

A Revision of the Species of *Hydrangea* (Hydrangeaceae) Described by Siebold and Zuccarini, Part 1

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Abstract A considerable number of specimens of *Hydrangea* were collected in Japan by Philipp Franz von Siebold and his collaborators between 1820s and 1860s, and were the first extensive collections of *Hydrangea* from Japan. From these, Siebold published eight new species and four new infraspecific taxa in 1828, then later with Zuccarini, in 1839 and 1841, published eight more new species and one infraspecific taxon. Siebold and Zuccarini eventually recognized 15 species and five varieties of *Hydrangea* in their *Flora Japonica*; *H. alternifolia* Siebold was transferred to *Cardiandra* and *Hydrangea sitchensis* Siebold was renamed *H. stellata* Siebold & Zucc. Among their 16 new species, *H. azisai*, *H. belzonii*, *H. bracteata*, *H. cordifolia*, *H. hortensia*, *H. otaksa*, *H. sitchensis*, and *H. stellata* are now considered to be synonyms. *Hydrangea acuminata* and *H. thunbergii* are regarded as varieties of *H. serrata* (Thunb.) Ser. *Hydrangea japonica*, described as a new species by Siebold, is considered to be derived from natural hybrids between *H. serrata* var. *serrata* and var. *yesoensis*, and a new combination, *H. serrata* var. *japonica* (Siebold) H. Ohba & S. Akiyama, is proposed. *Hydrangea thunbergii* Siebold is a superfluous name for *H. serrata*. A new variety, *Hydrangea serrata* var. *thunbergii* H. Ohba & S. Akiyama, is proposed. An enumeration of *Hydrangea* of Japan (part 1) is presented.

Key words : *Hydrangea*, Japanese flora, lectotypification, Siebold collections, Zuccarini.

Hydrangea (Hydrangeaceae) is specifically diverse in Japan, where various species have been used ornamentally since ancient times. The horticultural value of *Hydrangea* has increased recently, not only in Japan but also worldwide. Siebold (1828) was the first botanist to reveal the diversity in Japanese *Hydrangea* and described several new species.

Siebold, medical doctor and a colonial scientist of the Dutch East Indies, was dispatched to Japan where he stayed for six years, from 1823 to 1829. Although he was unable to survey the Japanese flora meticulously by himself, except around Osaka, Kyoto, and Hakone, which he passed during a court journey to call on the Sho-

gun in Edo (now Tokyo), and Nagasaki and vicinity, his Japanese scholars and medical students cooperated with him in collecting plants and botanical information.

In 1828, while still in Nagasaki, Siebold published his first and only botanical monograph, titled *Synopsis Hydrangeae generis specierum Japonicarum*, as a part of *Engine Worte über den Zustand der Botanik auf Japan in einem Schreiben an den Praesidenten der Akademie;... von Dr. von Siebold, M. d. A. d. N. Datirt Dezima den 18ten December 1825...* in *Nova Acta Physico-Medica Academiae Caesareae Leopoldino-Carolinae Naturae Curiosorum, Bonn* (vol. 14, pp. 671–696, 2 pl.). Before Siebold's paper appeared,

only five species of *Hydrangea* were recorded from Japan, but under the *Viburnum* at first, by Thunberg (1784). We presume that Siebold enthusiastically studied *Hydrangea* because of its important horticultural value and for the possibility of describing new species. His interest in *Hydrangea* continued after he left Japan and he later described and illustrated many species with Zuccarini in *Flora Japonica*, vol. 1 (Siebold and Zuccarini, 1835–1841). In 1839 and 1841 Siebold and Zuccarini reported 15 species for Japan, including eight new ones, of which 14 were found in the wild or under cultivation as ornamental plants, and one, *H. hortensia*, an introduced ornamental from China. *Hydrangea alternifolia* Siebold was treated in their distinct new genus, *Cardiandra*, as *C. alternifolia* (Siebold) Siebold & Zucc.

Japanese Hydrangeas, including cultivated forms, were later studied by Maximowicz (1867), Wilson (1923), Sugimoto (1926), Rehder (1927, 1940, 1949), Nakai (1938), Hawort-Booth (1950, 1984), McClintock (1957), Hara (1955), Yamamoto (1979), Ohba (2001), and others. Nevertheless, the identities of some Hydrangeas, particularly those described by Siebold, and Siebold and Zuccarini, have remained uncertain, especially among *Hydrangea serrata* and related species.

This paper aims to provide data on the original material used by Siebold, and Siebold and Zuccarini and to circumscribe the taxa described by them. We studied nearly all the specimens collected by Siebold and his successors and collaborators in Japan and now stored in L and M. In Leiden specimens collected in Japan by Philipp Franz von Siebold and his successors and collaborators were labeled by not only Siebold but also Hoffmann, Schultes, and Miquel. Names of collector and the herbarium on labels were written in various ways, i. e. Hb. Siebold, Hb. v. Siebold, Hb. von Siebold, etc. In Munich, each taxon is represented by a single specimen with the determination in Zuccarini's hand on label headed "Herbarium Zuccarini." There are several very probably duplicates with labels with the heading "HERB. ZUCCARINII, HERBARIUM REGIUM

MONACENSE, Herbar. Univ. Ludeo. Maximil." (Akiyama *et al.*, 2012). For evaluation and categorization of the lectotype specimens, see Akiyama *et al.* (2012). This is the part 1 treating the taxa attributing to *H. serrata*.

Hydrangea [Gron.] L., Sp. Pl.: 397 (1753).

1) **Hydrangea acuminata** Siebold & Zucc., Fl. Jap. 1: 110, t. 56, 57 I (1839); in Abh. Math.-Phys. Cl. Königl. Bayer. Akad. Wiss. 4(2): 191 (1845).

Original material: Hb. Siebold s.n. (L 0043373) with Siebold's annotation "*Hydrangea acuminata*" [Category 2] (Fig. 1). Legit in Japonia et Communicavit d. Siebold (M 0153946), Herbarium Zuccarini, with Zuccarini's annotation "*Hydrangea acuminata* S. & Z." [Category 2]. Legit Dr Siebold in Japonia Communicavit Prof. Zuccarini anno 1843 (M 0153945) (Fig. 2), Herbarium Zuccarini [Category 2b]. In Japonia legit et Communicavit Siebold (M 0153948), Herb. Zuccarini, [Category 2b].

Additional specimens. Japonia. Bürger (L 0103059). Textor (L 0421811) (Fig. 3). Herb. Zuccarini (M 0153949, M 0153950).

According to Siebold and Zuccarini *Hydrangea acuminata* was collected in Higo Province, Kyushu. Siebold and Zuccarini characterized *H. acuminata* by its thin leaves, long petiole and long acuminate leaf apex. All of the original material in L and an additional specimen (L 0103059) have leaves with a hairy midvein on the upper surface, axillary hairs on the lower surface, and basally conical capsules like those of *H. serrata* var. *serrata*. However, three of the original material (M 0153945 [Fig. 2], 0153946, 0153948) and two additional ones in Munich (M 0153949, 0153950) differ from the others by having short (1.5–2 cm long) petioles, less acuminate leaf apex, and rather thick leaf texture. Except for these five sheets in M, the other specimens are considered to be the basis of the illustration in t. 56 of *Flora Japonica* (Siebold and Zuccarini, 1839).

An additional specimen (L 0421811) (Fig. 3)

approaches *H. serrata* var. *thunbergii* H. Ohba & S. Akiyama in its small acuminate leaves. One of the branches of the specimen has a slip written “アマチャ [Amatya in Japanese]”, which is the Japanese name for *H. serrata* var. *thunbergii* (see *H. thunbergii*), but others represent *H. acuminata*.

We regard *Hydrangea acuminata* to be an extreme form within the range of variation of *H. serrata* occurring in central Kyushu. Nakai (1926) already treated it as a variety of *H. serrata* (Thunb.) Ser., i.e. var. *acuminata* (Siebold & Zucc.) Nakai, which is acceptable. Sawa-ajisai is its Japanese name.

The specimen (L 0043373) (Fig. 1), with Siebold's annotation “*Hydrangea acuminata*,” is designated here as the lectotype.

2) ***Hydrangea acuminata*** Siebold & Zucc. var. ***buengeri*** Siebold & Zucc., Fl. Jap. 1: 111, t. 57 II (1839), as “*Bürgeri*.”

Original material: Japonia. Herb. Bürger (Communicavit Bürger, Hb. Siebold) (L 0103049) with Zuccarini's annotation “*Hydrangea Bürgeri* S. & Z.” [Category 2] [left-hand branch: Category 5 (Fl. Jap. 1: t. 57 II)] (Fig. 4).

Additional specimen: Japonia. Bürger (L 0103055).

