

The Identity of *Chloranthus japonicus* Siebold (*Chloranthaceae*)

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The correct name of the plant known as *Chloranthus japonicus* Siebold under the genus *Chloranthus* is *C. quadrifolius* (A. Gray) H. Ohba & S. Akiyama, comb. nov.

Key Words: *Chloranthus quadrifolius*, flora of Japan, “Hitori-shizuka”, new name, Siebold, taxonomy.

During the preparation of the type catalogue of the names described by Siebold and Zuccarini from Japan, we noticed that Siebold has confused two Japanese wild species of *Chloranthus*, i.e., Futari-shizuka and Hitori-shizuka in Japanese (Akiyama et al. 2014).

Siebold published a botanical paper in 1828 during his stay in Nagasaki, Japan. In this he treated the genus *Chloranthus* and reported *C. inconspicuus* Pers. from Japan and described a new species, *Chloranthus japonicus*. Siebold regarded *Nigrina* Thunb. (Nov. Gen. Pl. 3: 58, 1783) as a synonym of *Chloranthus* Sw., and *Nigrina spicata* Thunb. (≡ *C. spicatus* (Thunb.) Makino) as that of *Chloranthus inconspicuus*, which is now known as *C. spicatus* (Thunb.) Makino (Cha-ran in Japanese) and cultivated as medicinal and ornamental plants in Japan. But Siebold did not aware *Nigrina serrata* published in 1815 by Thunberg (Siebold 1828).

Siebold wrote on *Chloranthus japonicus*: *herbaceus, petalo trilobo plano diandro*, i.e., herbaceous, petal trilobed flat, (stamen) diandrous, and distinguished from *C. spicatus* by

the following characters: *antherarum numero, antheris oblongis nec globosis*, i.e., with numerous stamens, oblong not globose anthers.

The herbarium, the Netherland National Biodiversity Research Center (L), keeps four sheets of the original material of *Chloranthus japonicus* Siebold, L0327945, L0421136, L0175753, L0421139. Among them the specimen, L0327945 (Siebold s.n.) with Siebold’s annotation ‘*Chloranthus japonicus* S[iebold], Flor. Junio,’ is designated as the lectotype by Akiyama et al. (2014) and is *Chloranthus serratus* (Futari-shizuka) (Akiyama et al. 2014, fig. 95). The specimen, L0421136 (Siebold s.n.; Fig. 1), with Siebold’s annotation ‘*Chloranthus japonicus*,’ consists of two plants: the upper is *C. serratus*, the lower, with an annotation ‘*Chloranthus japonicus*, S. var. *minor*.’ by Siebold, is not *C. serratus* but *C. japonicus* (Hitori-shizuka). The specimen, L0175753 [Keiske or Sukerok s.n.] with Siebold annotation ‘*Chloranthus japonicus*’ in pencil is *C. serrata* (Fig. 2). The specimen, L0421139 [Siebold s.n.] with Siebold’s annotation

