

峨眉植物圖志

黃季陸題

ICONES PLANTARUM OMEIENSIIUM

Volume 2

Number 2

英國愛丁堡大學博士 方文培主編
國立四川大學植物分類學教授

Edited by

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編者主要專著目錄

1. 中國槭樹科初誌 (載中國科學社論文集植物組第七卷第六期一百四十三至一百八十九頁附圖一)
Preliminary notes on Chinese Aceraceae. Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VII, No. 6 (1932), 143-189, 1 fig.
2. 中國槭樹科再誌 (載中國科學社論文集植物組第八卷第二期一百六十二至一百八十二頁附圖七及八)
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3. 四川槭樹一新種 (載中國科學社論文集植物組第九卷二百三十五至二百三十七頁附圖二十二)
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Plate 151.

BEGONIA PEDATIFIDA Leveille.

Begoniaceae.

Section *Platycentrum*.***Begonia pedatifida*** Leveille in Fedde, Repert. Spec. Nov. VII (1909), 21.

Perennial herb, 25-30 cm. high. Rhizome thick, noded, with fibrous roots. Leaves all radical, 2-8, broad-ovate in outline, deeply and palmately partite nearly to the base, partition 5-7, pinnately lobed or dentate, sparsely setulose on both sides, acuminate at apex, cordate at base, margin irregularly serrate, 13-15 cm. long, 16-18 cm. broad; petiole sparsely setulose, 12-20 cm. long; stipules scarioso, ovate, obtuse, 10 mm. long, 8 mm. broad. Inflorescence corymbose, 5-6-flowered; peduncle glabrous, 18-20 cm. long; pedicels glabrous, 1.5-2.5 cm. long. Male flower with 4 tepals, outer 2 larger, broad ovate, obtuse at apex, sparsely pubescent outside, 18-20 mm. long, 12-15 mm. broad; inner 2 oblong ovate, obtuse, glabrous, 14-16 mm. long, 7-8 mm. broad; stamens numerous, free, anther oblong, connective obtuse or emarginate at apex, about 1 mm. long, filament 1.5-2 mm. long. Female flower with 8 tepals, outer 2 broader, ovate, obtuse, glabrous, 18-20 mm. long, 10-20 mm. broad, inner most smaller, oblong, 9-10 mm. long, 5-6 mm. broad; styles 2, free, with thick curved and papillose stigmas, 3-4 mm. long; ovary glabrous, unequally 3-winged, the larger wing triangular in shape and obtuse at apex, small ones narrow and basal, 2-celled, placenta plates 2 in each cell.

MOUNT OMEI: Pao-kuo-ssu, alt. 800 m., under thickets, shady and moist place, herb 30 cm. high, flowers white, common, *W. P. Fang*, No. 14515, June 10, 1940; Fu-hu-ssu, alt. 600 m., herbs 30-70 cm. high, flowers white, rare, *W. P. Fang*, No. 18727, May 14, 1942; same locality, herbs 60-80 cm. high, leaves green above and purplish below, deeply lobed, flowers white, *C. L. Chow*, No. 6004, May 16, 1942; Ching-ying-ko, alt. 900 m., moist place, herb 30-40 cm. high, flowers pink, rare, *L. C. Sun*, No. 578, June 19, 1939; Hung-chun-ping, alt. 1147 m., in woods, herb 30-50 cm. high, leaves green above and light green below, flowers white, anthers yellow, rare, *T. C. Lee*, No. 3153, August 2, 1940; same locality, in woods, herbs 50-80 cm. high, leaves green above and light green below, flowers white, common, *W. W. Ma*, No. 2368, June 14, 1940.

Distribution: Szechuan, Kweichow, Yunnan, south to Tonkin. Type comes from Majo, Kweichow, collected by Jul. Cavalerie, field no. 3072, in 1907.

This beautiful *begonia* is remarkable for the palmately and pinnately divided leaves, the large flowers, and the 3-winged as well as 2-celled ovary. Its nearest alliance may be *B. circumlobata* Hance, but the latter differs from the former in its orbicular leaves which are deeply divided into 7-9 lanceolate and not pinnately partite lobes.....Te-Tsun Yu, Yunnan Botanical Institute, Kunming.

Fig. 1. a flowering plant (natural size); 2. dorsal view of stamen (enlarged 20 times); 3. ventral view of stamen, (enlarged 20 times); 4. cross section of ovary (enlarged 4 times); 5. Style and stigma (enlarged 4 times).

圖版一百五十一

裂葉秋海棠

秋海棠科

多年生草本，高二十五至三十公分，具肥厚多節之根莖，附以纖維狀根。葉根出，二至五枚。葉片全形近卵圓，而為深掌狀分裂，裂片五至七枚復呈羽狀分裂或深缺刻，上下兩面具稀疏短刺毛，先端漸尖，基部心臟形，邊緣具粗細不等之鋸齒，全長十三至十五公分，全寬十六至十八公分；葉柄長十二至二十公分，被稀疏短毛；托葉膜質，卵圓形，先端鈍尖，長約十八公厘，寬約八公厘。花序繖房狀，着花五六朵；花軸長十八至二十公分，光滑無毛；花梗長一公分半至二公分半。小蕊花具花被四片，內外各二，外花被寬卵圓形，長十八至二十公厘，寬十二至十五公厘，先端平鈍，外面微具短毛；內花被長卵圓形，長十四至十六公厘，寬七至八公厘，先端平鈍，內外光滑；小蕊多數，離生，藥囊呈長橢圓形，先端微凹，長約一公厘，花絲長一公厘半至二公厘。大蕊花具花被五片，最外之二花被裂片為寬卵圓形，先端鈍圓，外面微具短毛或光滑，長十八至二十公厘，寬十至十二公厘，最內者呈長橢圓形，長約九至十公厘，寬五至六公厘；花柱二，柱頭肥厚多曲有毛，長三至四公厘；子房光滑具不等之三翅，最大之翅呈三角形，小翅狹長位於基部，二室，每室具有胎座二片。

本種產於峨眉山之報國寺，伏虎寺，清音閣及洪椿坪等處。

本種分布甚廣，川滇黔諸省南至越南邊境皆產之。

本種秋海棠具深掌狀裂葉，裂片復呈羽狀分裂，與大形花朵，大蕊花五瓣，子房二室，是其特點。其親緣較近者或為滇粵所產之掌葉秋海棠，而後者之葉具七至九披針形之裂片且不復分裂，易於識別。

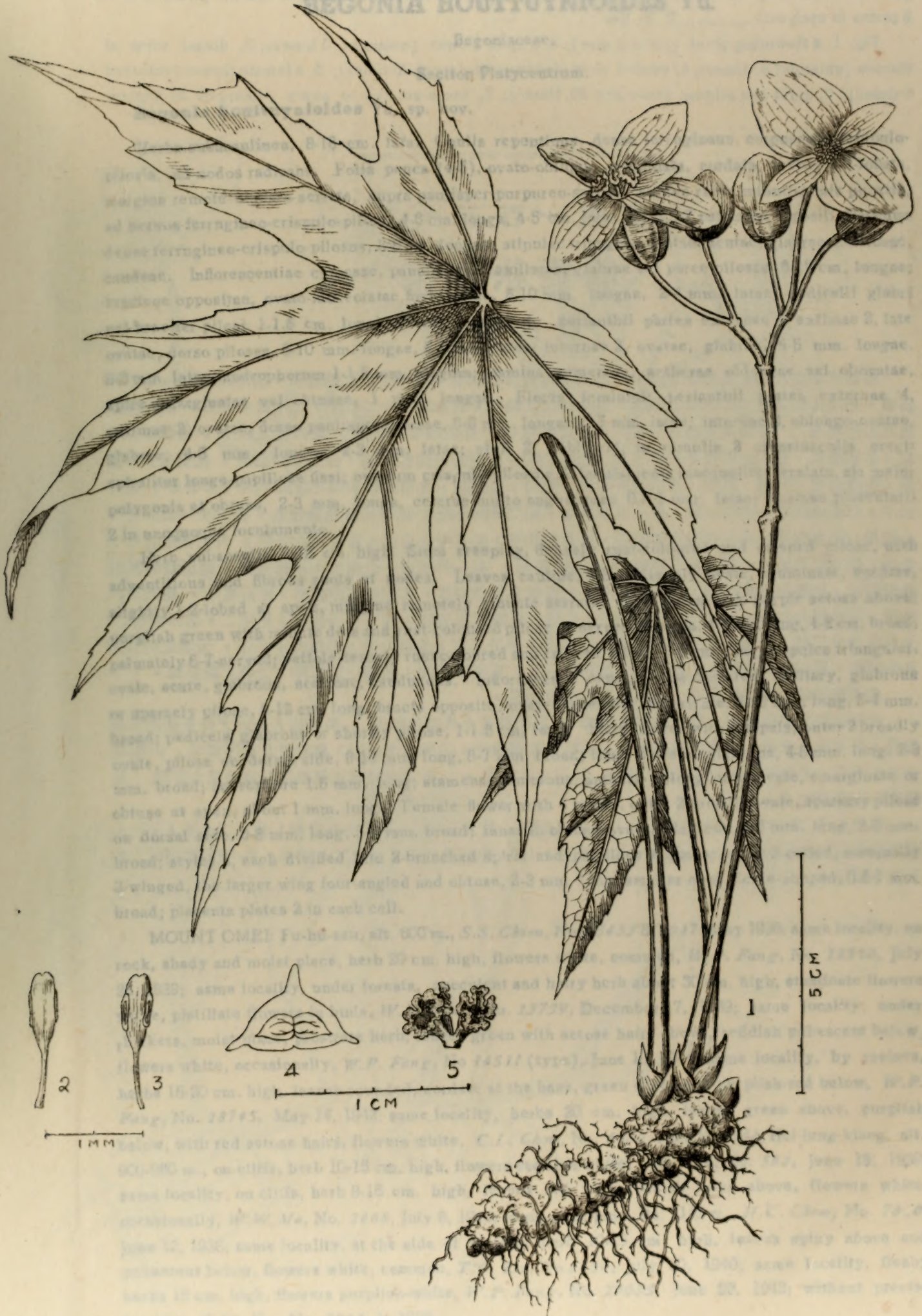
圖解： 1, 着花植物之全形（原大）； 2, 小蕊背面（放大二十倍）； 3, 小蕊腹面（放大二十倍）； 4, 子房橫剖面（放大四倍）； 5, 花柱與柱頭（放大四倍）。

May 16 1942; Chiang-ying-ko
 Saw. No. 278, June 18, 1938; Hung-chun-ping, alt. 1147 m., in woods, height 30-50 cm. high, leaves green above and light green below, flowers white, anthers yellow, rare. V. C. Lee, No. 3153, August 2, 1940;
 white, common. W. W. Ma, No. 2368, June 14, 1940.
 Distribution: Szechuan, Kweichow, Yunnan, south to Tonkin. Type comes from Mafo.
 Kweichow, collected by J. M. Cavalerie, field no. 3012, in 1907.
 This beautiful species is remarkable for the palmately and pinnately divided leaves, the large flowers, and the 3-winged as well as 2-celled ovary. Its nearest alliance may be *B. circumscissata* Hance, but the latter differs from the former in its orbicular leaves which are deeply divided into 7-9 lanceolate and not pinnately partite lobes.....T.-Tsun Yu, Yunnan Botanical Institute, Kunming.
 Fig. 1. A flowering plant (natural size); 2. dorsal view of stamen (enlarged 20 times); 3. ventral view of stamen (enlarged 20 times); 4. cross section of ovary (enlarged 4 times); 5. style and stigma (enlarged 4 times).

BEGONIA HOUTTUYNIOIDES Yd.

Begoniaceae.

Platycentrum.



151. Begonia pedatifida Leveille



Plate 162.

BEGONIA HOUTTUYNIOIDES Yu.

Begoniaceae.