These specimens cited were collected in Kyushu, and cannot be distinguished from those of *H. serrata* var. *acuminata* (Siebold & Zucc.) Nakai. The original material (L 0103049) is designated here as the lectotype.

3) ***Hydrangea belzonii*** Siebold & Zucc., Fl. Jap. 1: 109, t. 55 (1939); in Abh. Math.-Phys. Cl. Königl. Bayer. Akad. Wiss. 4(2): 191 (1854).

Original material: Japonia. Hb. von Siebold (L 0329008) (Fig. 5) with Siebold's annotation “*Hydrangea Belzoni*. S.” [Category 2] and note “Foliis ternis. . . fl. Jul. Aug. 1829” and “Exemplar authenticum, florum Japonicae digerendae quod interviit” [upper right-hand branch: Category 5 (Fl. Jap. 1: t. 55)]. Japonia. Hb. Siebold (L 0045370) with Zuccarini's annotation “*Hydrangea belzonii* Siebold & Zucc. Flora. Japon, tab;

55,” and note “Exemplar authenticum florum Japonicae deligerendae quod interviit.” Legit Bürger in Japonia Communicavit d. Siebold (M 0153955) Herbarium Zuccarini, with Zuccarini's annotation “*Hydrangea Belzonii* S. & Z.” [Category 2]. In Japonia legit Bürger Communicavit d. Siebold (M 0153954) Herb. Zuccarini [Category 2b].

Additional specimens: Japonia. Siebold? (L 0329007) with note “exempl. authenticum” by an unknown person (Fig. 6). Japonia. Bürger (L 0103043, 0103044 and 010305). Pierot (L 0103048).

All these specimens cited have a hairy midvein on the upper surface, dense hairs in the axils of the midvein on the lower surface, hairy inflorescence, and also short acuminate leaf apex. A specimen (L 0329007) (Fig. 6), which has leaves with an acuminate apex, approaches *H. japonica*.

Hydrangea belzonii Siebold & Zucc., as we interpret it, is the same as *H. serrata* var. *yesoensis* (Koidz.) H. Ohba (Ezo-ajisai in Japanese). Variety *yesoensis* ranges from Hokkaido southwestward through Honshu to Kyushu on the Japan Sea side. The specimens collected by Siebold (L 0329008, 0043370, 03290079) and Bürger (L 0103043) have capsules with a cup-shaped base, leaves with a hairy midvein on the upper surface and axillary hairs on the lower surface and hairy inflorescences. The pubescence of the leaves is the most significant character to distinguish *Hydrangea serrata* from *H. macrophylla*. The width of the leaves of var. *yesoensis* is normally more than 5 cm, but on M 0153954 and 0153955 they are between 4.5 and 5 cm. However, their ornamental flowers are nearly 4 cm across with 4 rhombic sepals. One of conspicuous tendencies of *H. belzonii* is in the enlargement of the sepals of the ornamental flowers sometimes beyond 4 cm in diameter, as shown in L 0329007.

The specimen (L 0329008) (Fig. 5) is designated here as the lectotype, because it corresponds well with the original description and has both Siebold's annotation and a note including “Exemplar authenticum, florum Japonicae diger-

endae quod interviiit." A specimen collected by Bürger (M 0153956) determined as *Hydrangea belzonii* Siebold & Zucc. by Miquel is *H. macrophylla* f. *normalis* because it has glabrous leaves.

4) **Hydrangea japonica** Siebold in Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 14(2): 689 (1828). Siebold & Zucc., Fl. Jap. 1: 106, t. 53 (1839); in Abh. Math.-Phys. Cl. Königl. Bayer. Akad. Wiss. 4(2): 192 (1845).

Original material: Japonia. Hb. v Siebold, in July (L 0043374) with Siebold's annotation "*Hydrangea Japonica*, S" [Category 2] and note "Julio. flor. roseis." (Fig. 7).

Additional specimens: Japonia. Siebold (L 0329009), with note "flores rosei!," "Exempl. authenticum." Siebold? (L 0329009, 0421803). Bürger (L 0103058, 0103050 [Fig. 8], 0103047 [upper left side branch] with Siebold's annotation "*Thunbergii* S." [Fig. 9], 0103052, 0103051). Ito Keiske (L 0103053). Japonia. Prope urbem Nagasaki ins. Kiu Siu. Pierot 593 (L 0103057) (Fig. 10). Japonia. Pierot s.n. (M 0153964). Herb. Zuccarini (M 0153949, 0153950).

Hydrangea japonica is known to have been cultivated in gardens as an ornamental since Siebold's time. It has intermediate characteristics between *Hydrangea serrata* varieties *serrata* and *yesoensis*. *Hydrangea japonica* has the upper surface of the leaves conspicuously hairy on the midvein and the lower surface densely hairy in the axils of the main lateral veins. The inflorescence axes are also hairy. The capsules are ellipsoid or cup-shaped.

In *H. serrata* var. *serrata* the distribution range sometimes overlaps with var. *yesoensis* in the Hokuriku region, particularly in Fukui, Toyama and Niigata prefectures. In populations of var. *serrata* adjacent to those of var. *yesoensis* the enlarged sepals often show a tendency to be larger and reddish. *Hydrangea japonica* is better regarded as a variety of *H. serrata*, and might be derived from hybrids between var. *serrata* and var. *yesoensis*.

Pierot 593 (L 0103057) (Fig. 10), which was treated as *H. azisai*, and Bürger s.n. (L 0103050)

(Fig. 8) have enlarged sepals like those of var. *yesoensis*, but their leaves are lanceolate to widely lanceolate with a long acuminate apex. Bürger s.n. (L 0103047 [upper left side branch]) (Fig. 9), part of the original material of *Hydrangea thunbergii* Siebold, is *H. japonica*.

The specimen (L 0043374) with Siebold's annotation "*Hydrangea Japonica*, S" is designated here as the lectotype of *H. japonica* (Fig. 12). Siebold recorded two Japanese names, Benigaku and Kakusoo.

5) **Hydrangea japonica** Siebold var. **benkaku** Siebold in Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 14(2): 689 (1828), as "a. *benkaku*." Siebold & Zucc., Fl. Jap. 1: 106 (1839), as "*Benikaku*."

Original material: Japonia. Hb. Siebold (L 0329010 [lower]) with Siebold's annotation "*Hydrangea japonica*, S *Benkak*." and note "flor. roseiis," "*Hydrangea tsurudemari*, Jap." and Japanese name "ツルデマリ" [Tsuru-demari in Japanese] and Zuccarini's annotation "*Hydrangea japonica* S. & Z." [Category 2] (Fig. 11).

Siebold (1828) named *H. japonica* with red enlarged sepals var. *benkaku*. This is a superfluous name for var. *japonica*. The original material (L 0329010) is designated here as the lectotype (Fig. 11).

6) **Hydrangea japonica** Siebold var. **konkaku** Siebold in Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 14(2): 689 (1828), as "b. *konkaku*." Siebold & Zucc., Fl. Jap. 1: 106 (1839).

Original material: Japonia. Hb. von Siebold (L 0103054) with Siebold's annotation "*Hydrangea japonica*" and note "flor. caesiis" [Category 2] (Fig. 12).

Siebold's note "flor. caesiis" indicates the enlarged sepals are blue. The original material (L 0103054) is designated here as the lectotype (Fig. 12). Siebold recorded the Japanese name, Konkaku. The color variation in *H. serrata* var. *japonica* appears to be stable and better to evaluate as cultivars, *H. serrata* var. *japonica* "Benkaku"

for plants with red enlarged sepals, and “Konkaku” for those with blue enlarged sepals. The illustration of *Hydrangea japonica* var. *caerulea* Hook. in Curtis’ Botanical Magazine, t. 4253 bears a strong resemblance to var. *konkaku*. We considered this to fall within the range of variation.

7) ***Hydrangea sitsitan*** Siebold in Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 14(2): 692 (1828).

Original material: Japonia. Hb. von Siebold (L 0043368) with Siebold’s annotation “*Hydrangea Sitsdankw’a*” and “*stellata*” [Category 2] (Fig. 13). Japonia. Hb. von Siebold (L 0170300) with Siebold’s annotation “*Hydrangea Sitsidanwa* S.” [Category 2] and Japanese name “しちだんくわ [Shichidan-ka in Japanese]” [Category 3].

This is a curious form of *Hydrangea serrata* Ser. var. *serrata* with double or more enlarged sepals. One of the two original specimens (L 0043368) is designated here as the lectotype (Fig. 13). The epithet “*sitsitan*” is derived from the Japanese name “Sitsdankw’a” (now Shichidan-ka). Later Siebold changed the epithet to *stellata* (see below).

The enlarged sepals number 10 to 15, with the sepals radially arranged in 2 or 3 series. It appears to be multiplication of sepals. In *Hydrangea* such multiplication is found in other species and varieties and is stable and constant. We recognize taxonomically these flowers with multiple sepals as a form.

