

Plantae
Wilsonianae

Volume 1

PLANTAE WILSONIANAE

AN ENUMERATION OF THE WOODY PLANTS
COLLECTED IN WESTERN CHINA FOR THE
ARNOLD ARBORETUM OF HARVARD
UNIVERSITY DURING THE YEARS

1907, 1908, AND 1910

BY E. H. WILSON

EDITED BY

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VOLUME I



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PREFACE

ALTHOUGH important collections of plants had been made in western Szech'uan by the French missionary Armand David as early as 1870, the world knew little of the remarkable beauty and richness of the flora of west central China until Augustine Henry, an officer of the Chinese Imperial Maritime Customs Service stationed at Ichang from 1882 to 1889, sent to England the dried plants which he had collected in western Hupeh. An examination of these collections, the first of which reached England in 1886, disclosed many new genera and a great number of new species. Henry collected only herbarium specimens and a few lily bulbs, and took no steps to introduce into western gardens his remarkable discoveries.

It was evident, however, that from no other part of the world could so many new plants suitable to adorn the parks and gardens of temperate climates be found as in western China; and in 1897 I advised the late James H. Veitch, at that time the Managing Director of the well-known nursery firm of James H. Veitch & Sons, of London, to send a collector to Hupeh to collect the seeds of Henry's interesting discoveries, and to make additional observations on the flora of that region.

Mr. E. H. Wilson, a student at the Royal College of Science, South Kensington, and previously a young gardener in the Royal Gardens at Kew, then twenty-three years old, was selected on the recommendation of Sir William T. Thiselton-Dyer for the undertaking. He left England on April 11, 1899, traveling by the way of Boston in order to visit the Arboretum, and then, after a short stay in Yunnan, where he went to confer with Dr. Henry, who was then stationed at Szemao, he reached Ichang

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early in February, 1900. The next two years were devoted by him to collecting in the mountains of western Hupeh. From this journey Wilson returned to England in April, 1902, and went to China again in January of the following year with a special commission to collect *Meconopsis integrifolia*, found only in the alpine regions of the Thibetan border, which he now explored for the first time. During these two journeys Wilson sent to England the seeds of a large number of plants and many lily bulbs, and made a considerable herbarium. His work, however, in western China, was not completed. Under instructions from Mr. Veitch, Wilson had paid attention only to plants of supposed horticultural value, and had neglected conifers and many other important plants almost entirely, no one then suspecting that on the slopes of the mountains which rise from the plains of China to the Thibetan plateau is probably the greatest aggregation of conifers in the world.

It seemed desirable, therefore, that the work which Wilson had so well begun should be completed, and the Arboretum was fortunate in securing his services for another Chinese exploring expedition. He left Boston on this journey on December 31, 1906, and returned in May, 1909. This journey was very successful. He sent back seeds, often in large quantities, of more than 1000 species of trees and shrubs, many lily bulbs, the cuttings of willows and poplars, the roots of a few other trees and shrubs, an herbarium of about 50,000 sheets, and a collection of 720 photographs. In the autumn of 1908, when he was among the forests of conifers, these trees were not bearing cones. It was important that these trees should be introduced into the Arboretum, and in April, 1910, Wilson, for the fourth time, went to China for the purpose of carrying out this plan, returning a year later with large and valuable collections.

In the *Plantae Wilsonianae* is found an account of the specimens collected by Wilson in these two journeys, with descriptions of new species and varieties, and the enumeration of several important groups as they are represented in China. It is impossible yet to form an accurate opinion of the number of new

species discovered by Wilson in his four journeys. It is safe to say that few travelers, however, have discovered as many new plants; certainly no other man has ever introduced so many woody plants of exceptional interest and value into cultivation. This will appear when it is realized that in the first volume of the *Plantae Wilsonianae*, which we believe contains the enumeration of about one-half of Wilson's Arboretum collections, there are described two new genera, two hundred and twenty-five new species and one hundred and sixty-two new varieties of woody plants. In earlier publications have appeared descriptions of two new genera and about one hundred new species of woody plants discovered by Wilson in his first journeys.

In the preparation of this work the Arboretum is indebted to a number of European specialists who have elaborated several different groups, and I take this opportunity to extend to them the cordial thanks of the Arboretum.