Section *Platycentrum*.***Begonia houttuynioides* Yu, sp. nov.**

Herba subcaulinea, 8-18 cm. lata. Caulis repentinus, dense ferrugineus, corpusculis crispulopilosis, ad nodos radicans. Folia pauca (4-5), ovato-obliqua, acuminata, cordata, leviter 1-2-lobata, margine remote sinuato-serrata, supra paulisper purpureo-setosa, subtus rubra minutissimis punctis, ad nervos ferrugineo-crispulo-pilosa, 4-6 cm. longa, 4-5 cm. lata; nervi 5-7 palmatum dispositi. Petiolus dense ferrugineo-crispulo-pilosus, 3-8 cm. longus; stipulae triangulo-ovatae, acutae, glabrae, scariosae, caudae. Inflorescentiae cymosae, pauciflorae, axillares, glabrae vel parce pilosae, 6-12 cm. longae; bractae oppositae, ovato-lanceolatae, fimbriatae, 5-10 mm. longae, 2-4 mm. latae; pedicelli glabri vel breviter pilosi, 1-1.5 cm. longi. Flores masculini: perianthii partes externae 4, extimae 2, late ovatae, dorso pilosae, 8-10 mm. longae, 6-7 mm. latae; internae 2, ovatae, glabrae, 4-5 mm. longae, 2-3 mm. latae; androphorum 1-1.5 mm. longum; stamina numerosa, antherae oblongae vel obovatae, apice emarginatae vel obtusae, 1 mm. longae. Flores feminini: perianthii partes externae 4, extimae 2, ovatae, dorso paulisper pilosae, 6-8 mm. longae, 5-7 mm. latae; internae 2, oblongo-ovatae, glabrae, 4-5 mm. longae, 2-3 mm. latae; styli 2, subliberi, in ramulis 2 crassiusculis erecti spiraleriter longe-papillose fissi; ovarium crispulo-pilosum, 2-loculamentum inaequaliter teralata, ala maior polygonia et obtusa, 2-3 mm. longa, ceterae multo angustiores 0.5-1 mm. latae; laminae placentarii 2 in unoquoque loculamento.

Herb subcaulis, 8-15 cm. high. Stem creeping, densely rust-coloured and crisped pilose, with adventitious and fibrous roots at nodes. Leaves cauline, 4-5, obliquely ovate, acuminate, cordate, slightly 1-2-lobed at apex, margine remotely sinuate-serrate, dark green with purple setose above, purplish green with minute dots and rust-coloured pilose at nerves beneath, 4-6 cm. long, 4-5 cm. broad, palmately 5-7-nerved; petiole densely rust coloured and crisped pilose, 3-8 cm. long; stipules triangular, ovate, acute, glabrous, scariosae, caudicous. Inflorescence cymose, few-flowered, axillary, glabrous or sparsely pilose, 6-12 cm. long; bracts opposite, ovate-lanceolate, fimbriate, 5-10 mm. long, 2-4 mm. broad; pedicels glabrous or shortly pilose, 1-1.5 cm. long. Male flower with 4 tepals, outer 2 broadly ovate, pilose on dorsal side, 8-10 mm. long, 5-7 mm. broad; inner 2 ovate, glabrous, 4-5 mm. long, 2-3 mm. broad; androphore 1.5 mm. long; stamens numerous, anthers oblong or obovate, emarginate or obtuse at apex, about 1 mm. long. Female flower with 4 tepals, outer 2 broadly ovate, sparsely pilose on dorsal side, 6-8 mm. long, 5-7 mm. broad; inner 2, oblong-ovate, glabrous, 4-5 mm. long, 2-3 mm. broad; styles 2, each divided into 2-branched spiral and papillose stigmas; ovary 2-celled, unequally 3-winged, the larger wing four-angled and obtuse, 2-3 mm. long, smaller ones sickle-shaped, 0.5-1 mm. broad; placenta plates 2 in each cell.

MOUNT OMEI: Fu-hu-ssu, alt. 600 m., S.S. Chien, Nos. 5453 & 6017, May 1936: same locality, on rock, shady and moist place, herb 20 cm. high, flowers white, common, W.P. Fang, No. 12510, July 26, 1939; same locality, under forests, succulent and hairy herb about 30 cm. high, staminate flowers white, pistillate flowers in buds, W.P. Fang, No. 13739, December 17, 1939; same locality, under hickets, moist place, prostrate herb, leaves green with setose hairs above, reddish pubescent below, flowers white, occasionally, W.P. Fang, No. 14511 (type), June 10, 1940; same locality, by ravines, herbs 15-20 cm. high, leaves rounded, cordate at the base, green above and purplish-red below, W.P. Fang, No. 18745, May 14, 1942; same locality, herbs 20 cm. high, leaves green above, purplish below, with red setose hairs, flowers white, C.L. Chow, No. 6000, May 16, 1942; Hei-lung-kiang, alt. 900-980 m., on cliffs, herb 10-15 cm. high, flowers reddish-white, C.L. Sun, No. 562, June 19, 1939; same locality, on cliffs, herb 8-15 cm. high, leaves red with reddish hairs above, flowers white, occasionally, W.W. Ma, No. 2668, July 6, 1940; Hung-chun-ping, alt. 1147 m., H.C. Chow, No. 7610, June 12, 1938; same locality, at the side of forests, herb 10-15 cm. high, leaves spiny above and pubescent below, flowers white, common, T.C. Lee, No. 3054, July 30, 1940; same locality, fleshy herbs 15 cm. high, flowers purplish-white, W.P. Fang, No. 19035, June 28, 1942; without precise locality, C.W. Yao, No. 3921, in 1939.

This new species is closely related to *B. Limprichtii* Irmacher, but differs from that species in the glabrous inflorescence, the much small flowers, the female flowers with 4 tepals and the placenta with 2 plates in each cell. T. T. Yu.

Fig. 1, a flowering plant (natural size); 2, a male flower (enlarged 3 times); 3, dorsal view of stamen (enlarged 20 times); 4, ventral view of stamen (enlarged 20 times); 5, a female flower (enlarged 4 times); 6, style and stigma (enlarged 20 times); 7, cross-section of ovary (enlarged 20 times).

圖版一百五十二

峨眉秋海棠

新種

秋海棠科

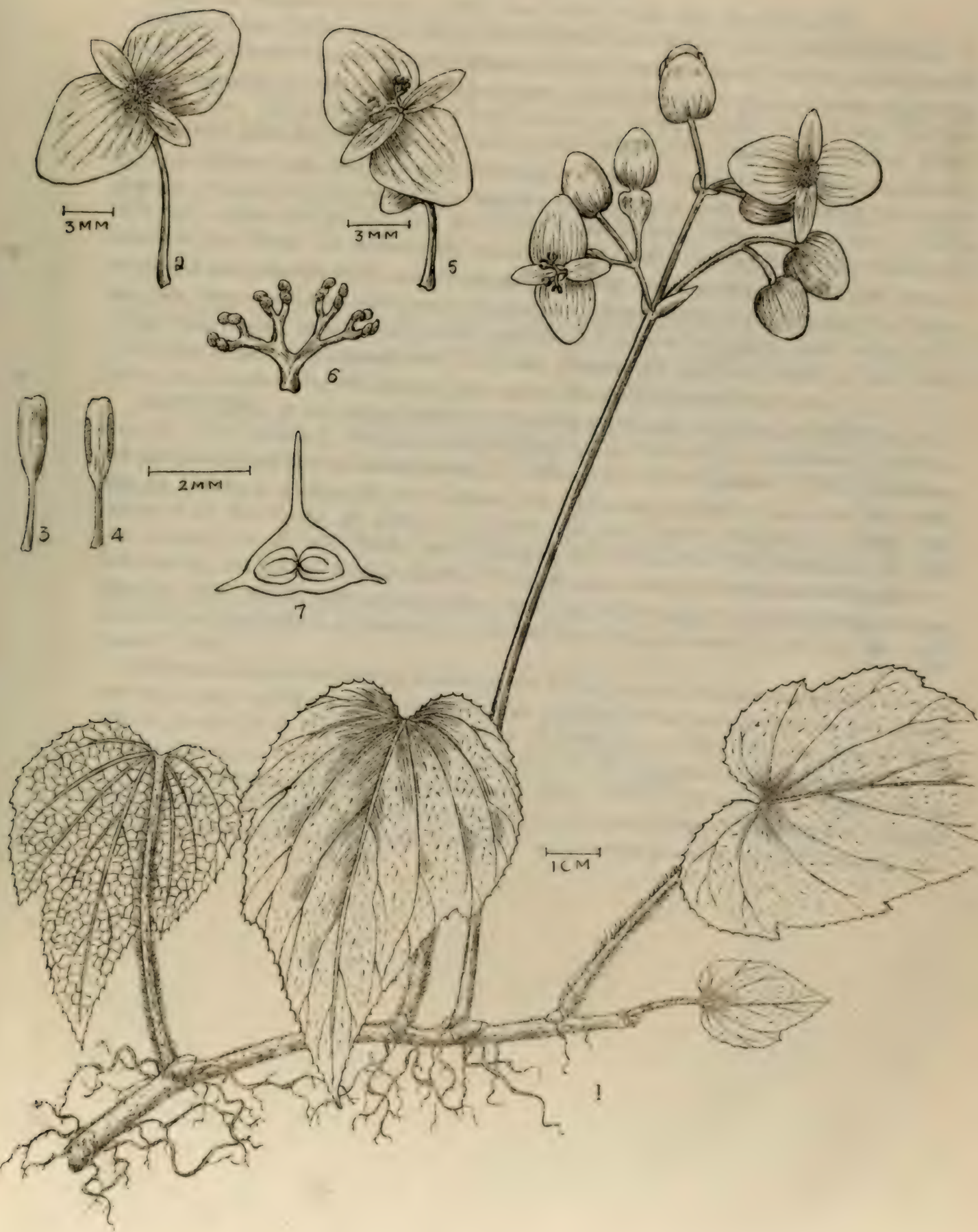
匍匐草本高八至十五公分。莖平臥地上，外被銹色軟毛，節間生多數纖維根。葉片四五枚，偏斜卵圓形，先端具漸尖頭，基部呈心臟形，邊緣具起伏鋸齒，或分裂出一二裂片，裂片為三角形，表面深綠色具紫色刺毛，背面帶紫色在主脈上密被銹色短毛，全長四至六公分，寬四至五公分；葉脈五至七條，掌狀排列，最大之脈復分三至五枝，細脈網狀；葉脈密被銹色軟毛，長三至八公分；托葉三角卵圓形，先端鈍尖，光滑，膜質，易於脫落。花序側出，聚繖狀，光滑或微被短毛，長六至十二公分；苞片對生，卵圓披針形，邊緣細裂，長五至十公厘，寬二至四公厘；花梗光滑或被短毛，長一至一公厘半。小蕊花具花被四片，外花被呈寬卵圓形，背面被軟毛，長八至十公分，寬五至七公分；內花被卵圓形，光滑，長四至五公厘，寬二至三公厘。小蕊柄甚短，長一公厘至一公厘半；小蕊多數，藥囊長橢圓形或倒卵形，先端微凹或平鈍，長約一公厘。大蕊花具花被四片，外花被寬卵圓形，背面有毛，長六至八公厘，寬五至七公厘，內花被長橢圓形，光滑，長四至五公厘，寬二至三公厘；花柱二，基部微聯，上半復各分二枝，先端具直立螺旋狀多毛之柱頭；子房二室，外被軟毛，三翅大小不等，大者近於方形具平鈍頭，寬二至三公厘，其餘二翅窄細如鐮刀狀，寬僅半公厘；胎座一室二片，上着多數胚珠。

此種產於峨眉山之伏虎寺，黑龍江及洪椿坪等處。

此種秋海棠生態匍匐，葉上具紫色刺毛，葉柄及莖上具銹色軟毛，俱與德人所記之林氏秋海棠相近似，而其花序光滑，花朵遙為細小，大蕊花具花被四片，子房胎座兩裂，與前者之花序多毛，大蕊花具花被五片，子房胎座多裂者易於分辨，故別立為一種。其葉之形狀與色澤俱似田邊習見之蕺菜（魚腥菜），因以得名。

圖解：1. 着花植物之全形（原大）；2. 小蕊花（放大三倍）；3. 小蕊背面（放大二十倍）；4. 小蕊腹面（放大二十倍）；5. 大蕊花（放大四倍）；6. 花柱與柱頭（放大二十倍）；7. 子房橫剖面（放大二十倍）。

MOUNT OMEI Fu-hu-san, alt. 600 m., S. S. China, Nos. 5453 & 5457, May 1938; same locality, on rock, shady and moist place, herb 30 cm. high, flowers white, common, W. P. Kang, No. 12510, July 28, 1939; same locality, under forests, succulent and hairy herb about 30 cm. high, staminate flowers white, pistillate flowers in buds, W. P. Kang, No. 12739, December 17, 1939; same locality, under thickets, moist place, prostrate herb, leaves green with setose hairs above, reddish pubescent below, flowers white, occasionally, W. P. Kang, No. 14311 (type), June 10, 1940; same locality, by ravines, herbs 18-30 cm. high, leaves rounded, cordate at the base, green above and purplish-red below, W. P. Kang, No. 14745, May 14, 1942 same locality, herbs 20 cm. high, leaves green above, purplish below, with red setose hairs, flowers white, C. A. Claw, No. 6020, May 10, 1942; Hsi-jung-king, alt. 800-900 m., on cliffs, herb 10-18 cm. high, flowers reddish-white, C. A. Claw, No. 582, June 18, 1939; same locality, on cliffs, herb 8-16 cm. high, leaves red with reddish hairs above, flowers white, occasionally, W. W. Wu, No. 2468, July 6, 1940; Hong-chun-ping, alt. 1147 m., W. C. Claw, No. 7610, June 12, 1938; same locality, at the side of forests, herb 10-18 cm. high, leaves spiny above and pubescent below, flowers white, common, T. C. Lee, No. 3254, July 30, 1940; same locality, fleshy herbs 18 cm. high, flowers purplish-white, W. P. Kang, No. 12035, June 28, 1942; without precise locality, C. W. Lee, No. 3921, in 1939.