8) ***Hydrangea stellata*** Siebold & Zucc., Fl. Jap. 1: 112, t. 59. I (1839), nom. superfl.; in Abh. Math.-Phys. Cl. Königl. Bayer. Akad. Wiss. 4(2): 192 (1845).

Original material: Japonia. Hb. von Siebold (L 0043368) with Siebold’s annotation “*Hydrangea Sitsdankw’a*” and “*stellata*” [Category 2] (Fig. 13).

This is a superfluous name for *Hydrangea sitsitan*. When Siebold and Zuccarini (1839) described this species, they cited *Hydrangea sitsitan* Siebold in synonymy.

9) ***Hydrangea thunbergii*** Siebold in Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 14(2): 690 (1828), nom. superfl.; Syn. Pl. Oeconom.: 47 (1830), nom. nud. Siebold & Zucc., Fl. Jap. 1: 111, t. 58 (1839), nom. superfl.; in Abh. Math.-Phys. Cl. Königl. Bayer. Akad. Wiss. 4(2): 192 (1845).

Original material: Japonia. Cultivated in Hortus Botanicus [in Deshima], Hb. von Siebold, in July (L 0043372) with three labels with Siebold’s annotation “*Hydrangea Thunbergii*, S” [Category 2], and notes Flor. majis. cult. H. Bot. and Japanese name “アマチャ [Amatya in Japanese]” [upper left-hand branch: Category 5 (Fl. Jap. 1: t. 57 II)] (Fig. 14). Bürger (L 0103047 [upper left-hand branch]) with Siebold’s annotation “*Thunbergii* S.” (Fig. 9).

Additional specimens: Japonia. Hb. Bürger (L 0103056). Japonia: Mohnike (L 0421812), with note “Amatja.” Textor (L 0421810).

Siebold (1828), aware that *Viburnum serratum* Thunb. was a species of *Hydrangea*, gave it a new name, *H. thunbergii*. According to the *International Code of Nomenclature for algae, fungi, and plants (Melbourne Code) (ICN)* (McNeill et al., 2012) *H. thunbergii* Siebold is a superfluous name for *H. serrata* (Thunb.) Ser. (Art. 52.1). After examining the original material we found that *H. thunbergii* in the sense of Siebold is not *H. serrata* var. *serrata* but a distinct variety of *H. serrata*.

Hydrangea thunbergii [sensu Siebold] is the plant called “Amatya (Amats’Ia in Siebold, 1828)” in Japan. The dried leaves of this species contain phylloolulcin. The sweet extract of the dried leaves has been used a kind of tea, called Amatya, particularly at the ceremony of Buddha’s birthday in Japan. The plants referred to *H. thunbergii* [sensu Siebold] have narrowly elliptic or lanceolate leaves with an acuminate apex, and attenuate base and enlarged, reddish sepals. The red sepals indicate a high concentration of phylloolulcin. Siebold wrote “in montibus altioribus, praesertim provinciae Awa ac Sonaki in insula Sikok, ubi folia sicca loco Theae praeparantur dulcis saporis virtutisque Theae Bohoe.” The

leaves used in Amatyra are collected now from not only *H. thunbergii* but also *H. serrata* var. *angustata*. It is known that the leaves of *H. thunbergii* are not always sweet when dried.

Although no specimens collected from Awa were found in L or M, a specimen from a cultivated plant (L 0043372) is designated here as the lectotype of *H. thunbergii* [sensu Siebold] (Fig. 14). The lectotype specimen consists of three branches. Except on the lower left-hand branch the leaves have nearly entire margins and an obtuse or cuspidate apex. The lower left-hand branch has leaves with low serrations, widely obovate enlarged sepals with widely rounded apex. The upper branch with an inflorescence without normal flowers appears to be the basis of the illustration of t. 57 II in *Flora Japonica*. Bürger s.n. (L0103047) (Fig. 9) is not *H. thunbergii* but *H. japonica* (= *H. serrata* var. *japonica*).

Although Ohba (1989) made a new combination, *Hydrangea serrata* var. *thunbergii* (Siebold) H. Ohba, this name is illegitimate as a combination based on *H. thunbergii* Siebold, and also illegitimate as a new variety because of the lack of a type citation. A new variety, *Hydrangea serrata* var. *thunbergii* H. Ohba & S. Akiyama, is here proposed.

An enumeration of *Hydrangea* of Japan (part 1)

[Additional synonyms see Ohba (2001)]

1. *Hydrangea serrata* (Thunb.) Ser. in DC., Prodr. 4: 15 (1830).

Viburnum serratum Thunb., in Murray, Syst. Veg. ed. 14, 294 (May–June 1784); Fl. Jap. 124 (1784). Lectotype: Thunberg δ (UPS) [see Hara (1953), p. 47 (fig. 29) and p. 65].

1a. var. *serrata*: Ohba in Iwatsuki *et al.* (eds.), Flora of Japan 2b: 89 (2001). [f. *serrata*] Japanese name: Yama-ajisai.

1b. var. *serrata* f. *belladonna* Kitam. in Acta Phytotax. Geobot. 14: 86 (1951). Type: [Japan] Prov. Yamashiro, Daigo. G. Nakai (KYO). Japanese name: Maiko-ajisai.

1c. var. *serrata* f. *prolifera* (Regel) Nakai, Siebold *Hydrang.* Kaisetsu: 14 (1938). H. Ohba in J. Jap. Bot. 64: 325 (1989). Japanese name: Shichidanka.

H. sitchensis Siebold in Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 14(2): 692 (1828). Lectotype (designated here): Japonia. Herb. Siebold (L 0043368).

H. stellata Siebold & Zucc., Fl. Jap. 1: 112, t. 59. I (1839), a superfluous name for *H. sitchensis* Siebold; in Abh. Math.-Phys. Cl. Königl. Bayer. Akad. Wiss. 4(2): 192 (1845). Type: the lectotype of *H. sitchensis* Siebold.

H. stellata Siebold & Zucc. var. (β .) *prolifera* Regel in Gartenflora 15: 291, t. 521 (1866). Lectotype (designated here): Gartenflora 15: t. 521 (1866). According to ICN this is not validly published (Art. 35.1) and legitimate (Art. 55.2). So this is regarded as the basionym of *H. serrata* f. *prolifera* Nakai and its author, i.e. Regel, is cited in parentheses, followed by the name of the author who effected the alteration, i.e. Nakai (see Art. 49.1 of ICN).

H. hortensia DC. var. (η .) *stellata* (Siebold & Zucc.) Maxim. in Mém. Acad. Imp. Sci. Saint Petersburg, ser. 7, 10(16): 14 (1867).

1d. var. *acuminata* (Siebold & Zucc.) Nakai, Fl. Sylv. Kor. 15: 69 (1926). Japanese name: Sawa-ajisai.

H. acuminata Siebold & Zucc., Fl. Jap. 1: 110, t. 56, 57 I (1839); in Abh. Math.-Phys. Cl. Königl. Bayer. Akad. Wiss. 4(2): 191 (1845). Lectotype (designated here): Japonia. Herb. Siebold (L 0043373).

H. acuminata Siebold & Zucc. var. *buengeri* Siebold & Zucc., Fl. Jap. 1: 111, t. 57 II (1839), as “*Bürgeri*.” Lectotype (designated here): Japonia. Herb. Bürger (L 0103049).

1e. var. *angustata* (Franch. & Sav.) H. Ohba in J. Jap. Bot. 64: 325 (1989). Japanese name: Amagi-amacha.

H. hortensis Sm. var. (γ .) *angustata* Franch. & Sav., Enum. Pl. Jap. 1: 151 (1873). Type: Circa Atami insulae Nippon. Savatier 473bis (P, not seen).

H. macrophylla (Thunb.) Ser. subsp. *serrata*

(Thunb.) Makino var. *amagiana* Makino in J. Jap. Bot. 8: 35 (1932). Type: [Japan] Prov. Idzu: Mt. Amagi. T. Makino (Makino?, not seen)

1f. var. **japonica** (Siebold) H. Ohba & S. Akiyama, stat. et comb. nov. Japanese name: Benigaku.

H. japonica Siebold in Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 14(2): 689 (1829). Lectotype (designated here): Japonia. Herb. Siebold (L 0043374).

H. japonica Siebold var. *benkaku* Siebold in Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 14(2): 689 (1828), a superfluous name for *H. japonica* var. *japonica*. Type: the lectotype of *H. serrata* var. *japonica*.

H. japonica Siebold var. *konkaku* Siebold in Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 14(2): 689 (1828). Lectotype (designated here): Japonia. Herb. Siebold (L 0103054).

