Neillia Includes *Stephanandra* (Rosaceae)

Sang-Hun Oh
Department of Biology, 139 Biological Sciences, Box 90338, Duke University, Durham, North Carolina 27708, U.S.A. soh@duke.edu

Abstract. Recent phylogenetic analyses of tribe Neillieae in Rosaceae, which comprises *Neillia*, *Physocarpus*, and *Stephanandra*, based on both nuclear and chloroplast DNA sequences revealed that *Neillia* and *Stephanandra* together form a strongly supported monophyletic group and that species of *Stephanandra* are nested within *Neillia*. The close relationship between *Neillia* and *Stephanandra* is also supported by leaf morphology, inflorescence type, and carpel number. In order to better reflect the evolutionary relationships among species of *Neillia* and *Stephanandra*, based on molecular phylogenetic and morphological evidence, *Stephanandra* is united with *Neillia*, and three traditionally recognized species and a hybrid of *Stephanandra* are transferred to *Neillia*. This treatment results in new combinations as follows: *N. hanceana* (Kuntze) S. Oh, *N. incisa* (Thunberg) S. Oh, and *N.* × *nakatsu-riparia* (H. Takahashi) S. Oh. *Stephanandra incisa* (Thunberg) Zabel var. *macrophylla* Hideo Takahashi is treated as a new synonym of *Neillia incisa*.

Key words: *Neillia*, Rosaceae, *Stephanandra*.

Neillia D. Don is a small genus in Rosaceae with about nine species of deciduous shrubs, whose distribution ranges from the Himalayas across China to Korea in the east, and south to Indonesia (Vidal, 1963; Schulze-Menz, 1964; Cullen, 1971; Kalkman, 1993; but see Gu & Alexander, 2003). The genus *Stephanandra* Siebold & Zuccarini consists of three traditionally recognized species and a recently reported putative hybrid (Takahashi, 1991), indigenous to China, Taiwan, Korea, and Japan (Ohwi, 1965; Yu & Ku, 1974; Lee, 1980). The two genera, along with *Physocarpus* (Cambessèdes) Rafinesque, have been classified in the tribe Neillieae (Maximowicz, 1879), which is characterized within Rosaceae by lobed leaves with persistent or deciduous stipules and ovoid shiny seeds with copious endosperm (Vidal, 1963; Oh & Potter, 2005). The monophyly of the tribe is strongly supported by chloroplast DNA sequence data, including *rbc*L (Morgan et al., 1994) and *mat*K and *trn*L genes (Potter et al., 2002). Potter et al. (2002) included all three genera within Neillieae and showed that *Neillia* and *Stephanandra* are more closely related to each other than either is to *Physocarpus*. Furthermore, *Physocarpus* is quite morphologically distinct from *Neillia* and *Stephanandra* in having stellate trichomes, corymbose inflorescences, and inflated follicular fruits dehiscent along both ventral and dorsal sutures.

Neillia and *Stephanandra* have been distinguished based on characters in fruits and seeds (Vidal, 1963; Cullen, 1971), but my examination of herbarium specimens, including the type collections, indicates that the two genera are not clearly separable with these characters. Vidal (1963), in his revision of *Neillia*, stated that follicles of *Stephanandra* incompletely dehisce at maturity, whereas those of *Neillia* are completely dehiscent. However, the mature follicles of some species of *Neillia*, such as *N. sinensis* Oliver, *N. thibetica* Bureau & Franchet, and *N. uekii* Nakai, are not completely dehiscent, with the result that seeds are retained within the follicles, as in the species of *Stephanandra*. Cullen (1971) explained that *Neillia* differs from *Stephanandra* by having a smooth seed coat (vs. crustaceous). While the seed coat of *S. chinensis* Hance and *S. incisa* (Thunberg) Zabel is more or less papillate, there is no distinction in seed coat ornamentation between *S. tanakae* (Franchet & Savatier) Franchet & Savatier and *Neillia*, all of which have smooth surfaces. Vidal (1963) and Cullen (1971) argued that the styles of *Stephanandra* become lateral in fruits, but the majority of specimens of *Stephanandra*, especially of *S. tanakae*, exhibit terminal styles. They (Vidal, 1963; Cullen, 1971) also contended that follicles of *Neillia* contain more seeds than those of *Stephanandra* (2 to 10 vs. 1 or 2), but this can be considered as continuous variation across the two genera.