152. *Begonia houttuynioides* Yü



Plate 153.

BEGONIA WILSONII Gagnepain.

Begoniaceae.

Section *negoniastrum*.**Begonia Wilsonii** Gagnepain in Bull. Mus. d'Hist. Natur. Nat. xxv (1919), 281.

Perennial herb, 20-30 cm high. Tubers thick, globose, with fibrous roots. Leaves all radical, 1-2, rhomboid, 3-5- rarely 7-9-lobed at apex, lobes triangular in shape, obliquely cordate at base, margin serrate, palmately 3-7-nerved, lateral veins pinnate, veinlets inconspicuous, dark green and sparsely setulose above, light purplish green and sparsely setose on nerves beneath, 10-15 cm long, 10-12 cm. broad; petiole glabrous, fleshy at base, 10-20. cm. long; stipules ovate-lanceolate, scarious, brown, glabrous, 5-6 mm. long, 3-4 mm. broad. Inflorescence radical, corymbose, 6-7-flowered; peduncle glabrous, 15-20 cm. long; bracts opposite, ovate-lanceolate, 5-8 mm. long, 3-4 mm. broad. Male flower pedicellate, pedicel glabrous, 8-10 mm. long; tepals 4, outer 2 larger, ovate, obtuse at apex, slightly cordate at base, 10 mm. in diameter; inner 2 narrower, oblong-obovate, 7-8 mm. long and 3-4 mm. broad; androphore none; stamens 10-15, free at base, anther obovate, connective emarginate at apex, about 1 mm. long, filament slender, slightly longer than the anther. Female flower pedicellate, pedicel glabrous, 8-9 mm. long; tepals 3, outer 2 larger, broadly ovate, rounded, 8-9 mm. in diameter, inner 1 oblong-ovate, 5 mm. long, 2 mm. broad; styles 3, free, each with 2 lunate and papillose stigma at apex; ovary fusiformed, 3-angled, wingless, 3-celled, with a single lamellate placenta in each cell.

MOUNT OMEI: at roadside en route from Pao-ning-ssu to Lung-meng-tung, alt. 480-540 m., *C. L. Chow*, No. 6941, October 2, 1942; Lung-meng-tung, alt. 548 m., herbs 50 cm. high, leaves green above and pale green below, flowers pinkish-white, *C. L. Chow*, No. 4736, October 4, 1941; Hung-chun-ping, alt. 1147 m., *H. C. Chow*, No. 8154, August 16, 1938; same locality, *C. L. Chow*, No. 6687, September 14, 1942; Taping, alt. 1400 m., *C. L. Chow*, Nos. 6622 & 6632, September 5, 1942; Chiu-shih-chiu-tau-kuai, alt. 1400-1600 m., herb 70 cm. high, *W. P. Fang*, No. 17322, September 29, 1941; Chiu-lau-tung, alt. 1800 m., *W. P. Fang*, No. 17486, August 9, 1941; Pei-yun-ssu, alt. 2556 m., *H. C. Chow*, No. 7866, July 20, 1938; without precise locality, *C. W. Yao*, No. 4964, in 1939; Hung-ya-hsien, en route from Ping-ling-tzu to Shaw-shan, at roadside, herb with red flowers, *C. W. Yao*, No. 2677, August 9, 1938.

This remarkably distinct species is characterized by the rhomboid leaves with triangular lobes at apex and by the 3-angled ovary with single lamellate placenta. It was named after the well known collector, the late Dr. E. H. Wilson. Type specimen (E. H. Wilson no. 1904) was collected in 1904 from the same region..... Te-tsun Yu, Yunnan Botanical Institute, Kunming.

Fig.: 1, a flowering plant (natural size); 2, male flower (enlarged 6 times); 3, dorsal view of stamen (enlarged 20 times); 4, ventral view of stamen (enlarged 20 times); 5, female flower (enlarged 6 times); 6, style and stigma (enlarged 15 times); 7, cross-section of ovary (enlarged 15 times).

圖版一百五十三

威氏秋海棠

秋海棠科

多年生草本，高二十至三十公分。根莖球形，肥厚，具纖維根。葉自根出，一至二片，外貌近菱形，先端三至五裂，偶有七至九裂者，裂片均呈三角形，基部呈偏心臟形，邊緣有細銳突尖之鋸齒，主脈三至七條，掌狀射出，側脈數目多少不一，呈羽狀排列，細脈網狀不甚明顯，上面深綠色具極稀疏之短刺毛，下面略帶紫色，光滑或在主脈上具少數細毛，全長十至十五公分，全寬十至十二公分；葉柄光滑，基部肥厚，長十至二十公分；托葉膜質，光滑，褐色，卵圓披針形，長五六公厘。花序根出，長達十五至二十公分；花軸光滑，先端着花六七朵為繖房狀排列，下面具卵圓披針形之小苞片；花梗長約八至十公厘。小蕊花具花被四片，內外各二：外花被卵圓形，先端鈍圓形，基部略呈心臟形，直徑約一公分，內花被長橢倒卵圓形，長七八公厘，寬三四公厘；小蕊總柄缺如；小蕊十至十五枚，離生，藥囊倒卵形，先端微凹，長約一公厘，花絲纖細略較藥囊為長。大蕊花具花被三片，內一外二：外花被寬卵圓形，直徑八至九公厘，內花被長橢卵圓形，長五公厘，寬二公厘；花柱三條，離生，先端具半月形之柱頭；子房呈紡錘形，三稜，無翅，三室，各具單片胎座，上生多數胚珠。

本種產於峨眉山之保寧寺，龍門洞，洪椿坪，大坪，九十九倒拐，九老洞及白雲寺等處。

本種秋海棠之葉片呈方菱形，先端具三角形裂片，子房三稜不具翅，二室具單片胎座，為其特異之點。係由採集中國植物聞名歐美之植物學者威爾遜氏於前光緒三十年採自峨眉山，野外採集記錄號數四九一三號，經法國植物學家甘紐本氏鑑定為新種，因以威氏之名名之，以資紀念。

圖解：1. 着花植物之全形（原大）；2. 小蕊花（放大六倍）；3. 小蕊背面（放大二十倍）；4. 小蕊腹面（放大二十倍）；5. 大蕊花（放大六倍）；6. 花柱與柱頭（放大十五倍）；7. 子房橫剖面（放大十五倍）。



153. *Begonia Wilsonii* Gagnepain

식물학 실험

1. 식물의 생장
2. 식물의 생리



Figure 1. Plant growth and physiology.

Plate 154.

ILEX OMEIENSIS Hu Shiu-ying.

Aquifoliaceae.

Ilex omeiensis Hu Shiu-ying, sp. nov.

Arbor parva, 5 m. alta. Ramuli erecti, biennes 4-5 mm. crassi, hornotini 3-4 mm. crassi. Folia bisque alternum in anum in ramulis remanentia, intersitiis 20-50 mm. longis dissita, stipulis deltoideis acutis, 0.75 mm. longis, persistentibus; petiolus 2-3 mm. crassus, glabrus, supra medium longitudinaliter sulcatus, subtus rugosus; lamina ovalis vel oblongo-elliptica, 11-15 cm. longa, 4.6-7 cm. lata, supra coriacea, glaberrima, nitida vel nitidula, olivacea vel brunnescentia, subtus pallidior, opaca; basi obtusa vel rotundata; apice abrupto-acuminata; margine anguste recurvata, integerrima, costa media supra impressa, subtus elevata, nervis lateralibus utrinque 8-10 supra obsolete vel promiulis, subtus prominentibus, iuxta marginem cum nervis minoribus et minimis intermixtis reticulo densissimo conjunctis. Inflorescentiae in foliorum axillis et in basi ramorum crescentium fasciculatae, masculae dichotomae et etiam trichotomae, femineae subumbelliformes; bractae deltoideae, acutae, 2 mm. longae, 1.75 mm. latae, nigrescentes; prophyllis in pediculorum basi inserta, deltoidea, 0.5 mm. longa; pediculus 2-3 cm. longus, in masculis, 15-17 mm. in femineis, pubescens; Pedicellis 6-8 mm. longus, hirtosus. Flores masculi 5-meri, feminei 6-7-meri; calyx patelliformis, 3-4 mm. diam. hirtosus, ciliatus, lobulus deltoideus vel ovatus, obtusus, 1.5 mm. longus, 1.25 mm. latus; corolla rotata, petalis ellipticis, 2.5-2.75 mm. longis, 1.75 mm. latis; stamina fl. masculi breviora quam petala, antheris ellipsoidea; pistillum fl. masculi subgloboso-conicum, 1 mm. diam. i. s.: 8-10 sulcatum. Drupa globosa, parva; stigma discoideum, obsoletum lobulis coronatum, 4-5 mm. in diam.; pedicellis 8-10 mm. longus, hirtosus, calyx planus, 6-7-lobulis deltoideis, acutis, ciliatis, membranaceis; 6-pyrenes; pyrenis trigonus 3 mm. longus, 1 mm. latus, dorso et medio-striatus, coriaceus.

Shrub or small tree, 3 metres high; branches erect, two years' growth 4-5 mm. thick, this year's growth 3-4 mm. thick, in specimen; nearly black. Leaves 20-50 mm. apart; stipules deltoid, acute, 0.75 mm. long; petioles 17-20 mm. long, 2-3 mm. thick, slightly grooved above, rugose below; lamina oval or oblong-elliptic, 11-15 mm. long, 4.6-7 cm. broad, coriaceous, glabrous, upper surface, in specimen, shiny, olive-green or brown, lower surface opaque; base obtuse or rounded; apex abruptly, acuminate; margin, in specimen, narrowly recurvate, entire, midrib impressed above, elevated below, lateral nerves 8-10 on each side, obsolete or visible above, prominent below, reticulate near the margin. Inflorescences fasciculate in the axils of leaves or at the base of newly growing branches, male dichotomously or trichotomously branched umbel, female subumbel; bractlets deltoid, acute, 2 mm. long, 1.75 mm. wide, blackish, prophylla inserted at the base of the pedicel, deltoid, 0.5 mm. long; peduncle 20-30 mm. long in male, 15-17 mm. long in female, pubescent, pedicel 6-8 mm. long, hirtose; flowers 5-merous in male, 6-7 merous in female; calyx patelliform, 3-4 mm. in diameter, hirtose, ciliate, lobes deltoid or oval, obtuse, 1.5 mm. long, 1.25 mm. broad; corolla rotate, petals elliptic, 2.5-2.75 mm. long, 1.75 mm. wide; stamens of male flower shorter than petals, anthers ellipsoid; pistil of male flower subglobose, 1 mm. in diameter, in specimen, 8-10 sulcate. Drupe globose, stigma discoid, obsolete, lobes coronate, 4-5 mm. in diameter, pedicel of fruit 8-10 mm. long, hirtose, calyx plane, 6-7-lobed, lobes deltoid, acute, ciliate, 6-pyrened; pyrenes trigonous, 3 mm. long, 1 mm. wide dorsally, with 1 medium longitudinal dorsal striate, coriaceous.

MOUNT OMEI: Chiu-lao-tung, alt. 1800 m., T. H. Tu, No. 381 (type of male flower), spring of 1935; same locality, shrub 3 metres high, fruits red, C. W. Yao, No. 4912 (type of fruit), August 30, 1939.