H. japonica Siebold var. *rosea* Siebold & Zuccarini, Fl. Jap. 1: 107, t. 53 (1839), nom. superfl.

H. japonica Siebold var. (β). *caerulea* Hook. in Curtis' Bot. Mag. 20: t. 4253 (1846). Lectotype (designated here): Curtis' Bot. Mag. t. 4253 (1846).

H. japonica Siebold var. *rosalba* Van Houtte, Fl. Serres 16 (5,6): 75, t. 1649 (1867). Lectotype (designated here): Van Houtte, Fl. Serres 16(5,6): 75, t. 1649 (1867).

H. japonica Siebold var. *lindleyi* Regel, Gartenflora 15: 289 (1866), versim.

1g. var. **minamitanii** H. Ohba in J. Jap. Bot. 64: 199 (1989). Type: [Japan] Miyazaki Pref., Saito-shi, Ginkyougawa. T. Minamitani no. 26304 (TI). Japanese name: Hyūga-ajisai.

1h. var. **thunbergii** H. Ohba & S. Akiyama, var. nov. Japanese name: Amatya.

H. thunbergii Siebold in Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 14(2): 690 (1828), nom. superfl.; Syn. Pl. Oeconom.: 47 (1830), nom. nud. Siebold & Zucc., Fl. Jap. 1: 111, t. 58 (1839); in Abh. Math.-Phys. Cl. Königl. Bayer. Akad. Wiss. 4(2): 192 (1845), nom. superfl., excl. typo.

H. serrata (Thunb.) Ser. var. *thunbergii* H. Ohba in J. Jap. Bot. 64: 325 (1989), nom.

superfl., excl. typo.

A typo (var. *serrata*) vene differt: lobis sepalorum floris ornamentorum late obovatis apice vere vel rotundate truncatis, basi cuneatis vel rotundatis, 1.5–1.7(–2) cm longis, floris per anthesim roseis.

Type: Japonia. Cult. in Horto Botanico [in Deshima], Herb. Siebold, in July (L 0043372), with three labels with Siebold's annotation "*Hydrangea Thunbergii*, S" (Fig. 14).

1i. var. **yesoensis** (Koidz.) H. Ohba in Iwatsuki *et al.* (eds.), Fl. Jap. 2b: 90 (2001). [f. **yesoensis**] Japanese name: Ezo-ajisai.

H. yesoensis Koidz. in Bot. Mag. (Tokyo) 40: 347 (1926). Type: [Japan] Yezo, ad Hakodate. Maximowicz in 1861 (L [903.257–910]).

H. belzonii Siebold & Zucc., Fl. Jap. 1: 109, t. 55 (1839); in Abh. Math.-Phys. Cl. Königl. Bayer. Akad. Wiss. 4(2): 191 (1854). Lectotype (designated here): Japonia. Herb. Siebold (L0329008).

1j. var. **yesoensis** (Koidz.) H. Ohba f. **cuspidata** (Thunb.) Nakai, Siebold Hydrang. Kaisetsu: 14 (1928). Japanese name: Hime-ajisai, Niwa-ajisai.

Viburnum cuspidatum Thunb., Fl. Jap.: 125 (1784). Lectotype: [Japonia]. Thunberg (UPS).

Kitamura (1951) treated *Hydrangea cuspidata* (Thunb.) Miq. as an invalid combination because Miquel cited *Viburnum cuspidatum* Thunb. with a question mark. For the valid publication of a combination Art. 41 of *ICN* does not mention the basionym published with a question mark. But for valid publication of names Art. 36 mentions "...Art. 36.1(a) does not apply to names published with a question mark...." So it is proper to treat Miquel's combination, *Hydrangea cuspidata* (Thunb.) Miq., as valid in conformity with the rules of *ICN*.

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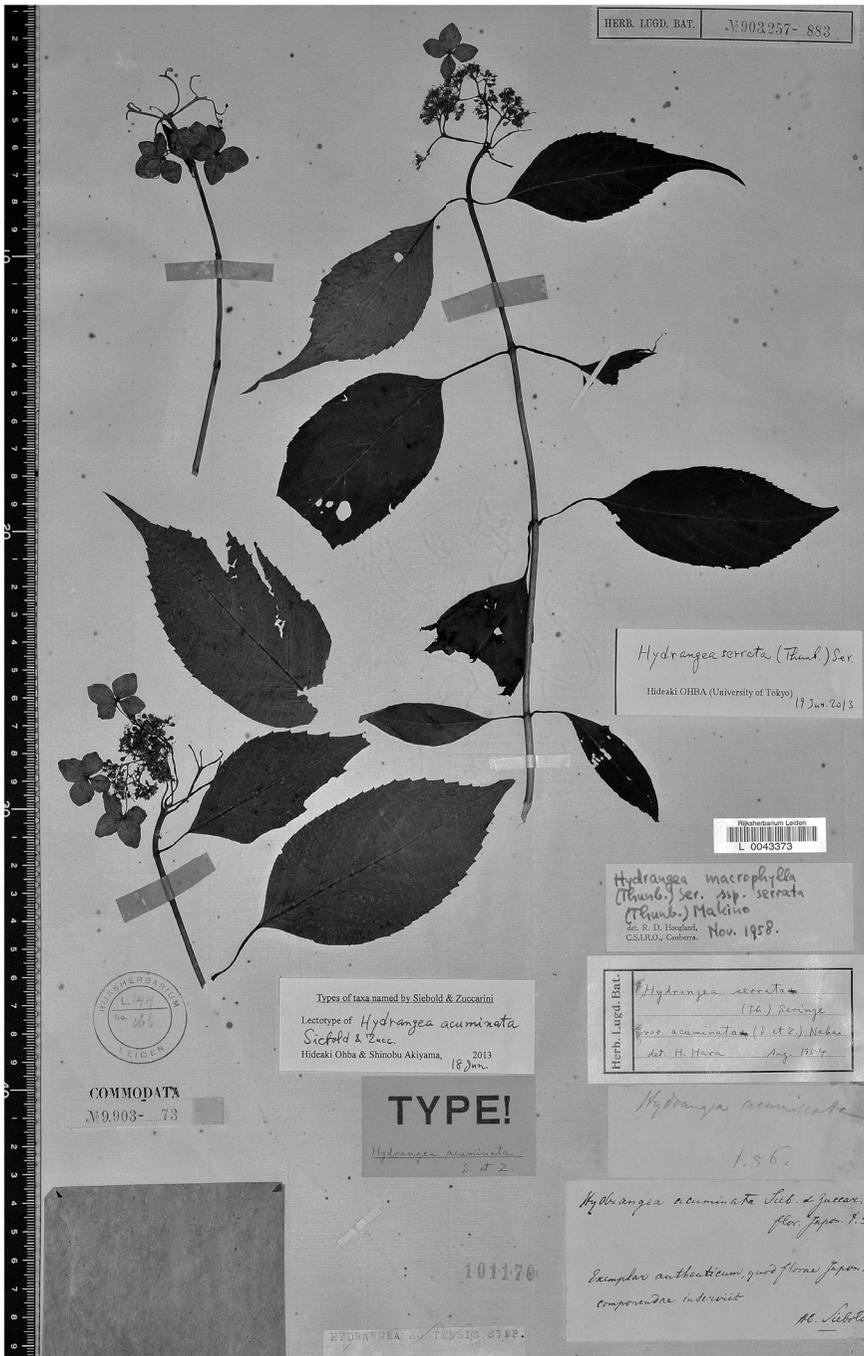


Fig. 1. Lectotype of *Hydrangea acuminata* Siebold & Zucc. Hb. Siebold s.n. (L 0043373).