Phylogenetic analyses using DNA sequence data encompassing both chloroplast and nuclear genes, separately and in combination, have suggested that *Neillia* and *Stephanandra* together form a strongly supported clade and that recognition of two genera, as currently circumscribed, results in a non-monophyletic grouping with *Stephanandra* nested within *Neillia* (Oh & Potter, 2003, 2005). DNA sequence data of chloroplast *trn*L-*trn*F, *trn*D-*trn*T, *mat*K-*trn*K, and *psb*A-*trn*K genic regions and the second intron of the floral homeotic gene, *LEAFY*, congruently supported that *Stephanandra* is monophyletic and nested

within *Neillia*, making *Neillia* a paraphyletic genus (Oh & Potter, 2003, 2005). Spacer regions of nuclear ribosomal DNA (Internal Transcribed Spacer and External Transcribed Spacer) data, however, did not support the monophyly of *Stephanandra*, placing *S. tanakae* as sister to the weakly supported clade of *Neillia*, *S. incisa*, and *S. chinensis*, but neither *Stephanandra* nor *Neillia* was supported as monophyletic (Oh & Potter, 2003, 2005).

The close relationship between *Neillia* and *Stephanandra* is also supported by several morphological characteristics; species in both genera have ovate to lanceolate leaves with acuminate to caudate apices, racemose or paniculate inflorescences, and a single (rarely two) carpel per flower, with the exception of *N. affinis* Hemsley var. *polygyna* Cardot ex J. E. Vidal, which has three to five carpels per flower. *Neillia*, however, differs from *Stephanandra* by having campanulate or cylindric hypanthia (vs. cupulate), with capitate glandular trichomes developing at the fruiting stage (Yu & Ku, 1974; Gu & Alexander, 2003; Oh & Potter, 2005). The cupulate hypanthium in *Stephanandra* represents a reversal to the ancestral state if elongation of the hypanthium (campanulate or cylindric) is a synapomorphy for the *Neillia-Stephanandra* clade (Oh & Potter, 2005).

In order to better reflect evolutionary relationships based on molecular and morphological evidence, Oh and Potter (2005) recommended that *Neillia* and *Stephanandra* be merged into one genus, in which case the name *Neillia* (Don, 1825) should be used because it has priority over *Stephanandra* (Siebold & Zuccarini, 1843). I herein transfer the species of *Stephanandra* to *Neillia*.

1. Neillia hanceana (Kuntze) S. Oh, comb. nov. Replaced name: *Physocarpus hanceanus* Kuntze, Revis. Gen. Pl. 1: 218. 1891. *Stephanandra chinensis* Hance, J. Bot. 20: 210. 1882. *Opulaster hanceanus* (Kuntze) Kuntze, Revis. Gen. Pl. 2: 949. 1891. *Stephanandra flexuosa* Siebold & Zuccarini var. *chinensis* (Hance) Pampanini, Nuovo Giorn. Bot. Ital. 17: 297. 1910. TYPE: China. Anhui: "circa urbem Wu-hu," May 1881, *T. L. Bullock s.n.* (holotype, BM).

When *Stephanandra chinensis* is transferred to the genus *Neillia*, the name *N. chinensis* cannot be used because of the prior existence of *N. sinensis* (Oliver, 1886). The epithets, *chinensis* and *sinensis*, are considered as confusingly similar and are treated as homonyms when they are based on different types (cf. Article 53.3; Greuter et al., 2000).

When Kuntze (1891) merged *Neillia* and *Stephanandra* into *Physocarpus*, he published *Physocarpus hanceanus* based on *Stephanandra chinensis*. Although Kuntze (1891) did not explain the rationale behind the nomenclature of *P. hanceanus*, it should be considered as a new replacement name, not as a superfluous name. In his taxonomic treatment, Kuntze (1891) simultaneously transferred both *Stephanandra chinensis* and *Neillia sinensis* to the genus *Physocarpus*. Because he published a new combination *P. sinensis* (Oliver) Kuntze based on the latter name, Kuntze himself made the epithet *chinensis* unavailable in *Physocarpus* in the sense of Article 53.3 (Greuter et al., 2000). Thus, *P. hanceanus* is a legitimate replacement name for *S. chinensis* to avoid simultaneous homonymous combination (cf. Article 11.4, Note 1; Greuter et al., 2000). Since the final epithet *hanceana* is available in *Neillia*, it is adopted in this new treatment.