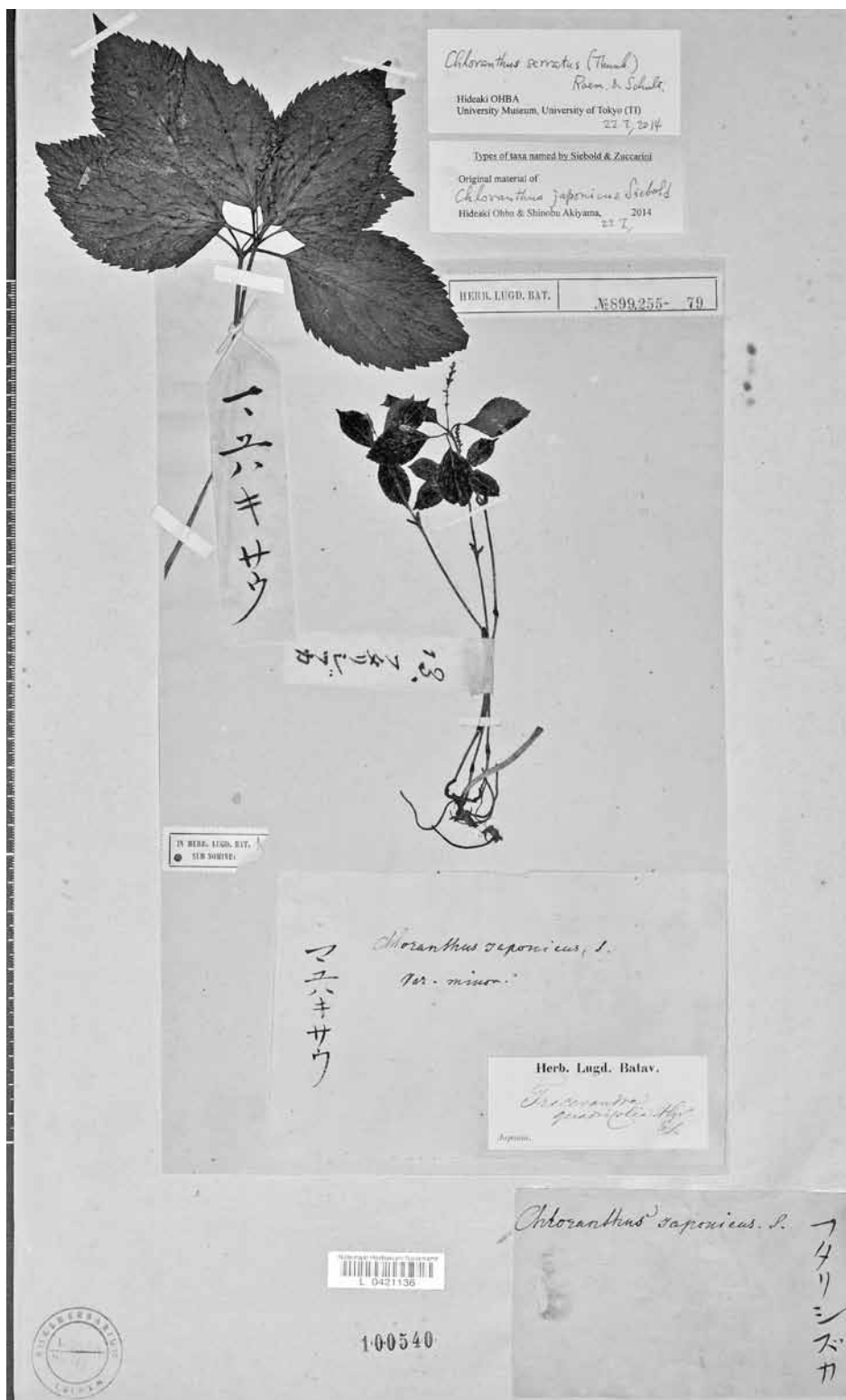


Fig. 1. Original material of *Chloranthus japonicus* Siebold (L0421136).