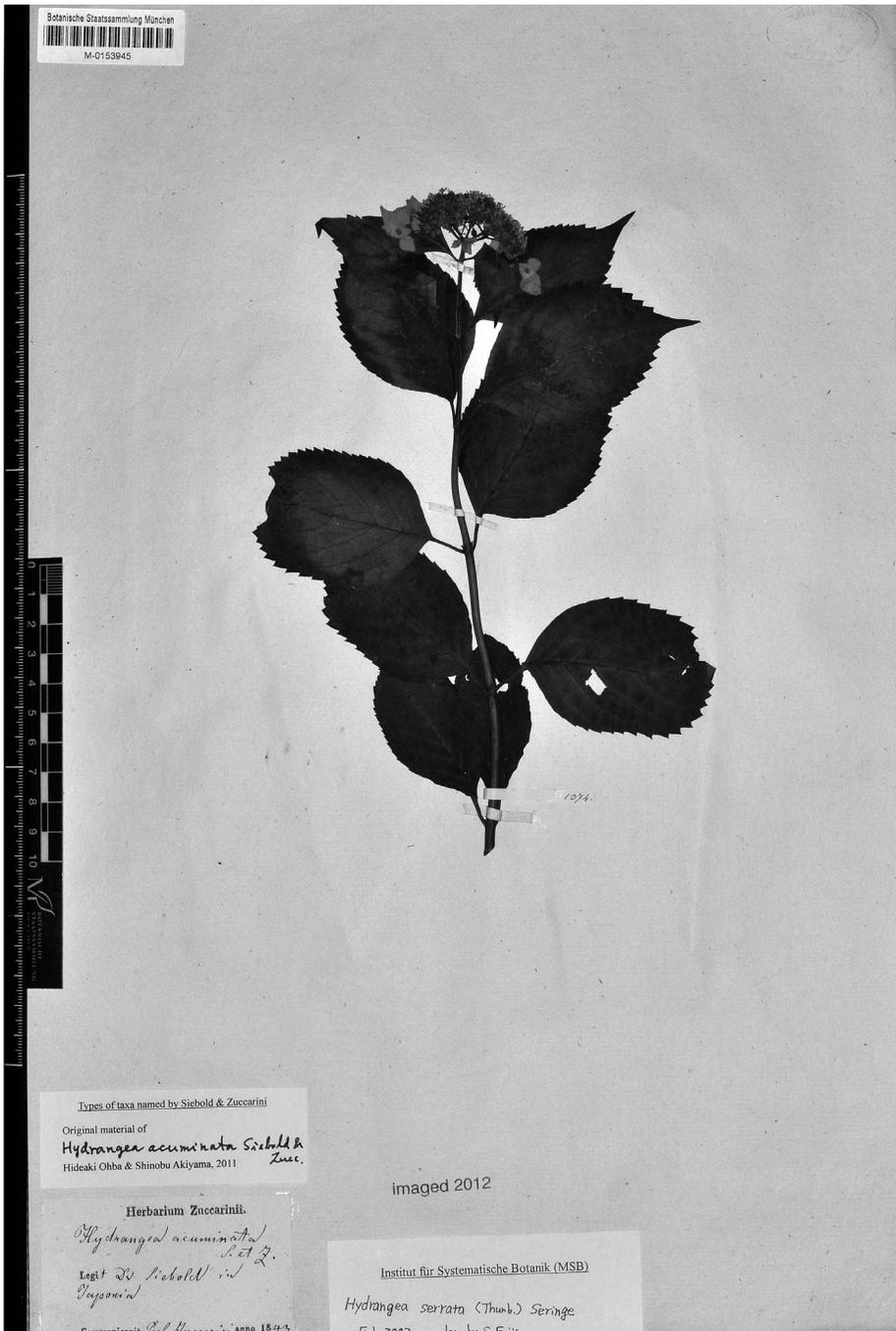


Fig. 2. Original material of *Hydrangea acuminata* Siebold & Zucc. Legit Dr Siebold in Japonia Communicavit Prof. Zuccarini anno 1843 (M 0153945).



Fig. 3. *Hydrangea acuminata* Siebold & Zucc. Textor (L 0421811).

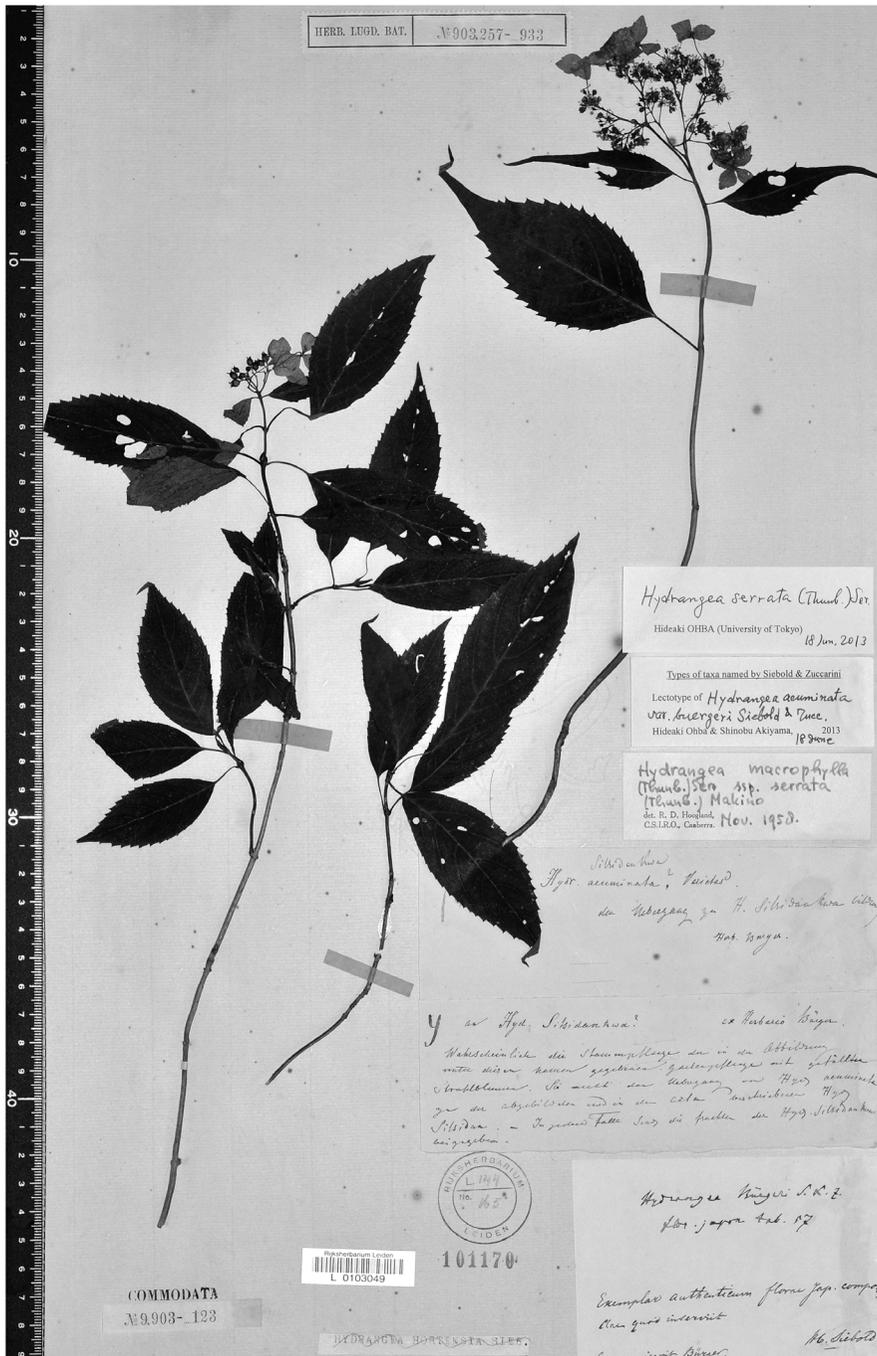


Fig. 4. Lectotype of *Hydrangea acuminata* Siebold & Zucc. var. *buergeri* Siebold & Zucc. Herb. Bürger (Communicavit Bürger, Hb. Siebold) (L 0103049).



Fig. 5. Lectotype of *Hydrangea belzoni* Siebold & Zucc. Hb. von Siebold (L 0329008).



Fig. 6. *Hydrangea belzonii* Siebold & Zucc. Siebold? (L 0329007).