The leaves of *Neillia hanceana* are very similar to those of *N. sinensis*, such that it is difficult to identify the species without flowering material. The two species, however, are easily distinguished by floral characters: *Neillia hanceana* has panicles of white flowers with cupulate hypanthia, whereas *N. sinensis* has racemes of pink flowers with cylindric hypanthia.

Distribution and habitat. Endemic to southeastern and north central China; moist, open thickets and along streams on slopes under temperate mixed deciduous forests; common; elev. 350 to 1100 m.

Selected specimens examined. CHINA. **Anhui:** Yuexi Xian, Yaoluoping, *Z. Xie et al. 97034* (A). **Fujian:** Taining Xian, Xianqiao Gongshe, Emei Feng, *G. Ye 8* (MO). **Guangdong:** Mt. Danxia, *W. T. Tsang 26432* (A). **Guizhou:** Jiangkou Xian, Heiwan River on SE side of Fanjing mtn. range in vic. of Ecol. Station, Guizhou Acad. Sci., *Sino-American Guizhou Bot. Exp. 350* (A). **Henan:** Mt. Jigong, *Z. Zheng 132* (MO). **Hubei:** Mt. Jigong, border of Hubei & Hunan, on divide betw. Yangtze (Chang) & Huaihe Rivers, *Bailey 1917* (A). **Hunan:** Xining Xian, in valley, *C. Luo 1355* (A). **Jiangsu:** Lianyungang city, Liuhe [Willow River site], *Sino-Amer. Yuntai Bot. Exp. Team 45003* (A). **Jiangxi:** Mt. Dagang, Fenyi city, *K. Yao 9275* (A, MO, NY). **Sichuan:** Chengjiang Xian, Liang Liang Xiao Wan, *T. Dai 100537* (MO). **Zhejiang:** Mt. Tianmu, *T. N. Liou 92* (NY).

2. Neillia incisa (Thunberg) S. Oh, comb. nov. Basionym: *Spiraea incisa* Thunberg, in Murray, Syst. Veg., ed. 14, 472. 1784. *Stephanandra incisa* (Thunberg) Zabel, Gart.-Zeitung (Berlin) 4: 510. 1885. TYPE: Japan. *C. P. Thunberg s.n.* (holotype, UPS).

Stephanandra flexuosa Siebold & Zuccarini, Abh. Math.-Phys. Cl. Königl. Bayer. Akad. Wiss. 3: 740. 1843. *Physocarpus flexuosus* (Siebold & Zuccarini) Kuntze, Revis. Gen. Pl. 1: 219. 1891. *Opulaster flexuosus* (Siebold & Zuccarini) Kuntze, Revis. Gen. Pl. 2: 949. 1891. TYPE: Japan. *P. F. von Siebold s.n.* (holotype, L).

Stephanandra gracilis Franchet & Savatier, Enum. Pl. Jap. 2: 333. 1878. *Physocarpus gracilis* (Franchet & Savatier) Kuntze, Revis. Gen. Pl. 1: 219. 1891. *Opulaster gracilis* (Franchet & Savatier) Kuntze, Revis. Gen. Pl. 2: 949. 1891. TYPE: Japan. Honshu: "in monte Fudsi yama," *L. Savatier s.n.* (holotype, P).

Stephanandra quadrifissa Nakai, Bot. Mag. (Tokyo) 40: 170. 1926. *Stephanandra incisa* (Thunberg) Zabel var. *quadrifissa* (Nakai) T. B. Lee, Illustrated Woody Plants of Korea 272. 1966. TYPE: Korea. Kyunggi: Mt. Surak, *T. Chung s.n.* (holotype, TI not seen).

Stephanandra incisa (Thunberg) Zabel var. *macrophylla* Hideo Takahashi, Bull. Kanagawa Pref. Mus., Nat. Sci. 20: 13. 1991. Syn. nov. TYPE: Japan. Honshu: cultivated in Yokohama, transplanted from the Izu Islands, Mikurajima Island, Mt. Oyama, June 1990, *H. Takahashi 77098* (holotype, KPM not seen; isotype, KPM).