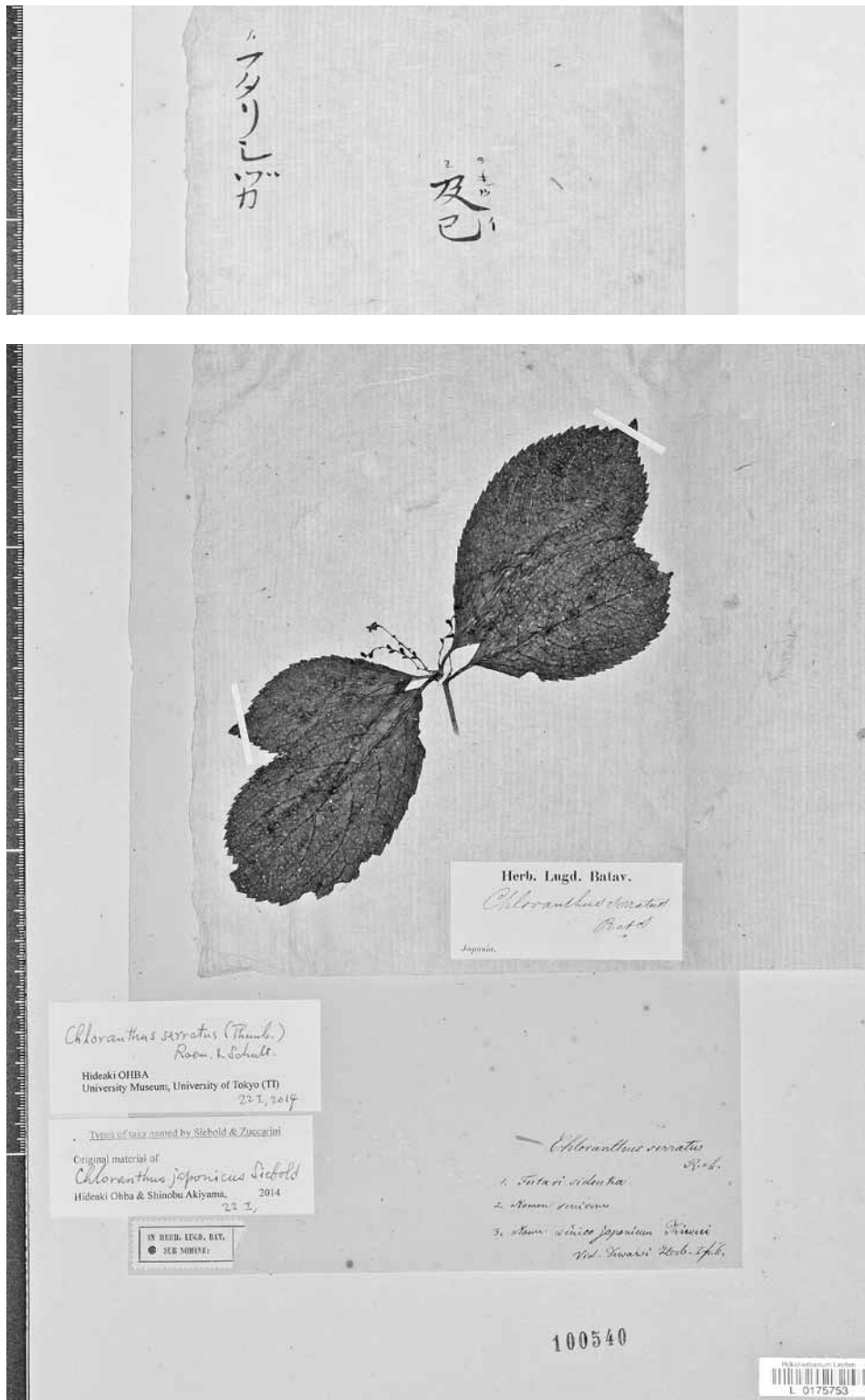


Fig. 2. Original material of *Chloranthus japonicus* Siebold (L0175753), annotation (upper) and specimen (lower).

'*Chloranthus japonicus*, Sieb.' is also *C. serrata* (Fig. 3). As mentioned all these specimens are undoubtedly of *C. serratus*, except for the lower small plant of L0421136 on which Siebold annotated *Chloranthus japonicus* var. *minor*.

A Siebold's specimen, L0421138, remains to be not identified with an annotation '*Thunbergii plantas obscur* [sic] no. 79' (Fig. 4). The number 79 of *Plantae obscurae* in Thunberg's *Flora Japonica* (1784, p. 365) is mentioned as *Japonice: Futari Situka. Crescit in regionibus Miaco*. This specimen is *C. serratus*.

Siebold (1828) is the first botanist who considered the genus *Nigrina* Thunb. as a synonym of *Chloranthus*, and published *Chloranthus japonicus*. However he was not aware of the presence of a paper (Thunberg 1815) in which *Nigrina serrata* Thunb. was described. Siebold reported also Chinese *Chloranthus inconspicuus* Pers. from Japan and distinguished both from *Nigrina spicata* [= *Chloranthus spicatus*] by several morphological characters. He wrote petals trilobed and flowers tetrandrous (*C. inconspicuus*) or diandrous (*C. japonicus*), however both species, *C. serratus* (Futari-shizuka) and '*C. japonicus*' (Hitori-shizuka) have no perianth. In each flower *Chloranthus serratus* has an anther with four locules and Hitori-shizuka has one with two locules. The word 'petal' in Siebold's diagnosis might mean 'bract' and the word 'diandrous' mean 'anthers with two locules.'