C. S. SARGENT.

MAY, 1913.

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PINACEAE.

PINUS L.

Determined by GEORGE RUSSELL SHAW.

Pinus Armandii Franchet in *Now. Arch. Mus. Paris*, sér. 2, VII. 95, 96 t. 12 (*Pl. David*. I. 285) (1884).

Pinus sciptioniformis Masters in *Bull. Herb. Boissier*, VI. 270 (1898).

Pinus koraiensis Masters in *Gard. Chron.* ser. 3, XXXIII. 34, f. 18, 19 (not Siebold & Zuccarini) (1903).

Pinus Mastersiana Hayata in *Gard. Chron.* ser. 3, XLIII. 194 (1898).

Pinus Armandii, var. *Mastersiana* Hayata in *Jour. Coll. Sci. Tokyo*, XXV. art. XLX. 215, f. 8 (*Fl. Mont. Formos.*) (1908).

Western Hupeh: Sze-kou-tze, east of Hsing-shan Hsien, December 1907 (No. 2505); northwest of Hsing-shan Hsien, alt. 2000 m., September 1907 (No. 2506); Ta-wan, alt. 1500 m., June and July 1907 (No. 2509); Hsing-shan Hsien, July 1907 (No. 2511). Western Szech'uan: Wa-ssu country and mountains west of Wên-ehuan Hsien, alt. 1500-2500 m., July and November 1908 (No. 1151); Fei-yueh-ling, Ching-chi Hsien, alt. 2500-2800 m., August 1908 (No. 1387); Pan-lan-shan and Tachien-lu, alt. 2500-3300 m., June and November 1908 (No. 1470).

Pinus Bungeana Zuccarini in Endlicher, *Syn. Conif.* 166 (1847).

Western Hupeh: Pa-tung Hsien, November 1907, January 1909 (No. 2512).

It is interesting that this species, originally described from cultivated plants near Peking, was found by Mr. Wilson growing wild on the mountains of Hupeh.

Pinus Massoniana Lambert, *Gen. Pin.* I. 17, t. 12 (1803).

Western Hupeh: Hsing-shan Hsien, alt. 1300-1500 m., July 1907 and January 1909 (No. 1469); Ichang and vicinity, alt. 1000-1500 m., December 1907 (No. 1480); alt. 1300 m., April and December 1907 (No. 1481); alt. up to 1300 m., May and December 1907 (No. 2503); Chang-yang Hsien, alt. 1500 m., November 1907 (No. 1482). Western Szech'uan: Wa-shan, alt. 1300 m., November 1908 (No. 1378); alt. 1100-1500 m., September 1908 (No. 1476); Kia-ting and vicinity,

west to Mupin, alt. up to 1000 m., May and November 1908 (No. 1468). Kiangsi: foot hills about Kiu-kiang, alt. 300 m., August 1907 (No. 1744). Hongkong: Happy Valley, alt. sea-level-600 m., April 1909 (No. 1483).

Pinus densiflora Siebold & Zuccarini, *Fl. Jap.* II. 22, t. 112 (1842).

Pinus Henryi Masters in *Jour. Linn. Soc.* XXVI. 550 (1902).

Western Hupeh: Hsing-shan Hsien, July 1907 (No. 1484); alt. 1300 m., May 1907 (No. 1490); alt. 1500 m., January 1908 (No. 1495); alt. 1300 m., July 1907 (No. 1497); alt. 1600 m., May 1907 (No. 1498); alt. 1600 m., May 1907 (No. 1499); Sheng-ting-chia, May 1907 (No. 1496); Sze-kou-tze, east of Hsing-shan Hsien, alt. 1300-2000 m., December 1907, January 1908 (No. 1485); Ma-fou-ling, west of Hsing-shan Hsien, alt. 1500-2000 m., January 1908 (No. 1486); alt. 1600 m., January 1908 (No. 1487); Fang Hsien, alt. 1600-2500 m., May 1907 (Nos. 1488, 1494); Ta-wan, Patung Hsien, alt. 2200 m., May, July and December 1907 (No. 1489); northwest of Hsing-shan Hsien, alt. 1600 m., January 1909 (No. 1492). Kiangsi: Ku-ling, alt. 1500 m., July 1907 (No. 1745); alt. 1400 m., August 1907 (No. 1747).