This new species is closely related to *Ilex venulosa* Hooker f., but the latter species is easily distinguished in having glabrous peduncle and pedicel as well as the longer petioles and pedicels.

Hu Shiu-ying

Fig. 1, a fruiting branch (natural size); 2, a male flowering branch (natural size); 3, a dissection of male flower (enlarged 10 times).

圖版一百五十四

峨眉冬青

新種

冬青科

常綠灌木或小喬木，高達三公尺；枝直立，二年之枝直徑四至五公厘，本年之枝直徑三至四公厘，標本之枝近黑色。葉互生，相距廿至五十公厘；托葉三角形，銳尖，長四分之三公厘；葉柄長十七至廿公厘，直徑二至三公厘，光滑無毛，上面有淺溝，下面粗糙；葉片卵狀長橢圓或橢圓形，長十一至十五公分，寬四至六公厘至七公分，革質，光滑無毛，標本之葉表面有光澤，褐綠色，背面暗淡，基部鈍尖或圓形，先端突尖，邊緣微向背面反褶，全緣，中肋在表面凹入，背面顯著，側脈每邊八至十條，在表面不顯或略可見，背面顯著，近邊緣處則呈網狀。聚繖花序，密集葉脈或叢生於新枝基部，小蕊花花序一再分枝，呈繖形花序，大蕊花近似繖形花序，花序基部之苞片三角形，先端銳尖，長二公厘，寬一又四分之三公厘，黑褐色，厚革質，柄上苞着生於花梗基部，三角形，長半公厘，小蕊花花序之梗長廿至卅公厘，大蕊花花序之梗長十五至十七公厘，被絨毛，花梗長六至八公厘，被長絨毛；小蕊花五數，大蕊花六或七數；花萼盤形，直徑三至四公厘，被長絨毛，邊緣具睫毛，萼片三角形或卵狀，長一公厘半，寬一又四分之一公厘，先端銳尖；花冠幅輪狀，花瓣橢圓形，長二又二分之一至二又四分之三公厘，寬一又四分之三公厘；小蕊花之小蕊較花瓣略短，花藥橢圓形，小蕊花之不孕大蕊呈亞圓球形，直徑一公厘，具六至十溝楞。核果球形，柱頭盤狀具不顯然之缺口，直徑四至五公厘，果梗長八至十公厘，被長直毛，宿存之萼片扁平，具六至七個三角形之萼片，先端銳尖，邊緣具睫毛，含核六粒；核三角形，長三公厘，背寬一公厘，背部正中具一縱脊，革質。

此新種產峨眉山之九老洞。四月開花，八月果可成熟。

本種與印度之 *Ilex Venulosa* Hook f. 親緣最近，二者之區別為前者之果梗具長毛，而後者之果梗係光滑者。

圖解： 1, 果枝 (原大)； 2, 小蕊花之枝 (原大)； 3, 小蕊花之解剖 (放大十倍)。



154. *Ilex omeiensis* S. Y. Hu

真 蘇 叶 的 志



Plate 158.

ILEX MICROCOCCA Maximowicz.

Aquifoliaceae.

Ilex micrococca Maximowicz in Bull. Acad. Sci. St. Petersb. ser. 7, XXIX (3), (1881), 29, t. 1, fig. 6.- Loesener in Nov. Act. Acad. Caes. Leop.- Carol. LXXVIII (1901), 91-92.- Notes Roy. Bot. Gard. Edinb., XVII (1926), 115, (1930), 156, 268, 302, 337, 403.- Merrill & Chun in Sunyatsenia, I (1) (1930), 68.

Ilex pseudo-Godajam Franchet in Journ. de Bot. XII (1898), 286.

Evergreen shrub or small tree up to 6-8 metres high, bark grey, smooth; branchlets glabrous, with longitudinal striation, brown to purplish-brown, with few large oblong, white lenticels; this year's growth 2.5-4 mm. thick, slightly angular. Leaves on elongated branchlets 1-2 cm. apart, exstipulate; petiole terete, longitudinally striate, 15-20 mm. long; lamina papery or submembranous, glabrous, oval, oval-elliptic or oval-oblong, 5-12 cm. long, 2-6 cm. wide; base round, broad-cuneate or obtuse; apex acuminate and acute; margin entire; midrib grooved in, thus invisible above, very prominent below; principal lateral nerves 4-6 on each side, angle 50°-70°, near margin curved toward apex, reticulation of veinlets prominent on both surfaces. Inflorescence axillary on this year's growth, in twigs, thrice or often irregularly trichichotomous umbels, umbels 4-10 flowered; peduncle shorter than petiole, 10 mm. long, secondary branchlets 2-7 mm. long, pedicels 1-3 mm. long, pubescent; male flowers 5-6-merous, female flowers with 5-7 merous calyx, 8-9 merous corolla and stamens; calyx disk-like, pubescent, irregularly serrate; corolla rotate; stamens of male flower as long as petals, anthers ellipsoid; staminode of female flower shorter than petals, sterile anthers cordiform-sub-sagittate; ovary of female flower obtuse-conical, stigma sessile, slightly 6-8 lobed, capitate, ovary 6-8 locules; sterile pistil of male flower conical. Drupe small, globose, 3 mm. in diameter, red at maturity, i. e. reddish-brown, calyx persistent, stigma discoid; 8 pyrenes; pyrene minute, non-striate, each with a longitudinal furrow along the middle.

MOUNT OMEI: Lung-men-tung, alt. 546 m., shrub 3 metres high, fruits red, globose, T. C. Lee, No. 4605, October 28, 1940; same locality, small tree 5 metres high, W. P. Fang, No. 15144, November 5, 1940; Kwang-fu-ssu, alt. 1000 m., tree 8 metres high, fruits red, W. P. Fang, No. 15548, November 25, 1940; Ching-yin-ko, alt. 950 m., small tree 3 metres high, fruits red, globose, W. P. Fang, No. 15734, December 20, 1940; Niu-hsin-ssu, alt. 960 m., tree 6 metres high, fruits red, W. P. Fang, No. 15570, November 30, 1940; Hui-fu-ssu, alt. 1300 m., W. P. Fang, Nos. 19116 & 19104, December 1941; without precise locality, S. N. Hsu, No. 091, without date.

CHEKIANG: Hsien-chu, in woods or in woods partly shaded, alt. 700 m., R. O. Ching, No. 1691, May 30, 1924.

SEECHUAN: Nanchuan-hsien, tree 8 metres high, in thickets, W. P. Fang, No. 6050, October 28, 1928; same locality, in flower-buds, K. L. Chu, No. 1085, without date.

KWANGSI: without precise locality, O. Wang, Nos. 39316, 39923, & 40053.

Distribution: Chekiang, Szechuan, Kwangtung, Kwangsi, Yunnan; Japan.

This species may easily be distinguished by its small fruits and its twice or thrice trichichotomous inflorescence or fruit-branches and its membranous leaves.....Hu Shiu-ying.

Fig. 1, a fruiting branch (natural size); 2, a cluster of fruits (enlarged 5 times); 3, a dorsal view of pyrene (enlarged 10 times).

圖版一百五十五

球果冬青

冬青科

常綠灌木或小喬木，高六至八公尺，樹皮灰色，平滑；小枝光滑，無毛，現縱溝，褐色或紫褐色，皮孔稀疏，長圓形，白色；當年之枝直徑二公厘半至四公厘，有微楞。葉互生，相距一至二公分，托葉缺如；葉柄圓柱形，有縱溝，長十五至二十公厘；葉片紙質或亞膜質，光滑，卵狀橢圓形或卵狀長圓形，長五至十二公分，寬二至六公分；基部圓形，或寬楔形以至銳尖；先端漸尖或銳尖；全緣；中肋凹入在葉表面不可見，在背面則凸起；側脈每邊四至六條，與中肋相交成五十至七十度之角，近邊緣處向先端彎曲，小脈網狀在葉兩面皆顯著。複繖形花序，腋生，小繖形花序具四至十花；總花梗較葉柄略短，長十公厘，支梗長二至七公厘，小花梗長一至三公厘，被絨毛，小蕊花每環五至六出，大蕊花具萼片五至七枚，花瓣與小蕊各八至九枚；花萼盤狀，被毛，邊緣具不規則之鋸齒；花冠幅輪狀；小蕊花之小蕊與花瓣等長，花藥橢圓形，大蕊花之不孕小蕊較短於花冠，花藥心臟形，基部箭形；大蕊花之大蕊鈍圓錐形，無花柱，柱頭頭狀，六至八裂，子房六至八室；小蕊花之不孕大蕊圓錐形。核果甚小，球形，直徑三公厘，成熟時紅色，蠟葉標本之果呈紅褐色，花萼宿存，柱頭盤狀；核八粒，甚小，平滑，背面中間具一縱溝。

此種產於峨眉山之龍門洞，廣福寺，清音閣，牛心寺及會佛寺等處，海拔五百餘公尺至一千三百三公尺之叢林中，四月開花，十月果可成熟。

此種分佈於浙江，四川，雲南，廣東，廣西及日本。

本種之特點為其球形小核果，數次分枝之花序或果序與其膜質之葉。

圖解： 1. 果枝（原大）； 2. 果暨其柱頭與宿萼（放大五倍）； 3. 核之背面（放大十倍）。



155. *Ilex micrococca* Maximowicz



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Handwritten notes or labels, possibly including a name or number.

Plate 186.

ILEX PURPUREA Hasskarl.

Aquifoliaceae.

Ilex purpurea Hasskarl in Cat. Pl. Hort. Bogor. Cult. Alt. (1844), 230.- Loesener in Nov. Act. Acad. Caes. Leop.-Carol. LXXVIII (1901), 111; in Sargent, Pl. Wilson. I (1913), 76.- Rehder et Wilson in Journ. Arn. Arb. VIII (1927), 186.- Rehder in Journ. Arn. Arb. XIV (1933), 293.

Ilex Oldhami Miquel in Ann. Mus. Bot. Lugd. Bot. III (1867), 106.- Hemsley in Journ. Linn. Soc. Bot. XXIII (1886), 117.

Ilex purpurea Hasskarl var. *Oldhamii* (Miquel) Loesener in Nov. Act. Acad. Caes. Leop.-Carol. LXXVIII (1901), 112, t. 3, fig. 2; in Sargent Pl. Wilson. I (1913), 76.

Callicarpa Cavalerii Leveille in Fedde Rep. Spec. Nov. IX (1911), 455; Fl. Kouy-Tcheou. (1914), 439.

Embelia rubra-violacea Leveille in Fedde Rep. Spec. Nov. X (1912), 375; Fl. Kouy-Tcheou. (1914), 285.

Gelastrus Bodinieri Leveille Fedde Rep. Spec. Nov. XIII (1914), 263.

Tree, up to 13 m. high, trunk up to 30 cm. thick, branches spreading or erect, old branchlets terete, bark grey, longitudinally plicate striolate, third year's growth 4.5-6 mm. thick, this year's growth very glabrous, 2 mm. thick, shiny brown in specimen, with conspicuous pinhead-like white lenticels. Leaves on last year's and this year's growth, alternate, 5-18 sometimes up to 20 mm. apart; stipules minute, subulate-deltoid, 8 mm. long; petiole 8-13 mm. long, flat above, striate and terete below; lamina tender coriaceous, glabrous, i.s. shiny deep brown above lighter below, oblong lanceolate, rarely subelliptic, ovate-oblong, 5-10 cm. long, 2-4 cm. wide; base cuneate, obtuse, rarely rounded; apex obtuse up to 2 cm. long, acuminate; margin crenate or crenulate-serrulate; midrib plane above, elevate underneath, lateral nerves 6-9 on each side, prominent on both surface. Inflorescences in solitary umbel-like clusters in the axils of leaves, glabrous or with few minute pulverulent pillose; male 3, 4, 5 or sometimes irregularly dichotomous, 15-31-flowered, female dichotomous, 3-7 flowered; peduncle 4-14 mm. long in male, and 2-6, rarely up to 8 mm. long in female, pedicel 2-4 mm. long in male, 9 mm. long in female, prophylls minute, inserted at the base of pedicel, flowers 4-merous; calyx obconical-subcampanulate or patelliform, 1.75-2.75 mm. in diameter, glabrous, lobes round in male and broadly triangular in female, ciliate; Corolla rotate, in vivo, light violet, petal 2-3 mm. long, 1.7-2 mm. wide; Stamens slightly shorter than petal, i.v., anther purple, ellipsoid, staminode of female flower shorter than petal, sterile anther cordiform. Ovary of female flower ovoid up to 1.8 mm. long, 1.25 mm. thick, 4-loculed, stigma thick, 4-lobed, coronate; sterile pistil of male flower conical, apex obsolete sulcate. Drupe ellipsoid, 6-12 mm. long, 4.5-8 mm. thick, stigma prominent; i.v., red, i.s. smooth, shiny, 4-pyrened; pyrene narrow lanceolate, 6.5-9.5 mm. long, 2.5-3.5 mm. wide dorsally, smooth, with one deep longitudinal dorsal canal.