Neillia incisa is widely distributed in eastern Asia, and plants of the species are commonly found in mixed deciduous forests in Korea and Japan. It is quite variable in leaf size and margin. However, there is no clear geographic correlation with the variation of the characters within *N. incisa*. For example, plants with very small leaves and three to five deeply incised lobes (e.g., *H. Muroi 2155*) occur in Cheju Island of Korea, Taiwan, and Japan, while individuals with relatively large leaves and three shallowly incised lobes (e.g., *T. Iwasaki s.n.*) are also found in these regions.

Stephanandra flexuosa was first described by Siebold and Zuccarini (1843) from Japan, based on which the genus *Stephanandra* was segregated. It was, however, cited as a taxonomic synonym of *Stephanandra incisa* when Zabel (1885) transferred *Spiraea incisa* to *Stephanandra*, which has been widely accepted by many authors (Rehder, 1940; Hutchinson, 1964; Yu & Ku, 1974; Gu & Alexander, 2003). Pampanini (1910) published *S. flexuosa* var. *chinensis* on the basis of *S. chinensis*, and this variety refers to *N. hanceana*.

Nakai (1926) distinguished *Stephanandra quadrifissa* from *S. incisa* on the basis of its leaves deeply divided into five lobes, four of which being more or less equal in size. Lee (1966, 1980) treated *S. quadrifissa* as a variety of *S. incisa*, and stated that it is also distributed on Cheju Island. I requested the type specimen of *S. quadrifissa* from TI, but received no response. Examination of herbarium specimens and field observations in Korea, including Cheju Island, suggest that there may be a few individuals clearly referrable to *S. quadrifissa* (e.g., *Taquet 2806*), but that the degree of incision of leaf margin is variable within individuals in the populations.

Takahashi (1991) described *S. incisa* var. *macrophylla* on the basis of its larger leaves and ovate stipules, reporting the taxon on the Izu Islands, including the islands of Oshima, Jiijima, Kozushima, and Mikurajima. Takahashi (1991) ascribed the distinctive features of *S. incisa* var. *macrophylla* to the maritime environment on the islands. However, some specimens from Oshima Island (e.g., *Y. Satake & K. Okamoto 49* at A, NY, UC) do not have such features, and there are collections from the main island of Japan (e.g., *Wilson 6812*) that do show the characteristics. Therefore, I do not recognize *S. incisa* var. *macrophylla* as a distinct taxon.

Distribution and habitat. Widespread from Taiwan, northeastern China, Korea, to Japan; moist, open places and streamside in temperate mixed deciduous forests; common; 10 to 2000 m.

Selected specimens examined. CHINA. **Shandong:** 100 li from Qingdao, Mt. Lao, *C. Y. Chiao 2644* (A, NY [2], UC). JAPAN. **Hokkaido:** Hidaka-shicho, Shizunai-cho, ca. 14 km ENE of Shizunai, off Hwy. 235, *Wood & Boufford 3911* (A, MO). **Honshu:** Hyogo Pref., Akashi, *H. Muroi 2155* (A); Miyagi Pref., Kurokawa-gun, Taiwa-cho, Miyatoko, *T. Iwasaki s.n.* (A); Tochigi Pref., Nikko region, *Wilson 6812* (A). **Kyushu:** Kumamoto Pref., Takamori-cho, Aso-gun, *K. Deguchi 8051* (A, MO). **Shikoku:** Tokushima Pref., Mt. Takagi-yama, Kisawa-mura, Naka-gun, at edge of *Fagus crenata* forest near ridge, *G. Murata et al. 56042* (A). NORTH KOREA. **Pyongan-bukdo:** Taiyudo, French Mine, *Wilson 8607* (A [2], MO). SOUTH KOREA. **Cheju-do:** Cheju Island, "in Quelpart in sepilus Hallaisan," *Taquet 2806* (A). **Cholla-namdo:** Kurye-gun, Mt. Chiri, around Piagol, *C. Chang & H. Takahasi 306* (A). **Kyongsang-bukdo:** Mt. Palgong, *Y. S. Kim 1984* (A). **Kyunggi-do:** Mt. Kwanak, *I. K. Lee 1957* (MO). TAIWAN. Hualian Xian, Mt. Fong, *C. S. Kuo et al. 6965* (MO).