The original material of *C. japonicus* are almost all *Chloranthus serratus*. We may presume that Siebold named a Japanese plant called Futari-shizuka in Japanese (i.e., *C. serratus*) as *C. japonicus* because probably he was not aware of Thunberg's *C. serrata* at that time. Only one plant on the sheet, L0421136, with Siebold's provisional name, *Chloranthus japonicus* var. *minor*, seems to fit well with Siebold's diagnosis 'diandrous [i.e., with two anther locules].' But apparently Siebold recognized this plant as a variety of *C. japonicus*, as not typical. So we designated the specimen,

L0327945, as the lectotype of *C. japonicus*.

Miquel (1867) corrected Siebold's confusion on *Chloranthus* and regarded *C. japonicus* as the synonym of *C. serratus* and recognized *Tricerandra quadrifolia* A. Gray for the plant called Hitori-shizuka in Japanese.

The correct name for the plants called Hitori-shizuka in Japanese under *Chloranthus* is needed and *Chloranthus quadrifolius* is proposed here.

Taxonomic treatment

1) *Chloranthus serratus* (Thunb.) Roem. & Schult., Syst. Veg. 3: 461 (1818).

Nigrina serrata Thunb. in Nova Acta Regiae Soc. Sci. Upsal. 7: 142, t. V f. 1 (1815).

Chloranthus japonicus Siebold in Nova Acta Phys.-Med. Acad. Caes. Leop. Carol. Nat. Cur. 14(2): 681 (1828).

Tricerandra japonica (Siebold) Nakai, Fl. Sylv. Kor. 18: 14 (1930).

Type: JAPAN. (Thunberg s.n., UPS-Herb. Thunberg no. 3713).

Japanese name: Futari-shizuka.

2) *Chloranthus quadrifolius* (A. Gray) H. Ohba & S. Akiyama, **comb. nov.**

Tricerandra quadrifolia A. Gray in Perry & al., Expedition to Japan 2: 318 (1857); in Mem. Amer. Acad. Arts, n.s. 6: 405 (1858–59).

Tricerandra japonica (Siebold) Nakai, Fl. Sylv. Kor. 18: 14 (1930), excl. typo.

[*Chloranthus japonicus* Siebold β . *minor* Siebold ex Miq. in Ann. Mus. Bot. Lugduno-Batavi 3: 130 (1867), nom. nud.]

[*Chloranthus macranthera* Schult. ex Miq. in Ann. Mus. Bot. Lugduno-Batavi 3: 130 (1867), nom. nud.]

[*Chloranthus quadrifolius* A. Gray ex Miq. in Ann. Mus. Bot. Lugduno-Batavi 3: 129 (1867), nom. nud.]

Chloranthus japonicus auct. non Siebold: Omori in K. Iwats. & al., Fl. Jap. 2a: 364 (2006).

Types: JAPAN. Hakodadi (Small in 1855, lectotype, GH [Koyama 1996, p. 40, fig. 6]). Yokohama (Williams & Morrow in 1853–54,