MOUNT OMEI: Near Wan-hsiang-chuang, alt. 470 m., small tree 4 metres high, young fruits green, T. C. Lee, No. 4782, September 2, 1940; same locality, shrub 2 metres high, fruits red, T. C. Lee, No. 4536, October 1940; near Pao-kuo-ssu, alt. 480 m., small tree 12 metres high, flowers purple, C. L. Chow, No. 6101, May 12, 1942; Erh-ping, alt. 500 m., small tree, 4 metres high, flowers small, purple, C. L. Chow, No. 6084, May 22, 1942; Lung-men-tung, alt. 546 m., small tree 5 metres high, fruits red. T. C. Lee, No. 4618, October 1940; same locality, small tree 5 metres high, fruits scarlet-red, oblong-ovoid, W. P. Fang, No. 15619, December 2, 1940; Kwang-fu-ssu, alt. 1000 m., small tree 6 metres high, fruits coral-red, globose, W. P. Fang, No. 15653, November 28, 1940; same locality. W. P. Fang, No. 19149, December 3, 1943; Niu-hsin-ssu, small tree 5 metres high, W. P. Fang, No. 15733, December 20, 1940; same locality, small tree 8 metres high, fruits red, elliptic-ovoid, W. P. Fang, No. 15671, November 30, 1940; Hung-chun-ping, alt. 1200 m., small tree 4 metres high, fruits red, subglobose, W. P. Fang, No. 15412, November 18, 1940; Hui-fu-ssu, alt. 1300 m. W. P. Fang, No. 19115, November 23, 1943; Kuan-hsin-po, alt. 1300 m., small tree 4 metres high, young fruits green, T. C. Lee, No. 3452, September 7, 1940; Shih-men-kan, tree 8 metres high, fruits red, elliptic-oblong, W. P. Fang, No. 15680, December 4, 1940; Hsin-kai-ssu, alt. 1600 m., small tree 8 metres high, fruits scarlet-red, ovoid, W. P. Fang, No. 15700, December 5, 1940; same locality, at the side of forests,

C. L. Chow, No. 7172, October 16, 1942; Chang-lao-ping, alt. 1600 m., small tree 5 metres high, flowers reddish-purple, W. P. Fang, No. 18942, June 6, 1942; Yu-hsien-ssu, alt. 1771 m., small tree 5 metres high, fruits red, W. P. Fang, No. 15527, December 25, 1940; northwest of Mount Omei, Yun-king-hsien, Wa-wu-shan, in forests, small tree 6 metres high, flowers yellowish-green, C. L. Sun, No. 1224, September 5, 1939; without precise locality, C. W. Yao, No. 5058, in 1939.

SZECHUAN: Kuan-hsien, in forests, small tree 5 metres high, W. P. Fang, No. 12916, September 20, 1938.

DISTRIBUTION: Chekiang, Anhwei, Kiangsi, Hupeh, Szechuan, Kweichow, Kwangsi, Fukien; Japan.

This is one of the most popular ornamental plant among West China florists. Every year, large bundles of the fruiting branches of the plant are brought to the market from Christmas season to late spring. The red fruits and the shining deep green leaves make it a beautiful ornamental for household decorations. This plant is closely related to *Ilex shweliensis* Camber from which it differs by being glabrous while the later is pubescent.....Hu Shin-ying.

Fig. 1, a fruiting branch (nature size); 2, a branch with male flower (nature size); 3, a male flower (enlarged 3 times); 4, a single fruit (enlarged 3 times); 5, cross section of pyrene (enlarged 5 times).

圖版一百五十六

紫花冬青

別名：冬青，紅冬青，油葉樹，棟青，凍青，棟青樹，萬年樹，萬壽紅。

冬青科

常綠喬木，高達十三公尺，胸高直徑三十公分，大枝平斜向或直立，小枝圓柱形，樹皮灰色，具縱紋，三年生之枝直徑四公厘半至六公厘，本年之枝光滑無毛，直徑二公厘，蠟葉標本之枝褐色有光澤，皮孔顯著，小如針尖，葉互生於兩年或一年生之枝上，相距五至十五公厘；鮮達二十公厘，托葉甚小，尖三角形，長五公厘；葉柄長八至十三公厘，腹面扁平，背面圓形且具縱溝；葉片薄革質，光滑無毛，蠟葉標本之葉表面深褐色有光澤，背面淺褐色，長橢圓披針形，稀成卵狀長橢圓形，長五至十公分，寬二至四公分；基部楔形，鈍尖，稀呈圓形；先端鈍尖至漸尖；邊緣具圓形鋸齒或圓形小鋸齒；中肋在葉表面扁平，在背面凸起，側脈每邊六至九條，在葉兩面均顯著，繖狀聚繖花序單生於葉腋間，光滑無毛或具淺毛，小蕊花序分枝數次，具十五至三十一花，大蕊花序具三至七花；小蕊花之總花梗長四至十四公厘，大蕊花之總花梗長二至六公厘，稀達八公厘，小蕊花之小花梗長二至四公厘，大蕊花之小花梗長九公厘，花梗上苞甚小，生於花梗之基部，花四出；萼倒圓錐形，鐘形或盤形，直徑一又百分之七十五至二又百分之七十五公厘，光滑，邊緣有睫毛；花冠輻輪狀，開花時淡紫色，花瓣長二至三公厘，寬一又十分之七至二公厘；小蕊較花冠略短，花藥紫色，橢圓形，大蕊花之不孕小蕊較短於花瓣，花藥小，心臟形；小蕊花之不孕大蕊圓錐形，長十分之五公厘，闊十分之四公厘，先端有縱溝；子房卵形，長一又十分之八公厘，寬一又百分之二十五公厘，有四楞，柱頭冠狀，有四裂。核果長橢圓形，長六至十二公厘，直徑四公厘半至八公厘，宿存之柱頭顯著，成熟之果紅色有光澤之核四枚，長六公厘半至九公厘半，背寬二公厘半至三公厘半，光滑，背面中間具一縱溝。

此種產於峨眉山之萬行莊，二坪，龍門洞，廣福寺，牛心寺，洪椿坪，會佛寺，觀心坡，新開寺，長老坪以及峨眉山西北之瓦屋山。五月開花，十二月果可成熟。

此種分佈於浙江，安徽，江西，湖北，四川，貴州，廣西，福建，及日本。

本種為成都市上冬季銷售最多之觀賞植物，其深綠之葉與紅色之果甚為艷麗。本種與瑞麗冬青親緣最近，二者之區別為紫花冬青枝葉光滑無毛而瑞麗冬青則枝葉多毛。

圖解： 1. 果枝（原大）； 2. 小蕊花枝（原大）； 3. 小蕊花（放大三倍）； 4. 果（放大三倍）； 5. 核之橫切面以顯示其背面縱溝（放大五倍）。



156. *Ilex purpurea* Hasskarl



Plate 157.

ILEX CHOWII, Hu Shiu-ying.

Aquifoliaceae.

Ilex Chewii Hu shiu-ying, sp. nov.

Arbor; ramuli glaberrimi, tereti, longitudinaliter striato-angulati, brunneo-nigrescentes, sparsi lenticulis ellipticis, hornotini, 4 mm. crassi. Folia tantum annualia in ramulis remanentia, interstitiis 10-20 mm. dissita; stipuli nulli; petioli 20-25 mm. longi, rugosi, supra plani, subtus tereti, glaberrimi; lamina crassa, coriacea, glabra, supra, fuscata at nitidiuscula, subtus pallentior, elliptica, 9-13 cm. longa, 3-4.5 cm. lata; integerrima, basi acuta, apice abrupto-acuminata, costa media supra et subtus elevata; nervis lateralibus utrinque circ. 8-9, sub angula circ. 45°-60°, patentibus, iuxta marginem ad apicem versus arcuatis, supra et subtus prominentibus, iuxta marginem reticulatis. Inflorescentiae in foliorum axillis solitariae, glabrae, umbelliformis; pedunculis 4-5 mm. longis, 1-2 mm. crassis; pedicellis 2-4 mm. longis, 1 mm. crassis, prophyllis minutis, ima pedicelli basi insertis. Flores 5 meri; calyx subtus pelliformis, circ. 4 mm. diam., lobes obtusi usculis ellipticis. Drupa ellipsoidea, 8 mm. crassa, stigmate discoido-coronata, nigrescens, 5-pyrenea. Pyrenis levis, 6 mm. longa, 2 mm. lata; sublignescens, dorso-medio longitudinaliter sulcata.

Small tree, very glabrous; branches terete, last year's growth brown, 6 mm. in diameter, with numerous minute longitudinal splits and few slightly elevated elliptic lenticels; this year's growth shiny brown, nigrescent, 4 mm. in diameter; buds glabrous. Leaves on this year's growth, 1-2 cm. apart; stipule none; petioles 20-25 mm. long, glabrous, rugose, flat above, terete underneath; lamina thick coriaceous, i. s. shiny fuscous above, paler underneath, very glabrous, elliptic, 9-13 cm. long, 3-4.5 cm. wide; apex abruptly acuminate, acumen 1 cm. long, base acute; margin entire, narrowly recurvate in specimen; midrib elevated on both surfaces, glabrous, lateral nerves 8-9 on each side, curved upward and reticulate near the margin, quite prominent on both surfaces. Flowers not seen. Fruits usually 3 in an umbel-like cluster, solitary in the axil of this year's leaf; peduncle 4.5 mm. long, 1-2 mm. thick, slightly enlarged toward the distal end; pedicels 2-4 mm. long, 1 mm. thick, prophylla minute, basal; calyx disk-shaped, 4 mm. across, 5-lobed, lobes obtuse, ciliate; drupe ellipsoid, 8 mm. long, 6 mm. thick, stigma discoid, coronate; pyrenes 5, smooth, 6 mm. long, 2 mm. dorsal wide, with a dorsal longitudinal grooved endocarp, thick coriaceous.

MOUNT OMEI: Ta-ping, H. C. Chow, No. 8178, August 14, 1938.

This species is closely related to *Ilex purpurea* Hasskarl, from which it differs in having entire leaves and 5-pyrened fruit instead of crenate serrulate leaves and 4-pyrened fruit. It is named after the collector, Mr. H. C. Chow. The type specimen is deposited in the Herbarium of the National Szechuan University.

.....Hu Shiu-ying

Fig., 1, a fruiting branch with leaves (natural size); 2. cross-section of fruit showing five pyrenes (enlarged 2 times).

圖版一百五十七

周氏冬青 新種

冬青科

小喬木，全體光滑無毛，枝筴形，二年生枝之標本現褐色，直徑六公厘，具多數小縱裂及稀疏之橢圓形皮孔；本年之枝黑褐色，具光澤，直徑四公厘；芽光滑無毛。葉互生於本年生枝上，相距一至二公分；托葉缺如；葉柄長二十至二十五公厘，光滑無毛，有縱紋，上面扁平，下面著形；葉片厚革質，蠟葉標本之葉腹面黑褐色，背面較淡，全部光滑，橢圓形，長九至十三公分，寬三十至四十五公厘；先端忽然漸尖，漸尖之處長一公分，基部銳尖；邊緣全緣，蠟葉標本之邊緣則略向後面反曲；中肋在葉之兩均面凸起，光滑無毛，側脈每邊八至九條，近邊緣處向先端彎曲且聯絡成網狀，在葉之兩面均顯明。花生於葉腋，五數。果枝似繖形，單生於葉腋；果之總梗長四至五公厘，直徑一至二公厘，近先端處略膨大，果梗長二至四公厘，直徑一公厘，基部具苞；宿存之萼盤狀，直徑四公厘，萼片五枚，先端鈍形，邊緣有睫毛。核果橢圓形，長八公厘，直徑六公厘，柱頭盤狀，冠形，核五粒，光滑，長六公厘，背寬三公厘，正中有縱裂溝紋，內果皮厚革質。

本種生於峨眉山之大坪。與紫花冬青親緣最近。二者之區別在紫花冬青之葉有鋸齒而其果具四核，周氏冬青之葉係全緣，而其果則具五核。此新種之命名係從採集者周鶴昌先生之姓。原種標本存於國立四川大學植物標本室。

圖解：1. 果枝（原大）； 2. 果之縱切面以表示其五核（放大二倍）。



157. *Ilex Chowii* Hu. sp. nov.