3. Neillia tanakae Franchet & Savatier, Enum. Pl. Jap. 1: 121. 1873. *Stephanandra tanakae* (Franchet & Savatier) Franchet & Savatier, Enum. Pl. Jap. 2: 332. 1878. *Physocarpus tanakae* (Franchet & Savatier) Kuntze, Revis. Gen. Pl. 1: 219. 1891. *Opulaster tanakae* (Franchet & Savatier) Kuntze, Revis. Gen. Pl. 2: 949. 1891. TYPE: JAPAN. Honshu: "ad pedem montis Fudsi yama prope Kameide," *L. Savatier 338* (holotype, P; isotype, K).

Neillia tanakae is morphologically similar to *N. incisa* and *N. hanceana* in having cupulate hypanthia, but differs from these two species in its 15 to 20 stamens per flower and shallowly 3-lobed leaves with acute or acuminate lobe apices. Plants of this species only occur in the areas around Mts. Fuji and Haruna in Japan. Although Cullen (1971) contended that multiple superposed buds are present in the leaf axils of flowering branches, I have not seen any specimens of *N. tanakae* with this characteristic. This feature, however, is occasionally found in *N. incisa*.

Distribution and habitat. Restricted to Gumma, Kanagawa, Shizuoka, and Yamanashi prefectures of central Honshu in Japan; along streams in temperate mixed deciduous forests; rare; 200 to 1300 m.

Selected specimens examined. JAPAN. **Honshu:** Kanagawa Pref., Nakatsukyo, N foot of Mt. Ooyama, Kiyokawamura, Aiko-gun, *N. Fukuoka 6741* (NY, UC).

4. Neillia × nakatsu-riparia (H. Takahashi) S. Oh, comb. nov. Basionym: *Stephanandra × nakatsu-riparia* H. Takahashi, Bull. Kanagawa Pref. Mus., Nat. Sci. 20: 17. 1991. TYPE: Japan. Honshu: Kanagawa, Nakatsu River, Kiyokawamura, 21 June 1987, *H. Takahashi 77096* (holotype, KPM not seen; isotype, KPM).

Hybrid formula, sensu H. Takahashi, 1991: *Stephanandra incisa* (Thunberg) Zabel × *Stephanandra tanakae* (Franchet & Savatier) Franchet & Savatier.

This hybrid taxon as described by Takahashi (1991) is morphologically similar to *Neillia incisa*, but exhibits characters intermediate between *N. incisa* and *N. tanakae* in leaf margin, stipule size, and particularly stamen number, which has been used as a diagnostic character to distinguish the two species (Ohwi, 1965). Takahashi (1991) stated that some of the anthers did not mature and that seeds were not developed. Because *N. incisa* and *N. tanakae* are also distributed in the region where *N. × nakatsu-riparia* was described, the area around Mt. Fuji in Japan appears to be a hybrid zone for *N. incisa* and *N. tanakae*. Chromosome number of this hybrid is unknown, but the putative parents are both diploid with $2n = 18$ (Iwatsubo & Naruhashi, 1993).

Acknowledgments. I am grateful to Daniel Potter, Ellen A. Dean, James Henrickson, Victoria C. Hollowell, and an anonymous reviewer for their valuable comments and suggestions. I thank Jean Shepard and Sherri Herndon for their curatorial assistance, and the staff of the following herbaria, A, BM, DAV, DUKE, E, GH, K, KPM, KUN, L, MO, NY, P, PE, SNU, and UC for loans of herbarium specimens and for assistance during my visits. I also thank Suhua Shi, Yalin Peng, Zong-Shu Yue, and Hyunchur Shin for assistance during fieldwork in China and Korea. This research was supported in part by an NSF Doctoral Dissertation Improvement Grant DEB 0073041 to Daniel Potter and the author, DEB 0451962 to Paul S. Manos and the author, an American Society of Plant Taxonomists Graduate Student Research Award, a Jastro Shields Research Award, and a Graduate Student Research Grant from the Center for Biosystematics at the University of California, Davis.

Literature Cited

Cullen, J. 1971. The genus *Neillia* (Rosaceae) in mainland Asia and in cultivation. J. Arnold Arbor. 52: 137–158.

Don, D. 1825. Prodromus Florae Nepalensis. J. Gale, London.

Greuter, W., J. McNeil, F. R. Barrie, H. M. Burdet, V. Demoulin, T. S. Filgueiras, D. H. Nicolson, P. C. Silva, J. E. Skog, P. Trehane, N. J. Turland & D. L. Hawksworth (editors). 2000. International Code of Botanical Nomenclature (St. Louis Code). Regnum Veg. 138.