Pinus yunnanensis, Franchet in *Jour. de Bot.* XIII. 253 (1899).

Western Szech'uan: Mupin and vicinity, alt. 1600-2300 m., November 1908 (No. 1097); Wa-ssu country, Wên-chuan Hsien, alt. 1600-2300 m., November 1908 (Nos. 1369, 1370); 12 kilometers from Mupin, Yung-tsen, alt. 1300 m., November 1908 (No. 1376); Mupin, alt. 1300-1600 m., November 1908 (Nos. 1390, 1395); alt. 1300-2000 m. (No. 1399); alt. 1600 m. (No. 1464); Nitou, Chin-chi Hsien, alt. 1500-1600 m., November 1908 (No. 1393); Malie, Wa-shan, alt. 1600 m., November 1908 (No. 1394); Tung Valley, alt. 1300-1600 m., November 1908 (No. 1396); Wa-shan, alt. 1600 m., September 1908 (No. 1471); Mupin, alt. 1500-2000 m., November 1908 (No. 1472); descent from Tachien-lu, alt. 2300 m., August 1908 (No. 2501).

Pinus densata Masters in *Jour. Linn. Soc.* XXXVII. 416 (1906).

Pinus prominens Masters in *Jour. Linn. Soc.* XXXVII. 417 (1906).

Western Szech'uan: Chito village, 16 kilometers west of Tachien-lu, alt. 3300 m., July 1908 (No. 905); Wa-ssu country, Wên-chuan Hsien, alt. 1600-2300 m., November 1908 (No. 1368); 20 kilometers north of Tachien-lu, alt. 2800-3300 m., October 1908 (No. 1397); Tung Valley, alt. 1100 m., October 1908 (No. 1398); Orang-

che, Valley of Ya-lung, type locality, alt. 3000-3600 m., October 1908 (Nos. 1465, 1466, 1467, 1478); alt. 4000 m. (No. 1479); forests of Ta-pao-shan, northeast of Tachien-lu, alt. 3500 m., July 1908 (No. 1491); descent of Hsao-chin-ho, Mou-kong-ting, alt. 2300-2600 m., June 1908 (No. 1500); north of Tachien-lu, alt. 3300 m., July 1908 (No. 2502); Moshi mien, southeast of Tachien-lu, alt. 1600-2000 m., October 1908 (No. 2504); Sung-pan, alt. 2600-3000 m., 1910 (No. 4055); no locality, 1910 (No. 4073).

***Pinus Wilsonii* Shaw, n. sp.**

Arbor excelsa foliis geminis rigidis 7-10 cm. longis, canalibus resiniferis numerosis in textura virente externis, strobilis solitariis v. 2-3 verticillatis, junioribus subterminalibus mucronatis, adultis 4-6 cm. longis ovato-conicis obtusis subconformatis pedunculatis patulis v. reflexis persistentibus in aetate matura dehiscentibus, squamarum apophysi subelevato-pyramidata nitido-fusca, umbone prominente saepe mucronato.

Western Szech'uan: Wa-ssu country, alt. 1600-2300 m., May and July 1908 (No. 1475); Wa-shan, alt. 2000 m., September 1908 (No. 1477); Mao-chou, alt. 1900 m., May 1908, type specimen (No. 1493); Niu-tow-shan, west of Kuan Hsien, alt. 2300 m., June 1908 (No. 2500); Min Valley, 1910 (No. 4056).

In many particulars this Pine resembles the previous species and ultimately may be united with it; the principal difference lies in its subsymmetrical cone and its possibly invariable number of fascicle leaves. The species is established on the representation of Mr. Wilson, who considers it entirely distinct from all the other Pines that he has seen in China.

SAXIFRAGACEAE.

PHILADELPHUS L.

Determined by E. KOEHNE.

Philadelphus subcanus Koehne in *Mitt. Deutsch. Dendr. Ges.* XIII. 83 (1904). — Schneider, *Ill. Handb. Laubholz.* I. 369 (1905).