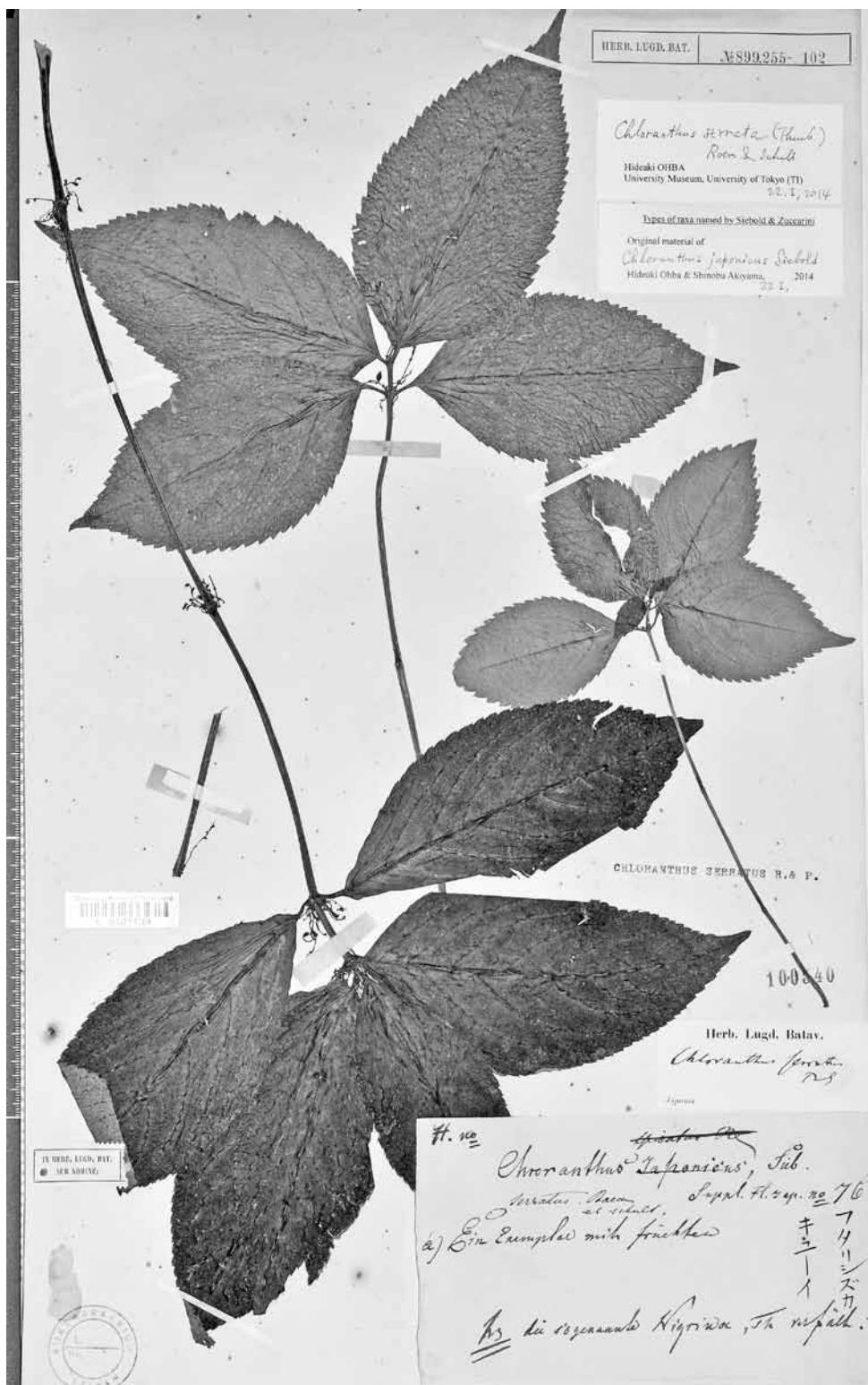


Fig. 3. Original material of *Chloranthus japonicus* Siebold (L0421139).