Plate 158.

ILEX YUNNANENSIS Franchet.

Aquifoliaceae.

Ilex yunnanensis Franchet, Pl. Delavay. II (1899), 128.- Loesener in Nov. Act. Leop.-Carol. LXXVIII (1901), 131-133; in Sargent, Pl. Wilson. I (1913), 76.- Rehder et Wilson in Sargent, Pl. Wilson. III (1917), 425.- Rehder in Journ. Arn. Arb. VII (1926), 199.- Notes Roy. Bot. Gard. Edinb., XVII (1929), 29, 38, 48, (1936), 178, 262, 381.- Handel-Mazzetti, Symb. Sinicae, VII, Lieferung 3 (1933), 655.

Ilex gentilis Franchet apud Loesener in Nov. Act. Leop.-Carol. LXXVIII (1901), 133.

Much branched shrub, 3-5 metres high; bark smooth, grey; young branchlets densely covered with golden-yellow pubescence, the current year's growth 1-1.5 mm. thick, two-year's growth 2 mm. thick. Leaves alternate, 3-10 mm. apart, on one- or two-year old branchlets; stipules minute, callose, buried in the hairs; petioles 2-5 mm. long, pubescent, flat above, cylindrical below; lamina ovate, ovate acuminate or rarely elliptic, 2-4 cm. long, 1-1.8 cm. wide; base obtuse or round, rarely in some leaves subacute; apex acute, mucronate, sometimes ciliate; thick coriaceous, shiny glabrous above, sparingly pubescent with appressed hairs underneath; margin, i. s., recurvate, basal half entire, the rest crenulate-serrulate; midrib covered with pubescence above, less conspicuous below; lateral nerves 2-4 on each side, very obsolete. Inflorescence solitary, axillary, 3-flowered in the male and 1-flowered in female; peduncles 8-14 mm. long, puberulous, with two minute prophylla inserted above medium; flower 4-merous; calyx cup-shaped, 2½-3 mm. across, lobes triangular, acute, ciliate; corolla white, erect, 4 mm. across at anthesis, petals 4, ovate, obtuse, 1.5-2 mm. long, 1.75 mm. wide; stamens 4, equal petal in length, anther broad ovoid, staminode ½ the length of the petal, sterile anther triangular; ovary globose, with 4 longitudinal deep grooves, style distinct, 0.5 mm. long, stigma 4 lobed, discoid, coronate. Drupe globose, 3-5 mm. in diameter, in specimen, brown, persistent, stigma submammiform discoid. Pyrenes, 4, usually 5 mm. long, dorsal width 3 mm. across, smooth.

MOUNT OMEI: Chieh-yin-tien, alt. 2539 m., small shrub 2 metres high, flowers in buds, *W. P. Fang*, No. 14609, June 27, 1940; same locality, shrub 3 metres high, flowers greenish, *W. P. Fang*, No. 16912, June 15, 1941; southwest of Mount Omei, Opien-hsien, Shaping, Shou-ping-shan, shrub 1 metre high, young fruits green, *C. L. Sun*, No. 1133, August 26, 1939; same locality, in forests, undershrub 3 metres high, young fruits green, *C. L. Sun*, No. 841, July 28, 1939; without precise locality, *C. W. Yao*, Nos. 3774, 3872, 4284 & 4328, in 1939.

Distribution: Szechuan, Sikang, Yunnan.

The golden-yellow pubescence of the branchlets and the solitary fruit of this species is very characteristic. There is no other species in West China with such characters.....Hu Shiu-ying.

Fig. 1, a flowering branch (natural size); 2, a staminate flower (enlarged 10 times); 3, a pistillate flower (enlarged 10 times); 4, a fruit (enlarged 5 times).

Ilex yunnanensis Franchet, var. **brevipedunculata** Hu Shiu-ying, var. nov.

Leaves oval, ovate, elliptic, 2-3.4 cm. long, 1-2 cm. wide, apex acute or obtuse; pedicel of fruit 3-6 seldom up to 7 mm. long, drupe nodding.

Folia ovalia vel ovata vel elliptica, 2-3.4 cm. longa, 1-2 cm. lata, apice acuta vel obtusa; pedicellis fructis 3-6, raro 7 mm. longis; drupis saepius nutantibus.

MOUNT OMEI: Chu-tien, alt. 1800 m., shrub 1 metre high, young fruits green, *T. C. Lee*, No. 6449, July 31, 1939; southwest of Mount Omei, Opien-hsien, Sha-ping, wayside, 3 metres high, *C. W. Yao*, No. 2834 (type), August 22, 1938.

This variety differs from the species in having fruits with short peduncles.....Hu Shiu-ying.
Fig. 5, a fruiting branch (natural size).

圖版一百五十八 雲南冬青

別名：萬年青，豆瓣樹，泡棘棗，小榕，黃蘇木，椒子樹，青壇樹。

冬青科

灌木，具多數之枝，高三至五公尺；樹皮平滑，灰色；小枝密被金黃色絨毛，當年枝直徑一至一公厘半，二年生之枝直徑二公厘，葉互生，相距三至十公厘，着生於當年或第二年生之枝上；托葉甚小，角質，包藏於絨毛中；葉柄長二至五公厘，被絨毛，腹面扁平，背面圓柱形；葉片卵形或卵狀橢圓形，長二至四公分，闊一至一公分八公厘；基部鈍形或圓形，間或呈尖形；先端銳尖，且微呈凸形，間或具睫毛；厚革質，表面光滑，且有光澤，背面具稀疏之絨毛；蠟葉標本葉之邊緣微反捲，近基部之邊緣常約全長之半係全緣，上部之邊緣具細圓鋸齒；中肋在葉表面密被絨毛，在背面不甚顯著，側脈每邊二至四條，不甚顯著，花單生或成簡單之聚繖花序；小蕊花常三枚生於一花序，大蕊花單生；花梗長八至十四公厘，被淺絨毛，具二小苞片，間生，花四出；萼杯形，直徑二公厘半至三公厘，萼片三角形，銳尖，具睫毛；花冠白色，直立，開花時直徑四公厘，花瓣四枚，卵形，鈍尖，長一公厘半至二公厘，寬一公厘餘；小蕊四本，與花瓣等長，花藥闊橢圓形，大蕊花之不孕小蕊之長度僅及花瓣之二分之一，花藥三角形；子房圓球形，具四深溝，花柱顯著，長半公厘，柱頭四裂，盤狀。果實圓球形，直徑三至五公厘，紅色，蠟葉標本之果褐色，柱頭乳頭形，核四粒，長五公厘，平滑。

此種產於峨眉山之接引殿及峨邊縣沙坪之叢林中或草坡。六月開花，九月果可成熟。

此種分佈於四川，西康，雲南三省。

本種被金黃色絨毛之枝與具單生之果，堪作特徵。華西各省尚未發現與其近似之種類。

圖解： 1. 花枝（原大）； 2. 小蕊花（放大十倍）； 3. 大蕊花（放大十倍）； 4. 果實（放大五倍）。

短梗雲南冬青 新變種

葉短橢圓形，卵形或橢圓形，長二公分至三四公厘，寬一至二公厘，先端銳尖或鈍尖；果梗長三至六公厘，鮮有長七公厘者，果下垂。

此變種產於峨眉山之初殿及峨邊之沙坪。

此新變種之主要特徵為其短形之果梗。

圖解： 5. 着果之枝（原大）。



158. *Ilex yunnanensis* Franchet



Plate 159.

ILEX FARGESII Franchet.

Aquifoliaceae.

Ilex Fargesii Franchet in Journ. de Bot. XII (1898), 255; Loesener in Nov. Act. Acad. Caes. Leop.-Carol. LXXVIII, (1901), 239; in Sargent, Pl. Wilson. I (1911), 77.

Shrub or small tree up to 5-7 m. high, glabrous; branchlets (in specimen) brown, old part terete, young angular, smooth, shiny, 4-4.5 mm. thick. This year's growth 1.5-3 mm. thick, subnigrescent. Leaves evergreen, 3-9 mm. apart, stipulate; petiole 2-12 mm. long, deeply furrowed above; lamina chartaceous or tender coriaceous, glabrous, 0.5-1 mm. thick, oblanceolate or sublinear-oblanceolate, 4.5 but usually 6.5-13 cm. long, 0.6-2.2 cm. wide; base narrow acute, apex obsolete acute acuminate or subulate; margin f.s. narrowly recurved, above medium or certainly near apex minute but sharply serrulate, teeth about 1-8 on each side, seldom obsolete; midrib embedded above, expressed underneath, lateral 5-9 on each side, angle of meeting 30°, marginal reticulation evident on both sides. Inflorescence fasciculate, axillary, male 3-flowered, female 1-flowered, glabrous, prophylla near the base of pedicel, ciliate; flowers 4-merous, seldom 5-merous; calyx 2-3 mm. in diameter, glabrous, lobes obtuse or round, with very minute cilia; petals obovate or round, concave, here and there ciliate, 5 mm. long; stamens included. Drupe globose, stigma prominent, thick, discoid, obsolete 4-5 lobes, coronate; 6 mm. in diameter, f.s. reddish rugose, more or less longitudinally striate-sulcate; 4 pyrenes. Pyrene subtrigonal, dorsal longitudinally 3-4 striate-sulcate, lateral oblique striate-rugose 5 mm. long, dorsal 3 mm. wide, woody, very hard.

MOUNT OMEI: Southwest of Mount Omei, Opien-hsien, Sha-ping, small tree, 7 m. high, *C. W. Yao*, No. 4324, August 29, 1939; Hung-ya-hsien, Mt. Wa-wu, Ta-tze-tien, small tree 3 m. high, *C. W. Yao*, No. 3826, June 25, 1939.

DISTRIBUTION: Hupeh, Szechuan, Sikang.

This species is closely related to *Ilex Franchetiana* Loesener. It differs from the latter in having narrower leaves which are toothed only the upper half of the margin.....Hu Shu-ying.

Fig. 1, a fruiting branch with leaves (natural size); 2, dorsal view of pyrene (enlarged 3 times); 3, lateral view of pyrene (enlarged 3 times).

圖版一百五十九

法氏冬青 別名：狹葉冬青

冬青科

常綠灌木或小喬木。高五至七公尺，光滑無毛，小枝（標本）褐色，箬形，嫩枝有楞角，平滑有光澤，直徑四至四公厘半，本年之枝直徑一公厘半至三公厘，紫黑色。葉互生，節間三至九公厘；無托葉；葉柄長三至十二公厘，腹面有深溝；葉片紙質或薄革質，光滑無毛，厚半公厘至一公厘，倒披針形或帶狀倒披針形，長四公分半，惟通常長六公分半至十三公分半，寬六公厘至二公分二公厘；基部銳尖，先端銳尖或漸尖；標本之邊緣略向後捲，中部以上或近先端處有尖鋸齒，每邊之齒為一至八個，少有不顯著者；中肋腹面凹入，背面顯露，側脈每邊五至九條，與中肋相交成三十度之角，近邊緣成顯然之脈網。密繖花序，腋生，小蕊花三花為一枝，大蕊花單生，光滑無毛，柄上苞近花梗之基部，有睫毛；花四數，鮮有五數者；萼直徑二至三公厘，光滑無毛，萼片鈍形或圓形，邊緣有小睫毛；花瓣倒卵形或圓形，有少數之睫毛，長五公厘；小蕊包於花冠內。果球形，宿存之柱頭顯明，盤形，有不甚顯然之四至五裂，冠形；果之直徑六公厘，紅色，皮糙，略呈縱紋溝，有四核。核三角形，背面有三四縱脊溝，兩旁亦有溝紋，長五公厘，背寬三公厘，木質甚堅硬。

本種產於峨眉山西北之洪雅縣瓦屋山及西南之峨邊縣鹽井溪。

本種分佈於湖北，四川，西康三省。

本種與樊氏冬青親緣最近，二者之區別為樊氏冬青葉較寬，其邊緣之鋸齒幾至基部。本種則為窄葉，其鋸齒僅及邊緣之上半。

圖解： 1. 果枝（原大）； 2. 核之背面觀（放大三倍）； 3. 核之側面觀（放大三倍）。



159. *Ilex Fargesii* Franchet



ILEX FRANCHETIANA Loesener.