Western Szech'uan: Mupin, thickets, alt. 1500–2100 m., June 1908 (No. 3039); Wa-shan, thickets, alt. 2100–2400 m., June 1908 (No. 3040); southeast of Tachien-lu, thickets, alt. 1800–2300 m., June 1908 (No. 3042); Wa-ssu country, Wên-chuan Hsien, alt. 1800–2300 m., July 1908 (No. 3043).

I formerly found the style pilose, but now I find it glabrous in some flowers of Wilson's specimens.

Philadelphus subcanus, var. *dubius* Koehne, n. var.

Ramuli floriferi etiam infra racemum laxe pilosi (in typo ibidem glabri). Folia subtus etiam inter nervos dense pilosa, interdum etiam supra pilosa. Stylus saepe glaber.

Western Szech'uan: Pan-lan-shan, west of Kuan Hsien, alt. 1500–2300 m., June 1908 (No. 3044); Min valley, Kuan Hsien, alt. 900 m., June 2, 1908 (No. 3045).

By its leaves being pilose also on the upper surface this variety seems to approach *P. Magdalenae* Koehne, but in that species the ovaries and sepals are brownish violet outside which I have never observed in *P. subcanus*. No. 3045 and part of No. 3044 have the leaves on the upper surface and the style glabrous, while one part of No. 3044 has the leaves above and the style at the base pilose.

Philadelphus Wilsonii Koehne, n. sp.

Frutex 2 m. v. 3.3–6 m. altus; cortex ramorum biennium persistens albido-griseus; ramuli juveniles sub anthesi [innovationes desiderantur] fusci glabri; gemmae absconditae. Petioli 8–12 mm. longi crassiusculi, subtus laxe subaccumbenti-pilosi; lamina e basi rotundata v. contracta ovato-oblonga v. ovato-elliptica, 10–16 cm. longa, 4.8–7.6 cm. lata, infimis supremisque binis exceptis multoties minoribus, leviter longiuscule v. breviter acuminata, denticulata denticulis sat remotis ad mucronem reductis, supra pilis brevissimis remotissimis

conspersa, subtus in costa nervis venisque validioribus sat dense, inter venas laxius molliuscule pilosa, fructificationis tempore subglabra, membranacea, nervorum paribus 2 rarius 3. Racemi 13-14 cm. longi, laxi, 9-11-flori, axi glabro v. pilis remotissimis paucissimis consperso; florum paria 1-2 infima foliis magnis, sequens foliis parvis, cetera bracteis hypsophylloideis fugacibus suffulta; pedicelli inferiores 10-15 mm. longi, ceteri subdecrecentes, pilis erecto-patentibus subcinerei; ovarium 5 mm. longum, ut sepala ad 7 mm. longa fuscescens pilis mollibus teneris accumbentibus breviusculis subcinerea; sepala intus basi excepta albo-tomentosa; corolla alba, circiter 3.3 cm. lata, petala ovali-orbicularia; stamina circ. 28, dimidiam petalorum partem paullo superantia ad 9 mm. longa; stylus 9-11 mm. longus stamina aequans v. paullo superans, basi, ut discus sat planus, molliter pilosus (in fructibus vero pilos non vidi), usque ad stigmata indivisus; stigmata secus marginem anteriorem antheras longitudine aequantia. Capsula 9-12 mm. longa, apice convexo glabro sepalorum insertionem triente fere superans.

Western Szech'uan: Wa-ssu country, Wên-chuan Hsien, alt. 1500-2700 m., July 1908 (No. 3041). Western Hupeh: Fang Hsien, alt. 2100 m., November 1907 (No. 581).

Allied to *P. subcanus* from which it chiefly differs in the unusually large leaves of the flowering branchlets. No. 581, though differing from the type in the subglabrous leaves and the glabrous apex of the fruit, probably belongs to this species.

Philadelphus incanus Koehne in *Gartenfl.* XLV. 562 (excludenda planta Henry No. 8823 quae ad *P. subcanum* pertinet) (1896). — Schneider, *Ill. Handb. Laubholz.* I. 370 (1905).

