertil Nordenstam and Dr. David Boufford for their invaluable comments on the manuscript. This work was supported by the Knowledge Innovation Project of the Chinese Academy of Sciences (KZCX2-YW-415, KSCX2-YW-Z-0918) and National Natural Science Foundation of China (Grant no. 30970183).

LITERATURE CITED

- Bain, J.F. and J. Walker. 1995. A comparison of the pollen wall ultrastructure of aureoid and non-aureoid *Senecio* species (Asteraceae) in North America. *Pl. Syst. Evol.* **195**: 199-207.
- Bain, J.F., B.S. Tyson, and D.F. Bray. 1997. Variation in pollen wall ultrastructure in New World Senecioneae (Asteraceae), with special reference to *Packera*. *Can. J. Bot.* **75**: 730-735.
- Chang, C.C. and Y.C. Tseng. 1974. *Senecio* L. In Anonymous (ed.), *Flora Hainanica*, Vol. 3. Science Press, Beijing, pp. 585.
- Chen, Y.L. 1999. *Sinosenecio* B. Nord. In Anonymous (ed.), *Flora Reipublicae Popularis Sinicae*, Vol. 77(1). Science Press, Beijing, pp. 101-141.
- Jeffrey, C. and Y.L. Chen. 1984. Taxonomic studies on the tribe Senecioneae (Compositae) of Eastern Asia. *Kew Bull.* **39**: 205-446.
- Liu, J.Q. 1999. Systematics of the Tribe Senecioneae Subtribe Tussilaginatae (Asteraceae) of the Eastern Asia. Ph.D. thesis, Institute of Botany, Chinese Academy of Sciences, Beijing.
- Liu, J.Q. 2000. Pollen wall ultrastructures of subtribe Tussilaginatae (Asteraceae: Senecioneae) of the Eastern Asia and their systematic and taxonomic significance. *J. Wuhan Bot. Res.* **18**: 461-465.
- Liu, J.Q. 2001. Floral microcharacters of the subtribe Tussilag-

- inae (Asteraceae: Senecioneae) of the Eastern Asia and their systematic and taxonomic significance. *Bull. Bot. Res.* **21**: 11-27.
- Liu, J.Q., Y.P. He, and H.Z. Kong. 2002. The pollen characteristics under SEM in *Farfugium* and *Ligulariopsis* and their taxonomic significance. *Acta Bot. Boreal.-Occid. Sin.* **22**: 33-36.
- Liu, Y., G.X. Chen, and Q.E. Yang. 2009. *Sinosenecio baojinensis* (Asteraceae), a new species from Hunan, China. *Bot. Stud.* **50**: 107-113.
- Nordenstam, B. 1978. Taxonomic studies on the tribe Senecioneae (Compositae). *Opera Bot.* **44**: 1-84.
- Nordenstam, B. 2007. Senecioneae. In J.W. Kadereit and C. Jeffrey (eds.), *The Families and Genera of Vascular Plants*, Vol. 8, Flowering Plants. Eudicots. Asterales. Springer, Berlin, pp. 208-241.
- Nordenstam, B., P.B. Pelser, J.W. Kadereit, and L.E. Watson. 2009. Senecioneae. In V.A. Funk, A. Susanna, T.F. Stuessy, and J. Bayer (eds.), *Systematics, Evolution, and Biogeography of Compositae*. International Association for Plant Taxonomy, Vienna, pp. 503-525.
- Pelser, P.B., B. Nordenstam, J.W. Kadereit, and L.E. Watson. 2007. An ITS phylogeny of tribe Senecioneae (Asteraceae) and a new delimitation of *Senecio* L. *Taxon* **56**: 1077-1104.
- Skvarla, J.J. and B.L. Turner. 1966. Pollen wall ultrastructure and its bearing on the systematic position of *Blennosperma* and *Crocidium* (Compositae). *Amer. J. Bot.* **53**: 555-563.
- Skvarla, J.J., B.L. Turner, V.C. Patel, and A.S. Tomb. 1977. Pollen morphology in the Compositae and in morphologically related families. In V.H. Heywood, J.B. Harborne, and B.L. Turner (eds.), *The Biology and Chemistry of the Compositae*, Vol. 1. Academic Press, London, pp. 141-248.
- Stix, E. 1960. Pollenmorphologische Untersuchungen an Compositen. *Grana Palynol.* **2**: 41-114.
- Vincent, P.L.D. and F.M.G. Norris. 1989. An SEM study of the external pollen morphology in *Senecio* and some related genera in the subtribe Senecioninae (Asteraceae: Senecioneae). *S.-Afr. Tydskr. Plantk.* **55**: 304-309.
- Wang, L.Y., P.B. Pelser, B. Nordenstam, and J.Q. Liu. 2009. Strong incongruence between the ITS phylogeny and generic delimitation in the *Nemosenecio-Sinosenecio-Tephrosieris* assemblage (Asteraceae: Senecioneae). *Bot. Stud.* **50**: 435-442.
- Zhang, D.G., Y. Liu, and Q.E. Yang. 2008. *Sinosenecio jishouensis* (Compositae), a new species from north-west Hunan, China. *Bot. Stud.* **49**: 287-294.

中國菊科千里光族一新屬：海南菊屬

劉 瑩² 楊親二¹

¹ 中國科學院 植物資源保護與可持續利用重點實驗室（華南植物園）

² 中國科學院 植物研究所系統與進化植物學國家重點實驗室

本文描述了中國海南產菊科千里光族一新屬：海南菊屬 (*Hainanecio* Y. Liu & Q. E. Yang)。本屬從蒲兒根屬中分出，僅包含 1 種，即海南菊 (*Hainanecio hainanensis* (Chang & Tseng) Y. Liu & Q. E. Yang)。海南菊屬的主要區別特徵為：葉具羽狀脈，卵形至倒卵形，總苞半球形，花白色，舌狀花頂端漸尖，常具 2 小齒，染色體基數為 $x = 29$ ，花粉具 3 孔，花粉壁超薄結構為向日葵型。

關鍵詞：菊科；海南菊屬；新屬；千里光族；蒲兒根屬；分類學。