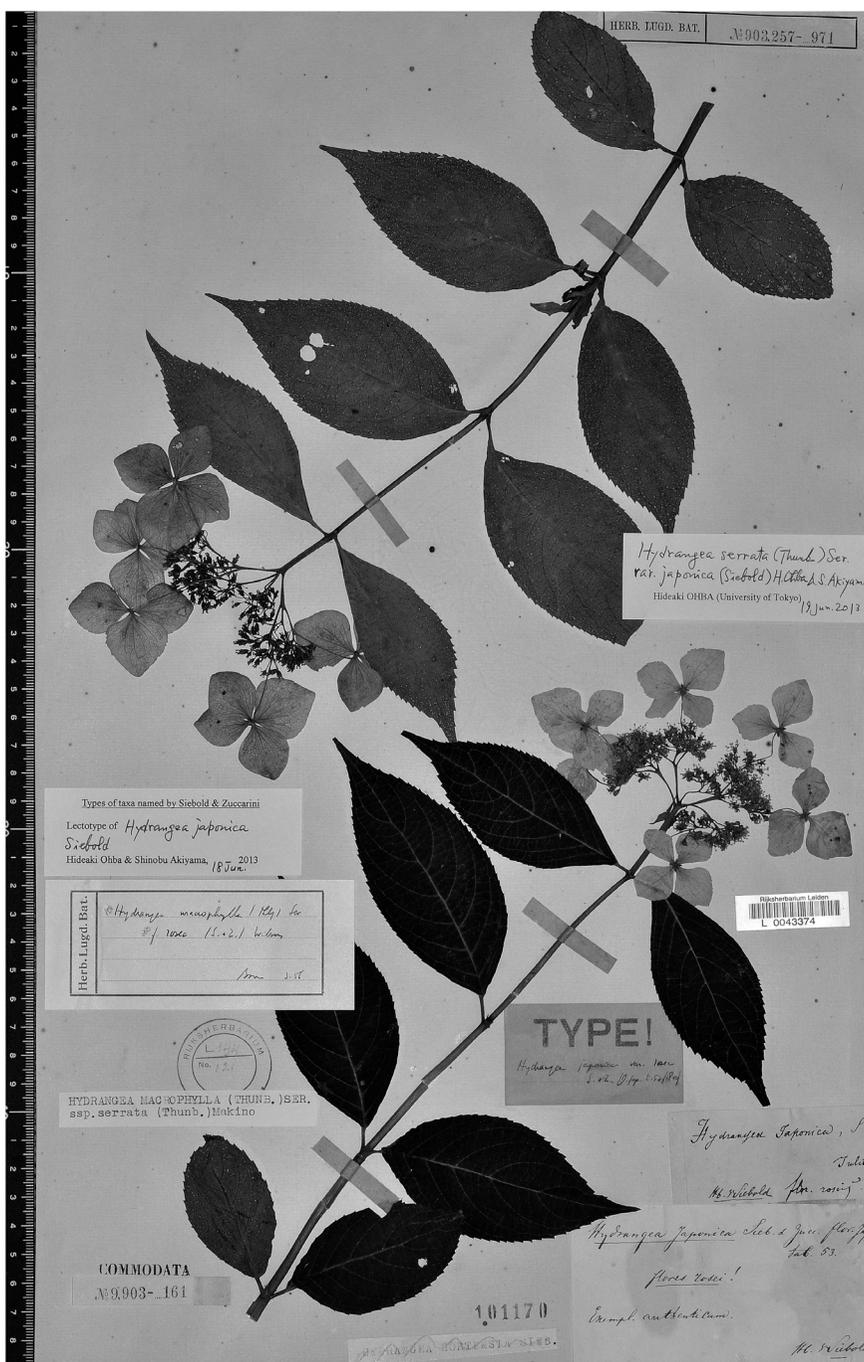


Fig. 7. Lectotype of *Hydrangea japonica* Siebold. Hb. v Siebold, in July (L 0043374).



Fig. 8. *Hydrangea japonica* Siebold. Bürger s.n. (L 0103050).

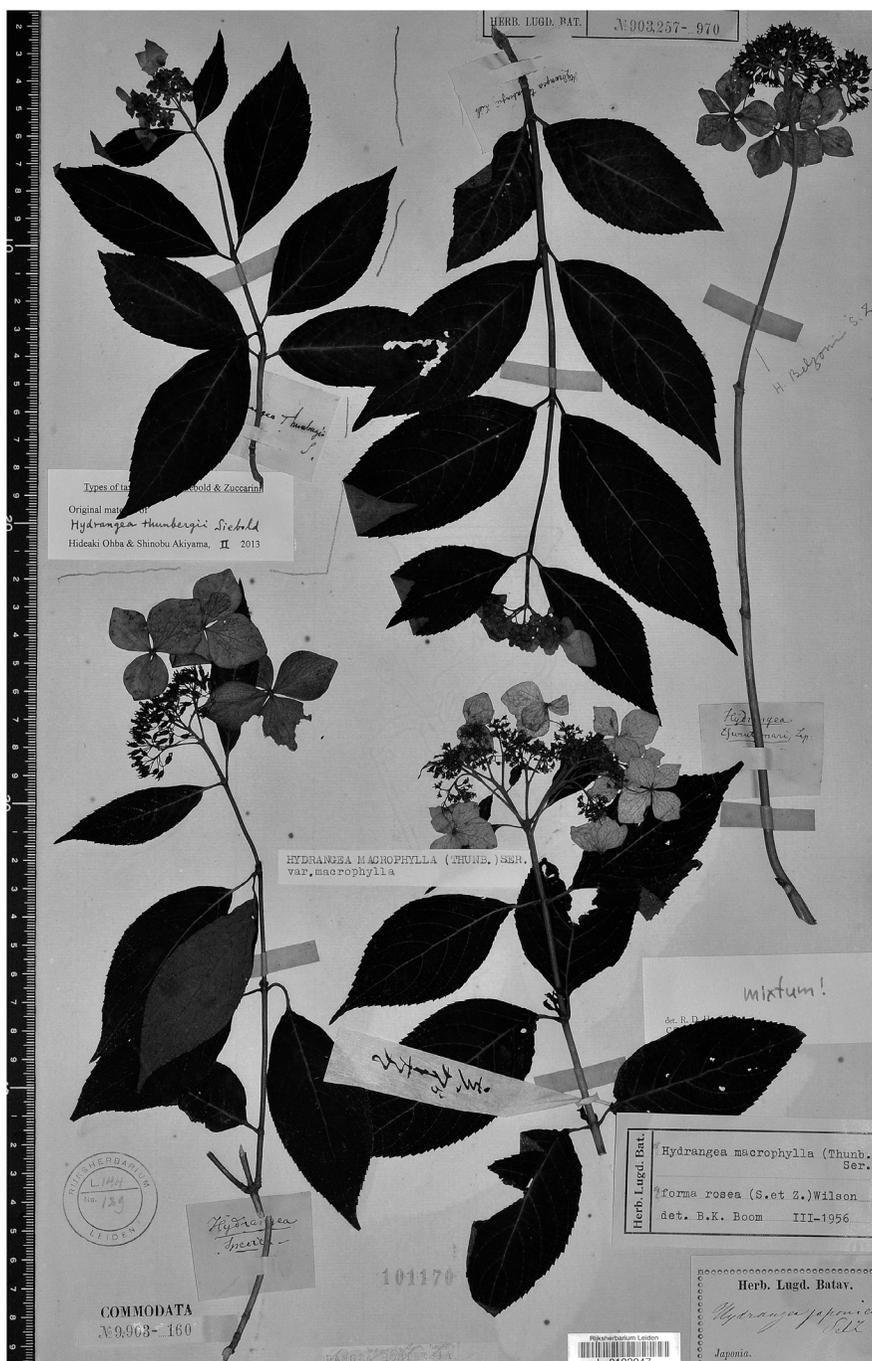


Fig. 9. *Hydrangea japonica* Siebold (original material of *H. thunbergii*). Bürger s.n. (L 0103047).