Western Hupeh: Hsing-shan Hsien, thickets, alt. 1200-1800 m., June and October 1907 (No. 574), April 1907 (No. 3048), May 1907 (No. 3054), July 1907 (No. 3055); north of Ichang, thickets, alt. 1200-2100 m., July and November 1907 (No. 583); north and south of Ichang, thickets, alt. 1200-1800 m., June 1907 (No. 3049); Fang Hsien, thickets, alt. 1500-2100 m., July 1907 (No. 3047); Changyang Hsien, alt. 1200-1800 m., June 1907 (No. 3050); Chang-lo Hsien, alt. 600-1200 m., June 1907 (No. 3051), alt. 1200-1800 m., June 1907 (No. 3052); Patung Hsien, thickets, alt. 1200 m., July 1907 (No. 3053).

Besides in other characters it differs from *P. subcanus* in the longer and more rigid hairs which cover the ovary and the sepals.

Philadelphus brachybotrys Koehne, n. sp.

Philadelphus pekinensis, var. *brachybotrys* Koehne in *Mitt. Deutsch. Dendr. Ges.* XIII. 84 (1904). — Schneider, *Ill. Handb. Laubholz.* I. 373 (1904).

This is not a variety of *P. pekinensis* Ruprecht (sect. *Coronarii*), but belongs to the section *Salsumani*, on account of the two years old branches having a close gray or brownish gray bark often divided by numerous horizontal cracks.

***Philadelphus brachybotrys*, var. *purpurascens* Koehne, n. var.**

Frutex 1.4–6 m. altus. Petioli in ramulis florentibus 1–2 mm. longi, laxe pilosi v. glabri, in innovationibus ad 4 mm. longi, laxe pilosi; lamina in innovationum foliis 3.5–5 cm. longa, 1.3–2.2 cm. lata, utrinsecus dentes 3–8 ad 0.6 mm. longos gerens, ciliata, in ramulorum florentium foliis 0.8–3.2 cm. longa, 0.5–1.7 cm. lata, denticulis minutis paucis, supra ut in typo laxe pilosa, subtus vero nonnisi in nervis primariis pilis longiusculis rigidis accumbentibus obsita v. interdum glabra; nervorum paria plerumque 2. Ramuli florentes 3–8.5 cm. longi adjecto racemo 2–4.5 cm. longo 3–7-floro, axi glabro; pedicelli infimi 6–8 mm. longi, glabri, ut axis ovaria sepalaque saepe purpurascens; corolla alba 1.8–2.7 cm. diam., petala ovali-rotundata, 10–14 mm. longa, 8–10 mm. lata; stamina 32, 33. Stylus vix ultra medium indivisus. Fructus 8 mm. longus, 6 mm. diam., tertia parte convexa sepalorum insertionem superans.

Western Szech'uan: Ta-p'ao-shan, northeast of Tachien-lu, thickets, alt. 2750–3200 m., July 3, 1908 (No. 3046); west of Tachien-lu, thickets, alt. 3000 m., June and October 1908 (No. 1346).

DEUTZIA Thunb.

Determined by ALFRED REHDER.

Deutzia scabra Thunberg, *Fl. Jap.* 185, t. 24 (1784). — Lindley in *Bot. Reg.* XX. t. 1713 (1835). — Hooker in *Bot. Mag.* LXVII. t. 3838 (1841). — Hemsley in *Jour. Linn. Soc.* XXXIII. 276 (1887). — Schneider, *Ill. Handb. Laubholz.*, I. 379, fig. 242 1–q, 243 a–f (1905).

D. crenata Siebold & Zuccarini, *Fl. Jap.*, I. 19, t. 6 (1835). — Maximowicz in *Mém. Acad. Sci. St. Pétersb. sér. 7*, X. No. XVI. 22, t. 2, fig. 27–31 (1867).
Deutzia Fortunei, Carrière in *Rev. Hort.*, 1866, p. 338.

Kiangsi: Kuling, abundant, alt. 1200 m., July 29, 1907 (No. 1569).
Kiangsu: *Stronach* (ex Hemsley).

The Kiangsi specimen has remarkably large capsules, about 7 mm. in diameter, and large leaves ovate-oblong to lanceolate and broadly cuneate at the base. Hemsley cites also specimens from Hupeh and Formosa; the first quotation probably refers to the following species, the second to *D. taiwanensis*.

Deutzia Schneideriana Rehder, n. sp.

Deutzia staminea Hemsley in *Jour. Linn. Soc.* XXIII. 277 (not R. Brown) (1888).