Aquifoliaceae.

Ilex Franchetiana Loesener in Sargent, Pl. Wilson. I (1913), 77.- Rehder et Wilson in Sargent, Pl. Wilson. III (1917), 426.- Notes Roy. Bot. Gard. Edinb., XIV (1924), 362.- Coult. in Notes Roy. Bot. Gard. Edinb., XVIII (1933), 48.

Shrub or small tree 3-6 meters high, glabrous; branchlets brown-nigrescent; this year's growth angular, smooth, 2-6 mm. thick. Leaves estipulate; petiole 6-12 mm. long, deeply grooved above; lamina 1-3 mm. thick, obovate-elliptic, oblong up to oblanceolate, rarely lanceolate-elliptic, 7-12.8 cm. long, 1.7-3.5 cm. wide, chartaceous or coriaceous, glabrous; margin (in specimen) narrowly recurved, densely or remotely and sharply serrulate, near base often entire; base cuneate or rarely cuneate-subobtusate; apex abruptly manifested and abruptly acuminate, acumen up to 19 mm. long; midrib (in specimen) impressed or imbedded above, expressed underneath, lateral nerves 7-10 on each side, angle 30°-60°, reticulation inconspicuous above. Inflorescence fasciculate, male 1-3 flowered, female 1-flowered; glabrous, bract oval, coriaceous, 2 mm. long, margin entire and deliberately ciliate; peduncle of male flower 1 mm. long, pedicel 2-4 mm. long; pedicel in female up to 4 mm. long, prophylla membranous, sub-medium 1 in male, 2 in female, flower white, fragrant, 4-merous; calyx cup-shaped, 4-lobed, lobe ovate-deltoid, obtuse or round, 1 mm. long, deliberately ciliate or entire; corolla rotate in male, erect in female, petals 4, oblong-ovate, 2 mm. long, 1½ mm. wide; stamen subequal petal in length, anther oblong, 0.75 mm. long; staminode shorter than petal, sterile anther subcordiform; ovary subovoid, obsolete longitudinally 4-furrowed, stigma fleshy, discoid, 4-lobed, coronate, sterile pistil of male flower conical, apex obtuse 0.3 mm. long. Drupe globose, stigma persistent, discoid, coronate, 6 mm. in diameter, red, rugose, striate-sulcate; 4-pyrenes. Pyrene subtrigonous, with 1 medium and 4 half-length longitudinal dorsal ridges and the sides are ridged and somehow reticulated.

MOUNT OMEI: without precise locality, *Wilson*, Nos. 4794, 4796, 3318; south of Mount Omei, Opieh-hsien, Yen-king-chi, *C. C. Chung* No. 6525, in 1936; same locality, Shaping, in forests, shrub 5 meters high, young fruits green, *C. L. Sun*, Nos. 840 & 847, July 28, 1939; same locality, wayside, small tree, 7 meters high, fruit red, *C. W. Yao*, Nos. 2770 & 2774, August 18-19, 1938; same locality, tree 8 meters high, *C. W. Yao*, No. 4331, August 29, 1939; Hung-ya-hsien, Wa-wu Mountain, wayside, in forest, tree 8 meters high, *C. W. Yao*, Nos. 2209, July 8, 1938; same locality *C. W. Yao*, No. 3826, in June 25, 1939.

HUPEH: Changyan-hsien, *Wilson*, No. 148.

SZETCHUAN: Kuan-hsien, alt 3000-3600 ft., in thickets, small tree, 5 meters high, fruits green, globose, *W. P. Fang*, No. 2222, July 14, 1928; Pan-lan Shan, woodland, alt. 3000 ft., *Wilson*, No. 4316; Nan-chuan-hsien, Chin-fu Mount., in thickets, small tree 6-meter high, *W. P. Fang*, No. 641. This specimen fits Loesener's description best (*S. Y. Hu*); without precise locality, *K. L. Chu*, No. 1408.

SIKANG: Pao-hsing-hsien (Mupin), Kan-yang-ko, alt. 3000 ft., in woodland, small tree, 4 meters high, bark greenish black, fruit green, *K. L. Chu*, No., 3301; Ta-chienlu, *Wilson*, No. 1957.

When Loesener described this species he added: "This species is closely related to *Ilex Fargesii* Franchet which differs in the shape of leaf." The characters he mentioned are the narrow leaf, the devoid of serrulation below the middle, the gradually narrowing base and the shorter and broader apex of the latter. These characters are quite variable. With amply of specimens, I have seen several intermediate cases such as *C. W. Yao* 2836 which specimen may well be considered as a narrowed-leaf *Ilex Franchetiana* Loesener or a broad-leaf *Ilex Fargesii* Franchet. We have very few specimen of the latter. The leaves of the few specimens we have are thicker than that of *Ilex Franchetiana* Loesener. Thus, before I see the type specimen, I keep the two as separate species.....*Hu Shiu-ying*.

Fig. 1, a fruiting branch (natural size); 2, a part of male inflorescence (enlarged 3 times); 3, a male flower (enlarged 3 times); 4, a female flower with bract and prophylla (enlarged 3 times); 5, dorsal view of a pyrene (enlarged 3 times); 6, side view of a pyrene (enlarged 3 times); 7, cross section of a pyrene (enlarged 3 times).

Ilex Franchetiana Loesener var. **parvifolia**, *Hu Shiu-ying* var. nov.

Folia parva, lamina obovata vel elliptica, 3-6 cm. longa, 1.2-2.6 cm. lata, basi cuneata, apice breviter acuminata, margine serrata, costa media supra insculpta, subtus prominente, nervis lateralibus

stringue circ. 6-7. Drupa globosa, 3-5 mm. diam., 4-5 pyrenidis; pyrenis parva, 2-4 mm. longa, striato-sulcata, lignescens.

Leaves uniformly small, 3-6, seldom up to 7 cm. long, 1.2-2.6 cm. wide, obovate or elliptic, apex abruptly acuminate, base cuneate, margin serrate, midrib insculpted, lateral veins 6-7 on each side, manifestly insculpted above, prominent below, reticulation of veinlets conspicuous above. Fruit globose, 3-5 mm. in diameter, 4-5-pyrened, pyrene 2-4 mm. long, striate and sulcate, lignified.

MOUNT OMEI: without precise locality, T. H. Tu, No. 303, spring, 1935 (type for flower, two specimen were seen); south of Mount Omei, Oplen-hsien, Shaping, small tree, 1.5 meter high, fr. red. C. W. Yao, No. 2824, August 21, 1938, (two specimens were seen); same locality, small tree, 3 meters high, C. W. Yao, No. #306, August 29, 1939, (two specimens were seen. The fruit of these specimens are large, up to 6 mm. in diameter. Each has 4 pyrenes, pyrenes 5 mm. long, 2 mm. wide.); Hung-ya-hsien, Wa-wu Mountain, shrub 80 cm. high, fruit globose, C. W. Yao, No. 2380. July 20, 1938, (Two specimen were seen. Type for fruit of the variety. These specimens have smaller fruits, 4 mm. in diameter, 4-5 pyrenes, 2½ mm. long, 2 mm. wide.)

This small-leaved variety fits Loesener's discription for the species well except the leaves are uniformly smaller than *Ilex Franchetiana* Loes.....Hu Shiu-ying.

Fig. 8. a fruiting branch of variety - *Ilex Franchetiana*, var. *parvifolia* (natural size).

圖版一百六十 樊氏冬青 冬青科

常綠喬木或灌木，高三至六公尺，光滑無毛；小枝黑褐色，本年之枝有楞角，平滑，直徑二至六公厘。葉互生，托葉缺如；葉柄長六至十二公厘，腹面有深溝；葉片厚一至二公厘，薄革質，倒卵狀橢圓形，長橢圓形以至倒披針形，鮮有披針形者，長七至十二公分半，寬一公分七至三公公分半，光滑；邊緣微向背面捲褶，有細小鋸齒，近基部通常全緣；基部楔形，少有楔狀鈍尖者；先端突然漸尖，近頂處銳尖，漸尖之部長九公厘，中肋腹面凹入，背面凸出，側脈每邊七至十條，與中肋相交所成之角三十至五十度，小脈網表面不顯著，小蕊花一至三枚成聚繖小花序，大蕊花單一，無毛，花序下之苞片卵形，長二公厘，革質，邊緣全緣且有稀疏之睫毛，小蕊花之總梗長一公厘，花梗長二至四公厘，大蕊花之梗長四公厘；梗上苞膜質，小蕊花者一片，大蕊花者二片。花白色，有芳香，四數；萼杯形，四片，萼片卵狀三角形，先端鈍尖或圓形，長一公厘，有稀疏之睫毛或全緣；小蕊花之花冠幅輪狀，大蕊花之花冠直立，花瓣四片，長橢圓狀卵形，長二公厘，寬一公厘半；小蕊與花冠等長，花藥長橢圓形，長百分之七十五公厘；不孕小蕊較花冠為短，花藥呈心臟形；子房卵形，有四縱溝，柱頭肉質，盤狀，四裂，冠形，不孕大蕊圓錐形，先端鈍形，長十分之三公厘。果球形，柱頭宿存，盤狀冠形，成熟時紅色，直徑六公厘，有縱溝，核四粒，三角形，背面中間有縱凸脊，其兩旁各有二脊至其腰部，種子側面亦有略呈網狀之脊。

此種產於峨眉山西北之焚經縣瓦屋山及峨眉山西南之峨邊縣沙坪鹽井溪等處。

此種分佈於湖北，四川，西康等省。

當陳氏發表其新種時曾提：本種與法氏冬青之親緣最近，所論之區別如法氏冬青具狹窄之葉，葉基無鋸齒之邊緣等皆有出入之處，如姚仲吾氏二八三六號標本，則有介乎二者之間之現象，惟吾人所有之標本者太少，不易比較，暫仍列為兩種。

圖解： 1. 果枝（原大）； 2. 小蕊花枝之一部（放大三倍）； 3. 小蕊花（放大三倍）， 4. 大蕊花與苞及柄上之苞（放大三倍）； 5. 核之背面觀（放大三倍）； 6. 核之旁面觀（放大三倍）； 7. 核之橫切面（放大三倍）；