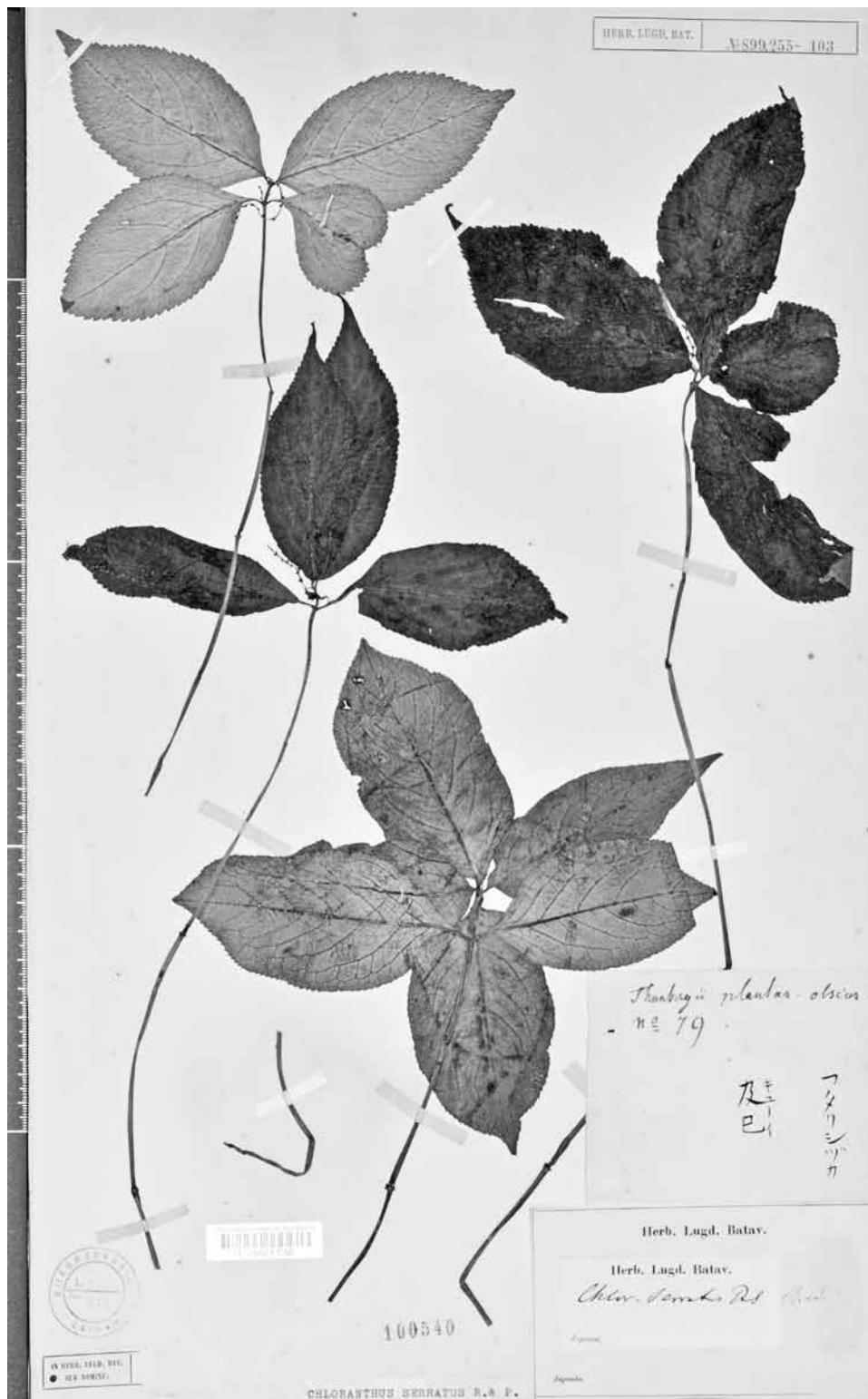


Fig. 4. *Chloranthus serratus* (Thunb.) Roem. & Schult. (L0421138).

syntype, US).

Japanese name: Hitori-shizuka.

The lectotype specimen with Gray's annotation "*Tricercandra quadrifolia*" was collected by J. Small according to HUH Database (<http://kiki.huh.harvard.edu/databases/>).

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大場秀章^a, 秋山 忍^b: ヒトリシズカのチャラン属 (*Chloranthus*, センリョウ科) における正名

シーボルトは、1823 から 1829 年に日本に滞在していた間に、日本の植物についての最初の論文を 1828 年に発表した。その中で、日本のチャラン属植物 (センリョウ科) について言及し、*Chloranthus japonicus* を新種として発表した。日本の植物を扱った文献では、Franchet と Savatier の *Enumeratio Plantarum in Japonia Sponte Crescentium*, vol. 1 (1875) 以来、ヒトリシズカのチャラン属のもとの学名はシーボルトが発表した *C. japonicus* が広く使われてきた。筆者らは、ライデン、ミュンヘン、牧野植物標本館 (首都大学東京)、東京大学総合研究博物館に収蔵されるシーボルト・コレクションから Siebold と Zuccarini が記載に用いた標本 (原資料) を特定し、レクトタイプ選定を行っている。この過程で、これまでヒトリシズカの学名として使用されていた *Chloranthus japonicus* の原資料を検討した。その結果、*Chloranthus japonicus* の原資料の主体

はフタリシズカであることが判明した。レクトタイプとして選定した標本もフタリシズカの標本であり、ヒトリシズカに *Chloranthus japonicus* の学名を使用することはできなくなった。

ヒトリシズカは、Asa Gray により、*Tricerandra quadrifolia* として 1857 年に記載された。この記載のもととなった標本は、いわゆる黒船来航の際に乗船していた植物学者により横浜と函館で採集されたものである。検討の結果、この *Tricerandra quadrifolia* を *Chloranthus* に組み替えた学名がヒトリシズカの正名となることが判明したので、ここに新組合せ *Chloranthus quadrifolius* (A. Gray) H. Ohba & S. Akiyama を提唱する。

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