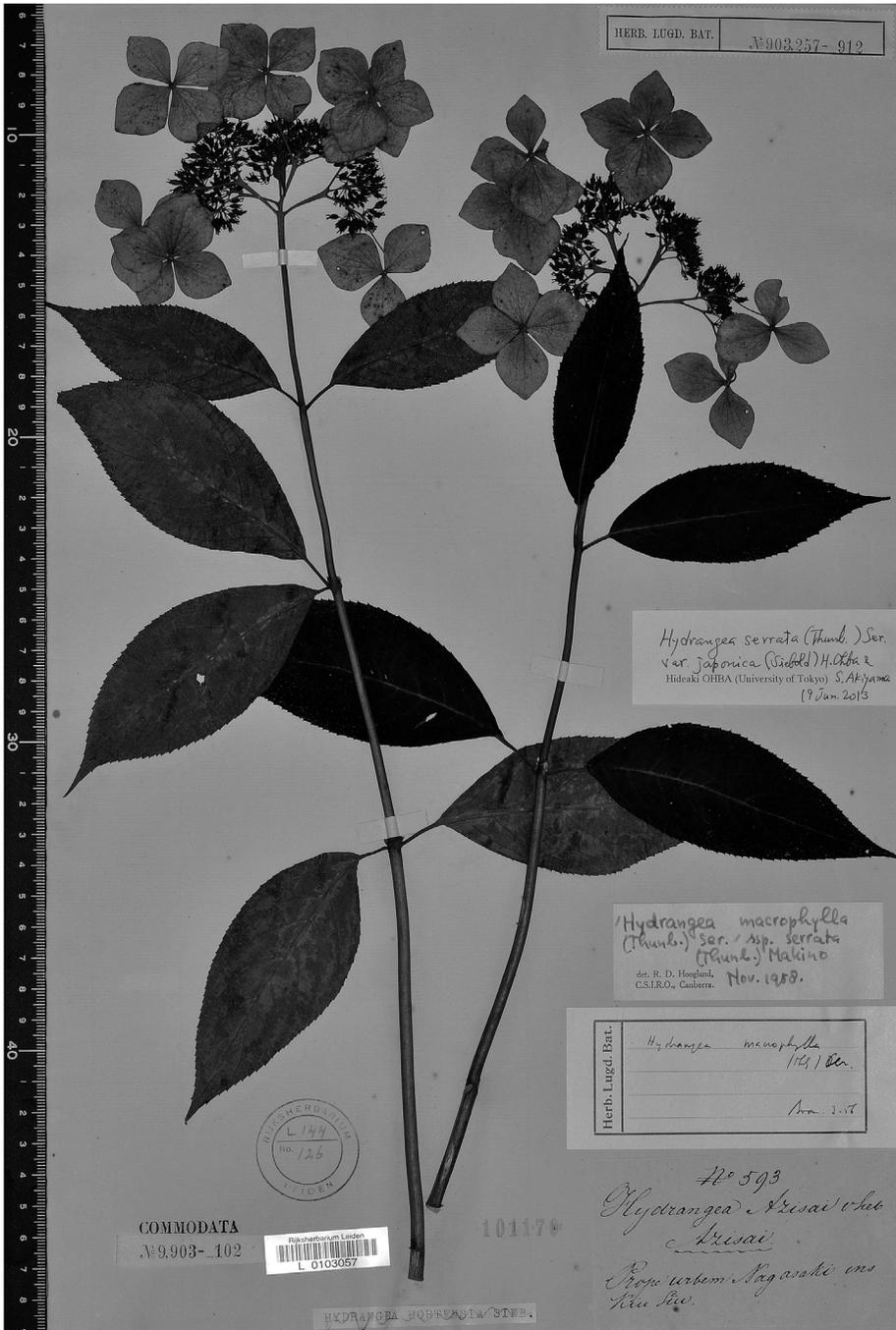


Fig. 10. *Hydrangea japonica* Siebold. Pierot 593 (L 0103057).

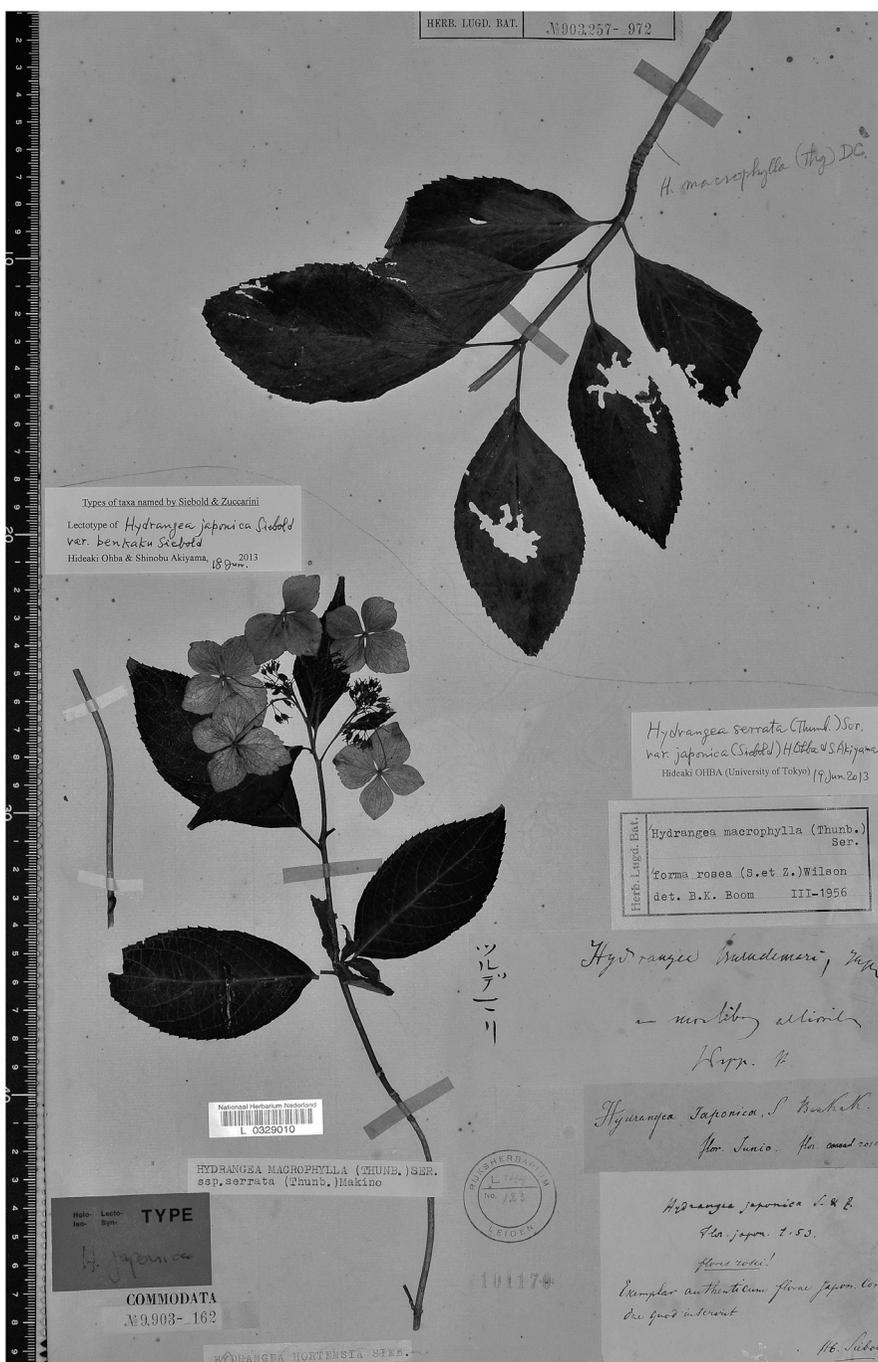


Fig. 11. Lectotype of *Hydrangea japonica* Siebold var. *benkaku* Siebold Hb. Siebold (L 0329010 [lower]).

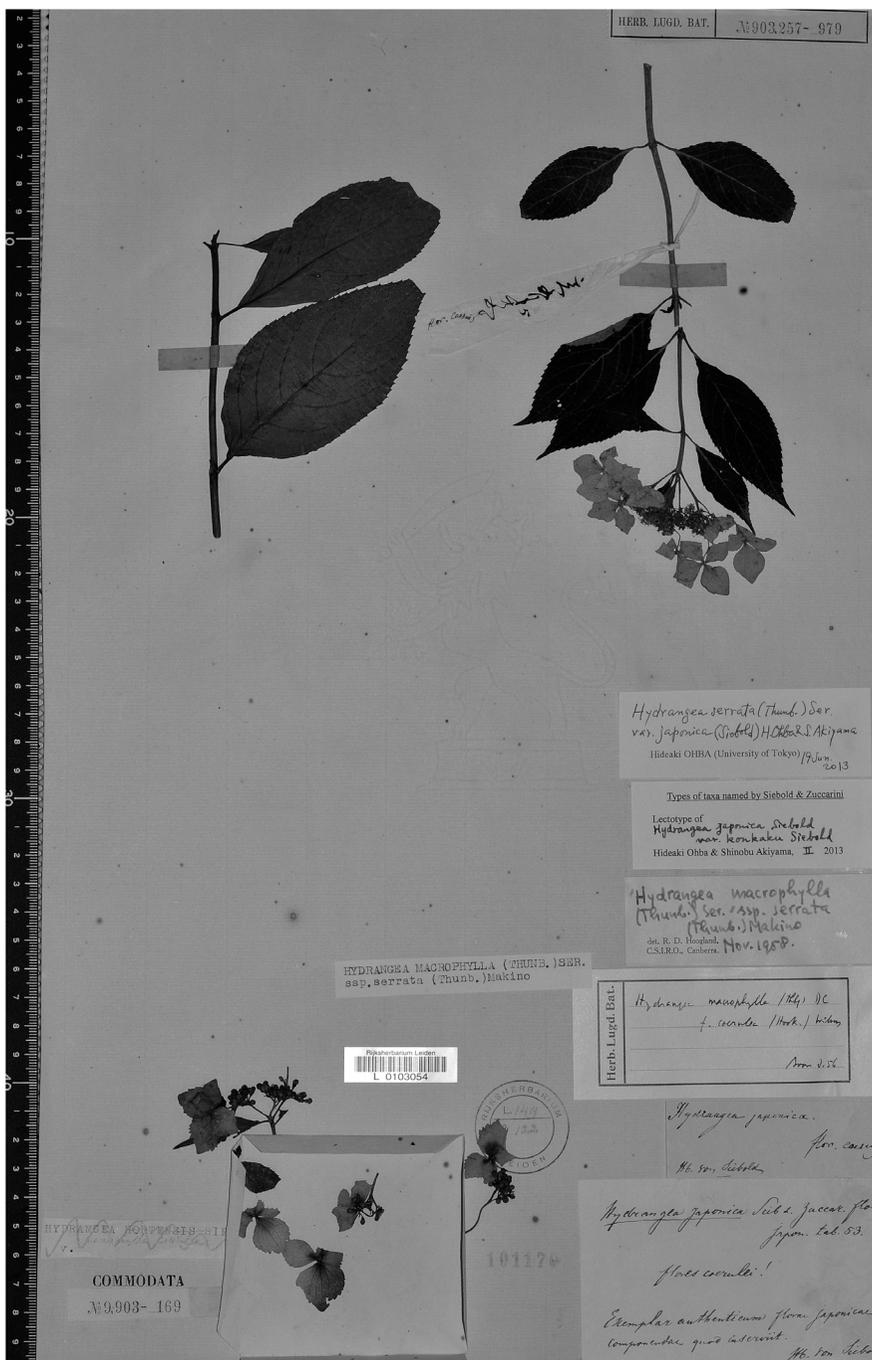


Fig. 12. Lectotype of *Hydrangea japonica* Siebold var. *konkaku* Siebold. Hb. von Siebold (L 0103054).