Deutzia crenata Hemsley, l. c. (in part as to the Hupeh specimens) (not Siebold & Zuccarini).

Frutex 1-2 m. altus ramulis fusco-purpureis, initio sparse stellato-pilosis, mox glabrescentibus, vetustioribus griseo-brunneis cortice deterrentibus. Gemmae pluri-perulatae, stellato-pilosae. Folia subchartacea, elliptico-ovata, interdum ovata v. elliptico-oblonga, breviter acuminata, basi late cuneata v. interdum rotundata, argute serrulata, 3.5-7 cm. longa et 1.5-3 cm. lata, supra pilis 5-6-radiatis laxè conspersa, subtus canescentia v. albida, dense pilis 12-14-radiatis oblecta, ad venas pilis longis simplicibus instructa, utrinsecus 4-6-costata; petioli parce stellato-pilosi, 3-4 mm. longi. Inflorescentia late paniculata, 3-6 cm. longa; calyx hemisphaericus, dense stellato-pilosus dentibus triangularibus tubum subaequantibus; petala oblonga, circa 10 mm. longa, extus stellato-pilosa; stamina longiora petalis quarta parte breviora v. interdum fere aequantia, filamentis dilatatis apice manifeste dentatis dentibus antheram vix attingentibus; styli plerumque 3, graciles, stamina subaequantia. Capsula hemisphaerica, apice leviter contracta, 5-7 mm. diam., calyce deciduo.

Western Hupeh: Chang-lo Hsien, thickets, alt. 900-1200 m., June 1907 (No. 2889, type); without locality, June 1901 (Veitch Exped. No. 2152, 2152*); Ichang, A. Henry (No. 3571); without locality, A. Henry (No. 1968).

Most nearly related to *D. scabra* Thunberg, which is easily distinguished by the leaves being only sparingly stellate-pubescent and therefore green on the underside, without simple hairs on the veins, by their crenulate-serrate margin with appressed serratures and by the narrow, nearly cylindric panicles, while the related *D. hypoleuca* Maximowicz differs in its five styles and narrow panicles. I take pleasure in associating with this species the name of Mr. C. K. Schneider whose "Beitrag zur Kenntnis der Gattung Deutzia" (in *Mitt. Deutsch. Dendr. Ges.* XIII. 172-183 (1904) is a valuable contribution to the knowledge of this genus.

Deutzia Schneideriana, var. *laxiflora* Rehder, n. var.

A typo differt praecipue foliis subtus viridibus, sparsius stellato-pilosis, paniculis laxioribus latioribusque. Frutex 2-2.5 m. altus. Folia oblongo-lanceolata, acuminata, basi rotundata v. late cuneata, remote et irregulariter denticulata, 5-7 cm. longa et 1.5-2.3 cm. lata, supra pilis 4-5-radiatis sparsius, subtus pilis 10-12-radiatis densius conspersa. Panicula 6-9 cm. longa et 5-8 cm. lata, ramulis infimis floribus inclusis 4-5 cm. longis; petala 12-14 mm. longa, acutiuscula. Capsula 5 mm. diam. Ceterum ut in typo.

Western Hupeh: north and south of Ichang, alt. 900-1400 m., June and December 1907 (No. 767).

Differs from the type chiefly in the leaves being on their under side only sparingly stellate-pubescent and therefore green, and in the looser and broader panicles.

Deutzia pilosa Rehder, n. sp.