Gu, C. & C. Alexander. 2003. *Stephanandra*. P. 82 *in*: Z. Wu & P. H. Raven (editors), Flora of China, Vol. 9. Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis.

Hutchinson, J. 1964. The Genera of Flowering Plants, Vol. 1. Clarendon Press, Oxford.

Iwatsubo, Y. & N. Naruhashi. 1993. Chromosome number and karyotype of two *Stephanandra* species (Rosaceae). Cytologia 58: 95–98.

Kalkman, C. 1993. Novelties in Malesian Rosaceae. Blumea 37: 377–378.

Kuntze, O. 1891. Revisio Generum Plantarum, Pars I. Arthur Felix, Leipzig.

Lee, T. B. 1966. Illustrated Woody Plants of Korea. Forest Experiment Station, Seoul.

———. 1980. Illustrated Flora of Korea. Hyangmunsa, Seoul.

Maximowicz, C. J. 1879. Adnotationes de Spiraeaceis. Trudy Imp. S.-Peterburgsk. Bot. Sada 6: 105–261.

Morgan, D. R., D. E. Soltis & K. R. Robertson. 1994. Systematic and evolutionary implications of *rbc*L sequence variation in Rosaceae. Amer. J. Bot. 81: 890–903.

Nakai, T. 1926. Notulae ad plantas Japoniae & Koreae XXXI. Bot. Mag. (Tokyo) 40: 161–171.

Oh, S. & D. Potter. 2003. Phylogenetic utility of the second intron of *LEAFY* in *Neillia* and *Stephanandra* (Rosaceae) and implications for the origin of *Stephanandra*. Molec. Phylogenet. Evol. 29: 203–215.

——— & ———. 2005. Molecular phylogenetic systematics and biogeography of tribe Neillieae (Rosaceae) using DNA sequences of cpDNA, rDNA, and *LEAFY*. Amer. J. Bot. 92: 179–192.

Ohwi, J. 1965. Flora of Japan, F. G. Meyer & E. H. Walker (editors), Smithsonian Institution, Washington, D.C.

Oliver, D. 1886. *Neillia sinensis* Oliv. Plate 1540 *in*: J. D. Hooker (editor), Hooker's Icones Plantarum. Williams & Norgate, London.

Pampanini, R. 1910. Le piante vascolari raccolte dal Rev. P. C. Silvestri nell' Hu-peh durante gli anni 1904–1907. Nuovo Giorn. Bot. Ital. 17: 223–298.

Potter, D., F. Gao, P. E. Bortiri, S. Oh & S. Baggett. 2002. Phylogenetic relationships in Rosaceae inferred from chloroplast *mat*K and *trn*L-*trn*F nucleotide sequence data. Pl. Syst. Evol. 231: 77–89.

Rehder, A. 1940. Manual of Cultivated Trees and Shrubs Hardy in North America, Exclusive of the Subtropical and Warmer Temperate Regions, 2nd ed. Macmillan, New York.

Schulze-Menz, G. K. 1964. Rosaceae. Pp. 209–218 *in*: H. Melchior (editor), Engler's Syllabus der Pflanzenfamilien II. Gebrüder Borntraeger, Berlin.

de Siebold, P. F. & J. G. Zuccarini. 1843. Plantarum quas in Japonia collegit Dr. Ph. Fr. de Siebold genera nova, notis characteristics delineationibusque illustrata proponunt. Abh. Math.-Phys. Cl. Königl. Bayer. Akad. Wiss. 3: 717–749.

Takahashi, H. 1991. A new variety and a new hybrid of the genus *Stephanandra* in Japan. Bull. Kanagawa Pref. Mus., Nat. Sci. 20: 11–19.

Vidal, J. 1963. Le genre *Neillia* (Rosaceae). Adansonia 3: 142–166.

Yu, T. & T. Ku. 1974. *Stephanandra*. Pp. 95–98 *in*: T. Yu & T. Ku (editors), Flora Reipublicae Popularis Sinicae, Vol. 36. Science Press, Beijing.

Zabel, H. 1885. *Stephanandra incisa* (Thnbg.) S. et Z. Gart.-Zeitung (Berlin). 4: 510–512.