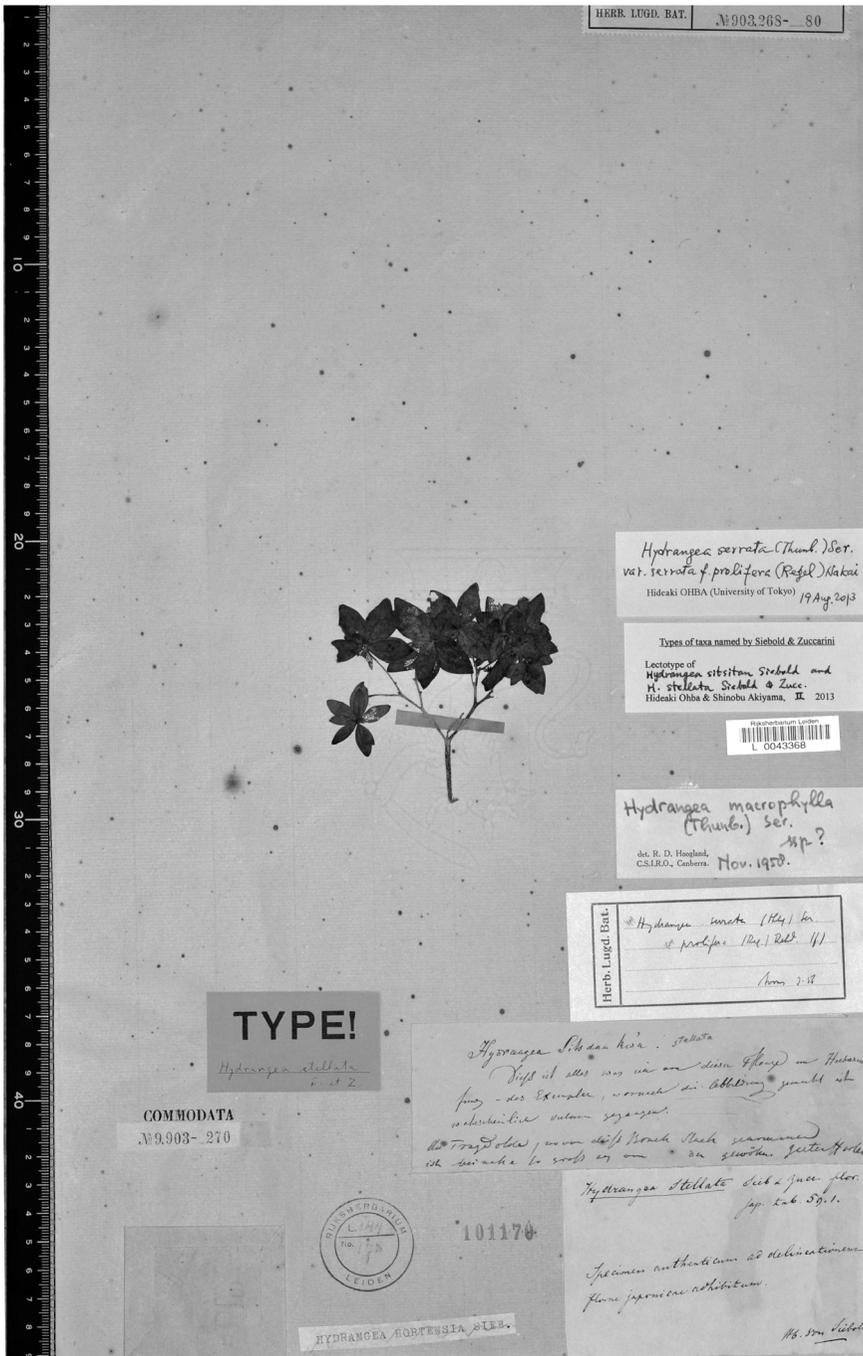


Fig. 13. Lectotype of *Hydrangea sitsitan* Siebold and *H. stellata* Siebold & Zucc. Hb. von Siebold (L 0043368).

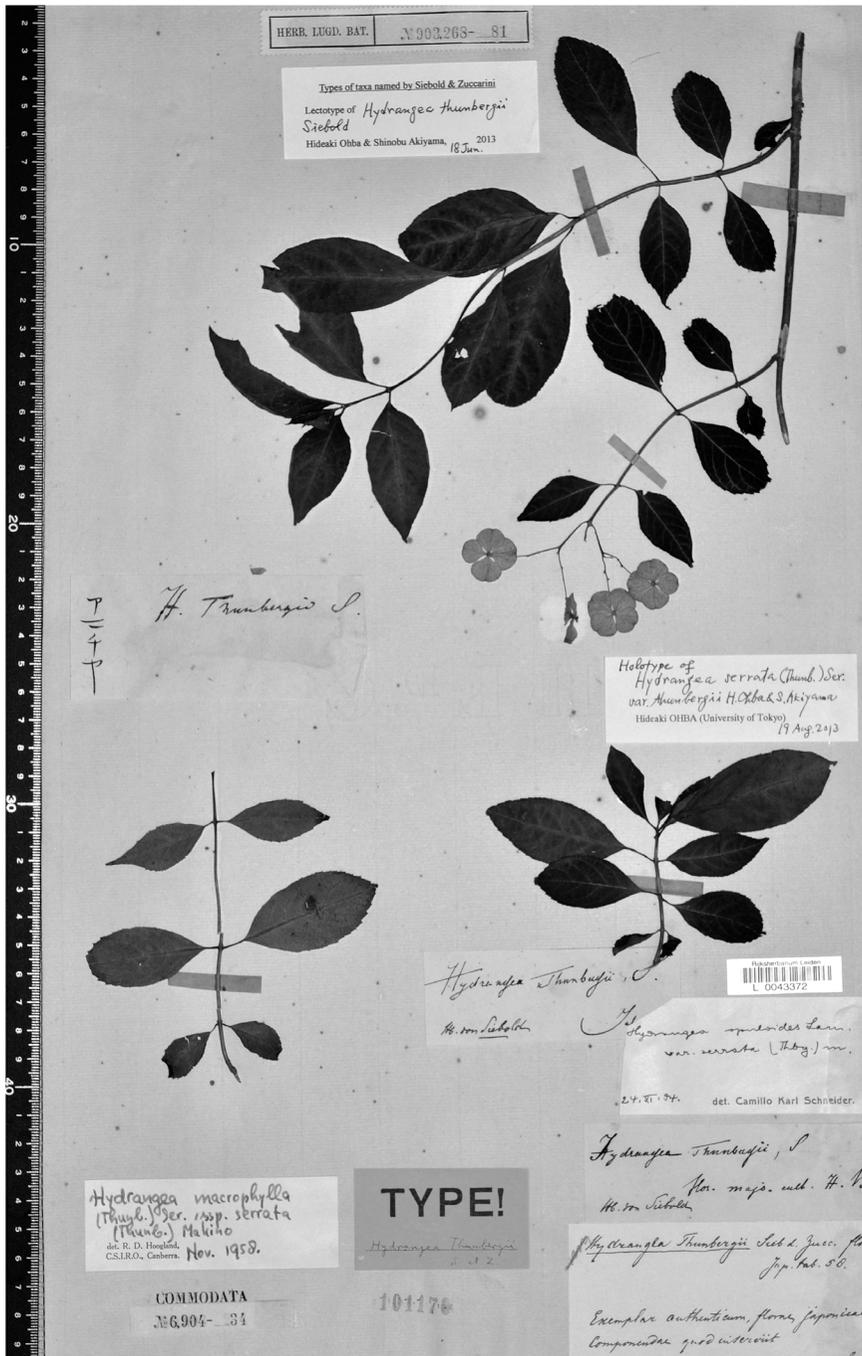


Fig. 14. Authentic specimen of *Hydrangea thunbergii* Siebold [sensu Siebold] and holotype of *H. serrata* (Thunb.) Ser. var. *thunbergii* H. Ohba & S. Akiyama. Hb. von Siebold, in July (L 0043372).