Frutex metralis ramulis fuscis, junioribus pilis longis patentibus ferrugineis instructis, secundo anno tarde glabrescentibus. Folia brevissime petiolata, membranacea, ovata v. ovali-ovata v. oblongo-ovata, longe acuminata acumine saepe falcato, basi rotundata v. subcordata, argute mucronulato-serrulata, 3-6.5 cm. longa et 1.5-3 cm. lata, concoloria, supra pilis stellatis 3-4-radiatis et insuper radio centrali longiore instructis, subtus pilis 4-6-radiatis radio centrali instructis conspersa et ad venas pilis simplicibus patentibus praedita; petioli dense pilosi, 1-2 mm. longi. Cyma 3-9-flora, rarius uniflora, bracteis lineari-lanceolatis v. ebracteata, pilis ferrugineis patentibus instructa, pedunculo gracili, 1.5-3.5 cm. longo; flores graciliter pedicellati; dentes calycis late ovati subito breviter acuminata, tubo dense pube homomorpha v. interdum heteromorpha oblecto dimidio breviores; petala oblongo-ovata, circa 8 mm. longa, extus dense stellato-pilosa; stamina petalis fere dimidio breviora, filamentis exteriorum manifeste dentatis dentibus lanceolatis falcatis antheram fere sessilem multo superantibus, interiorum lanceolatis antheram faciei interiori circa medium affixam gerentibus; styli 3-4, staminibus multo breviora, 1.5 mm. longa. Capsula subglobosa, circa 5 mm. diam., calycis dentibus persistentibus incurvis.

Western Szech'uan: west of Kuan Hsien, thickets, alt. 1200-1500 m., June 19, 1903 (No. 2896, type); Mt. Omei, May 1904 (Veitch Exped. No. 4884).

In its spreading pilose ferrugineous pubescence and its long peduncled few-flowered inflorescence this is very unlike any other species. No. 4884 differs from the type somewhat in the heteromorphous pubescence of the calyx and in the less marked development of the central ray of the hairs on the upper side of the leaves.

Deutzia setchuenensis Franch., var. *longidentata* Rehder, n. var.

Folia ovata v. oblongo-ovata, rarius oblongo-lanceolata, 4-8 cm. longa, concoloria, supra pilis plerumque 4-radiatis, subtus plerumque 6-radiatis, 5-7-radiatis rarius 8-radiatis interspersis, radio centrali destitutis conspersa. Cyma pauciflora, longe pedunculata, pedicellis gracilibus; filamenta staminum exteriorum dentibus lanceolatis antheram multo superantibus, interiorum lanceolata antheram faciei interiori infra medium affixam gerentia; ceterum ut in typo.

Western Szech'uan: Chin-ting-shan, thickets, alt. 1200-1500 m., May 25, 1908 (No. 2895).

Differs from the type chiefly in its elongated filaments much exceeding the anthers as well in the interior as in the exterior stamens, in the smaller cymes and in the green only sparingly stellate-pubescent under side of the leaves. This may be a distinct species, if the characters should prove to be constant, but as the material at hand is meagre and does not seem of quite normal development, it may be referred provisionally to *D. setchuenensis* as a variety.

***Deutzia setchuenensis* var. *corymbiflora* Rehder, n. var.**

Deutzia corymbiflora Lemoine in *Gard. Chron.*, ser. 3, XXIII. 121; XXIV. 265, fig. 76 (1898); in *Rev. Hort.*, 1898, 401, fig. 138; in *Rev. Hort. Belg.* XXV. 67 (1898). — Schneider in *Mitt. Deutsch. Dendr. Ges.* XIII. 180 (1904).

Deutzia setchuenensis Hutchinson in *Bot. Mag.* CXXXV. t. 8255 (1909).

Deutzia corymbiflora erecta Lemoine in *Jour. Soc. Hort. France*, sér. 4, III. 308 (1902).

Western Hupeh: Fang Hsien, thickets, alt. 900-1500 m., June 1910 (No. 4486). — Originally introduced into cultivation from eastern Szech'uan.

Differs from the type chiefly in the denser more or less heteromorphous pubescence of the leaves and the many-flowered inflorescence with the pedicels as long or shorter than the calyx. *Deutzia corymbiflora erecta* Lemoine differs slightly in its more ascending branchlets, smaller inflorescence and narrower leaves with sometimes nearly homomorphous pubescence. The *Deutzia* figured by Burvenich (in *Rev. Hort. Bel.* XXVII. 157, t.) as *D. corymbiflora* does not belong here, but is apparently *D. purpurascens* (Franchet) Rehder or one of its hybrids.

***Deutzia coriacea* Rehder, n. sp.**

Frutex metralis ramulis annotinis cinereo-fuscis peridermate tarde decorticante, hornotinis fusco-flavidis glabris. Gemmae parvae perulis 4 exterioribus stellato-pilosis. Folia coriacea partim per secundum annum persistentia, ovata, acuminata, basi rotundata v. late cuneata, spinoso-dentata, 3-5.5 cm. longa et 2-3 cm. lata, supra glaberrima, nitida, flavido-viridia, subtus pallide viridia, pilis minutis, 5-7-radiatis conspersa, utrinsecus 4-6-costata; petioli purpurascens, glabri, 5-7 mm. longi. Cymae e gemmis lateralibus et terminalibus aphyllis orientes, pedunculo 2-5 mm. longo, rarius longiori insidentes, 5-9-florae; flores desiderantur. Capsulae breviter pedicellatae, ovoideo-hemisphaericae leviter costatae, circa 4 mm. longae, pube homomorpha stellato vestitae; calycis dentes capsula dimidio breviores, late triangulares, erecti v. leviter incurvi; styli 3, circa 2 mm. longi, persistentes.

Eastern Szech'uan: Taning Hsien, limestone cliffs, alt. 600 m., June 26, 1910 (No. 4481).

Deutzia coriacea is a very striking species with its coriaceous lustrous almost spiny foliage; it is most nearly related to *D. Fargesii* Franchet, which is easily dis-

anguished by its long-peduncled lax inflorescence and by the narrower, thinner, denticulate, scarcely lustrous leaves.

Deutzia Fargesii Franchet in *Jour. de Bot.* X. 231 (1890).

Western Hupeh: Fang Hsien, thickets, alt. 900-1200 m., June 1910 (No. 4488). Eastern Szech'uan: Ky-min-se, near Chang-k'on, *R. P. Farges* (No. 1043).

Franchet describes the leaves "utraque facie glabra" but they are on the under side rather densely covered with closely appressed, minute, 6-7-radiate hairs, hardly visible to the naked eye.

Deutzia glomeruliflora Franchet in *Now. Arch. Mus. Paris, sér.* 2, VIII. 236 (*Pl. David.* II. 54) (1885).

Western Szech'uan: Mupin, April 1869, *A. David* (ex Franchet); Mupin, thickets, alt. 1800-2100 m., June and October 1908 (No. 1188); Tachien-lu, thickets, alt. 1800-2500 m., June 1908 (No. 2891), alt. 1300-2700 m., June 1908 (No. 2901); valley of Hsao-chin Ho, near Monkong Ting, alt. 2100-2400 m., June 1908 (No. 2899); Cheto-shan, southwest of Tachien-lu, alt. 3500 m., October 1910 (No. 4383); no locality, May 1904 (Veitch Exped. No. 3568). Yunnan: woods near Fang-yang-chang, alt. 3000 m., June 7, 1888, *J. M. Delavay*.

Wilson's specimens show a wide range of variation. His No. 2891, with its small and dense inflorescences on short branchlets bearing only a few small leaves and sometimes nearly leafless, seems nearest to the type. All his specimens, however, have the flowers larger than those described by Franchet, particularly No. 2901, which has the petals 14 mm. long and 10 mm. broad. Sometimes, as in No. 2899, the flowers are borne on elongated branchlets with three pairs of well developed leaves. This tends to show that the type specimen does not present the normal development of the species, but a somewhat abnormal precocious state, as may be inferred from the fact that the type specimen was collected in April, while Wilson's flowering specimens were all gathered in June. No. 1188 has the pubescence of the calyx heteromorphous, as described by Franchet, while in the other specimens the pubescence is homomorphous except in Delavay's specimen from Yunnan, which differs besides in its broader leaves.

Deutzia glomeruliflora × *longifolia* Rehder, n. hybr.

Frutex 2 m. altus ramulis rubro-fuscis, junioribus stellato-pilosis, annotinis peridermate solubili. Folia ovato-oblonga v. ovato-lanceolata, acuminata, basi rotundata v. late cuneata, argute serrata, 2.5-5 cm. longa et 1-1.5 cm. lata, supra laete viridia pilis 4-5-radiatis conspersa, subtus pallidiora v. canescentia pilis 5-8-radiatis partim radio centrali instructis et ad venas etiam simplicibus et fasciculatis interspersis oblecta; petioli stellato-pilosi, circa 2 m. longi. Cyma convexa, in apice ramulorum brevium; pedicelli plerumque tubum calycis aequantibus; calycis dentes lanceolati tubum pube hetero-