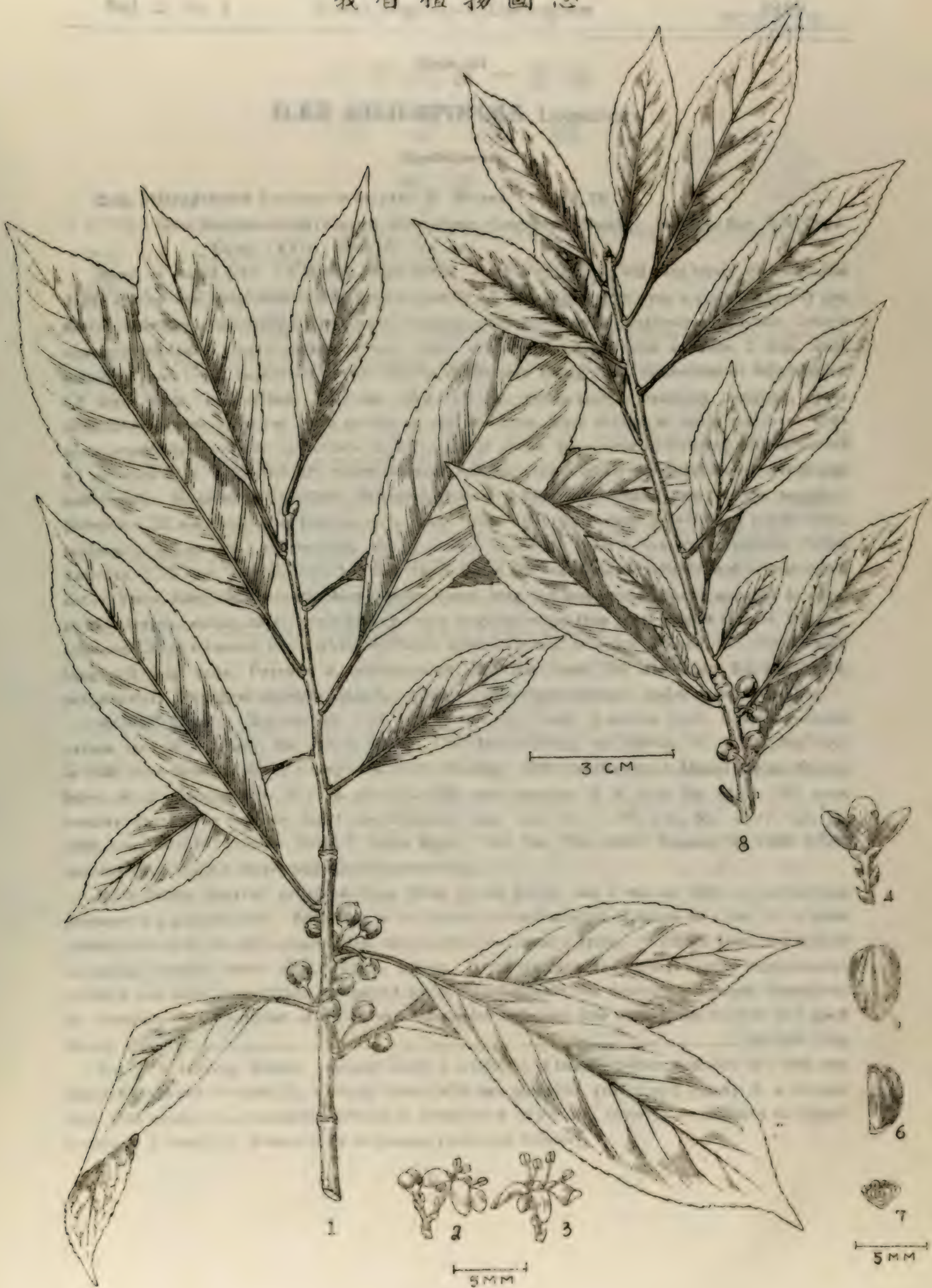
小葉樊氏冬青 新變種

本變種產於峨眉山西北之洪雅縣瓦屋山及西南之峨邊縣沙坪。

本變種與樊氏冬青之區別在其葉較小，約等樊氏冬青之半。

葉較樊氏冬青小。葉片倒卵形或橢圓形，長三至六公分稀達七公分，寬一公分二至三公公分六公厘，先端忽然漸尖，基部楔形，邊緣具鋸齒，中肋凹入，側脈每邊六至七條，腹面凹入，背面顯然，腹面之小脈網清晰。果球形，直徑三至五公厘，內有核四五粒，核長二至四厘，有脊溝，木質化。

圖解： 8. 變種之果枝（原大）。



160. *Ilex Franchetiana* Laesener



Plate 161.

ILEX CILIOSPINOSA Loesener.

Aquifoliaceae.

Ilex ciliospinosa Loesener in Sargent, Pl. Wilson. I (1913), 78.*Ilex bioritsensis* Hayata var. *ciliospinosa* (Loesener) Comber, in Notes Roy. Bot. Gard. Edinb., XVIII (1933), 43. *syn. nov.*

Shrub or small tree, 1-4 metres high, branch erect or spreading, old twig terete, covered with dense cracks and roughness; three year's growth 4-5 mm. thick; this year's growth densely and shortly subvillose, minutely hirsute, later becoming glabrous, obsolete longitudinal striolate. Leaves remaining on fourth year's growth, 11 mm. apart; stipule persistent, thick subulate, 1 mm. long; petiole 2 mm. long, impressed above; lamina deliberately strong dusty puberulent or subglabrous, 15 mm. thick, oval-oblong, 2.5-5 cm. long, 1-2 cm. wide; margin narrowly recurved, spiny denticulate-serrate, spines of teeth stretching out, ciliiform; base obtuse or cuneate-obtuse; apex acute-acuminate, narrowed; coriaceous, midrib insculpt above, prominent underneath, lateral nerves 4-7 on each side, angle 40°-80°, reticulate near margin, very slightly insculpt above, prominent underneath. Inflorescence axillary, fascicled, female 1-flowered, usually two flowers together; peduncle 1.75 mm. long, after fruiting up to 3 mm. long, deliberately short pulverulent; prophyllis 2, medium or submedium, subscarious, oblong-deltoid-lanceolate, margin irregularly serrate; Calyx disc-like, 1.75 mm. across, after fruiting up to 3 mm. across, 4-lobed, lobe deltoid or subrotund, entire, 1 mm. long; corolla erect, oblong-ovate, 3 mm. long, 1.5 mm. wide; sterile stamens 4, equal petal in length, anther linear; ovary oblong-ovate, slightly longer than petal, stigma discoid, 2-lobed, coronate. Drupe ellipsoid, i. s., slightly wrinkled, stigma discoid, coronate, 2-lobed, i. v., red, 7-8 mm. long, 4-5 mm. wide. Pyrenes 2, oblong-ovoid, 5.5 mm. long, 3-4 mm. wide, 2.5 mm. thick, subpalmately 5-6-ridged dorsally, ridges reticulate, 2-3-striate ventrally, endocarp rather tender.

MOUNT OMEI: Chu-tien, alt. 1800 m., in thickets, shrub 2 metres high, flowers greenish yellow, rare, *W. P. Fang*, No. 14800, May 21, 1940; Hua-yen-ting, alt. 1950 m., *T. H. Tu*, No. 720, in 1935; same locality, *W. C. Cheng*, No. 6591, October 1936; Southwest of Mount Omei, Opienthsien, *W. C. Cheng*, Nos. 6216 & 6456, in 1936; same locality, *S. N. Hsu*, No. 69, in 1937; same locality, Shaping, in thickets, small tree, 2 metres high, fruit red, *C. W. Yao*, No. 4279, July 27, 1939; same locality, wayside, shrub 1 metre high, *C. W. Yao*, No. 2808, August, 30, 1938. (This specimen has smaller leaves and shorter peduncles).

With ample material collected from West China before me, I can say that *Ilex ciliospinosa* Loesener is a good species. According to its form of leaf and number of spines on a leaf, it is more closely related to *Ilex diphyrena* Wallich than to *Ilex bioritsensis* Hayata. It differs from the former in having smaller leaves and ciliiform spines. It differs from the latter in having larger leaves, ciliiform and many more spines and paired fruits. Furthermore, its densely pubescent branchlets, its conspicuous reticulation of veins and its tender endocarp also distinguish itself to be a good strong species

Hu Shiu-ying

Fig. 1. a fruiting branch, (natural size); 2. a fascicle of female flowers with half of a leaf, and stipule, (enlarged 3 times); 3. a female flower with two prophyllis. (enlarged 5 times); 4. a mature fruit with prophyllis, (enlarged 3 times); 5. dorsal view of pyrene, showing reticulation of ridges. (enlarged 3 times); 6. Ventral view of pyrene; (enlarged 3 times).

圖版一百六十一

睫刺冬青

冬青科

常綠灌木或小喬木，高達四公尺，大枝直立或平斜，小枝圓柱形，灰色，表面粗糙，現多數縱裂，三年之枝直徑四至五公厘，本年之枝密被短絨毛，漸老則呈光滑，具不顯著之縱紋，葉互生於一至四年之枝上，相距十一公厘；托葉尖銳，宿存，長一公厘；葉柄長二公厘，腹面凹入；葉片革質，具稀疏之短毛；或近於光滑，厚一公厘半，短橢圓形以至長橢圓形，長二公分半至五公分，寬一至二公分，基部鈍尖楔形或鈍尖，先端鈍狀漸尖，邊緣略向背面捲摺，具尖刺之齒狀鋸齒，刺尖外向，睫毛狀，長一至二公厘；中肋在表面凹入，在背面顯著，側脈每邊四至七條，與中肋相交成四十至六十度之角，在表面微凹，在背面顯著。密繖花序腋生，大蕊花常二花同生於葉腋，亦有三花者，惟甚少；花梗長一又百分之七十五公厘，結果之後可增長至三公厘，具稀疏之短毛，苞片生於花梗上中段或較近於基部，亞膜質，長橢圓三角形或披針形，邊緣具不規則之鋸齒；花萼盤狀，直徑一又百分之七十五公厘，結果後則長大達三公厘，萼片四枚，三角形或呈亞圓形，全緣，長一公厘；花冠有立，卵狀長圓形，長三公厘，寬一公厘半，不孕小蕊四本，與花冠等長，花藥綫形；子房卵狀長圓形，較花冠略長，柱頭盤形，二裂成花冠狀，核果橢圓形，在標本上之果多皺紋，柱頭顯著，二裂盤狀，新鮮之或熟果實紅色，長七至八公厘，直徑四至五公厘，核二粒，長卵圓形，長五五公厘半，寬三至四公厘，厚二公厘半，背面具五至六脊，脊略呈網狀，腹面具二至三紋，內果皮頗薄軟。

此種產於峨眉山之初殿，華嚴頂及峨眉山西南峨邊縣。五月開花，九月果可成熟。

英人 Comber 以此種為畢歐冬青之一變種，吾意甚不以為然，蓋依葉之形狀與葉緣之棘刺，睫刺冬青與兩核冬青之親緣較其與畢歐冬青者尤近，睫刺冬青之葉長約五公分，較兩核冬青之葉，長寬小一倍，其刺又為多數睫毛狀，畢歐冬青之葉較睫刺冬青之葉又略小三分之一，且其邊緣最多不過兩刺，此外睫刺冬青多毛之枝，脈紋顯著之葉與其薄軟之內果皮，皆示其為獨立之種而非畢歐冬青之變種。

圖解：1. 果枝（原大）；2. 大蕊花之一簇與葉之一半（放大三倍）；3. 大蕊花與其梗上苞片（放大五倍）；4. 成熟之果與其柄上之苞（放大三倍）；5. 核之背面觀顯示網狀之脊（放大三倍）；6. 核之腹面觀（放大三倍）。



161. *Ilex ciliospinosa* Loesener



Plate 162.

ILEX PEKNI Franchet.

Aquifoliaceae.

Ilex Pernyi Franchet in Nouv. Arch. Mus. Paris, Ser. 2. V. (1884) 221 (Pl. David. 1. 69).—
 Oliver in Hooker Icon. Pl. XVI. (1881), t. 1539.—Maximowicz in Act. Hort. Petrop. XI (1889), 96.—
 Loesener in Nov. Act. Acad. Leop.-Carol. LXXVIII (1901), 273; in Sargent, Pl. Wilson. 1 (1913), 73.—
 Hemsley in Journ. Linn. Soc. Bot. XXIII (1888), 117.—Rehder in Journ. Ara. Arb. VII (1926), 199;
 VIII (1927), 186.—Comber in Notes Roy. Bot. Gard. Edinb. XVIII (1933), 57.

Shrub or sometimes tree up to 10 metres high, bark grey, covered by small cracks; old branchlets
 subterete, this year's growth subangular, deliberately and shortly hirtellous, longitudinally striate and
 furrowed, densely foliated. Leaves remain on 4-year's growth, 0-10 mm. apart; stipules very
 minute, gibberiform, often subconspicuous; petioles 1-2 mm. long, seldom longer, rugose; lamina
 coriaceous; lucid, subrhomboid or subquadrate-ovate, 1.5 cm. long, 1-1.3 cm. wide (spines excluded);
 margin slightly thickened, i. s. recurved, with 1-2 spiny-teeth on each side, spines triangular, rigid,
 outstretching, base rounded or subcordate, apex deltoid, covering about half of the leaf; midrib
 slightly impressed above, inconspicuous, prominent underneath, lateral nerves 2-3 on each side,
 invisible above, conspicuous and reticulate underneath. Inflorescence axillary, subsessile, 2-3 in a
 fascicle; sepals rounded, ciliate, (petals not seen). Drupe ovoid (according to Franchet), globose,
 4-pyrened; Pyrenes broadly trigonous, with 5 striates at dorsal side, endocarp tender, leathery.

SIKANG: Pao-istn-hsien (Mupin), alt. 2750 m., among bushes, shrub 1-2 metres high, fr. green,
K.L. Chu, No. 3090, July 5, 1936; same locality, alt. 2800 m., small shrub 1-2 m. high, bark silvery
 grey, flowers white, *K.L. Chu*, No. 2456, May 30, 1936.

Distribution: Shensi, Kansu, Hupheh, Szechwan, Sikang, Kweichow, Yunnan.

Among the small leaf spiny hollies *Ilex Pernyi* Franchet differs from all the rest in having four
 pyrenes white, the others all have two pyrenes only.....Hu Shiu-ying.

Fig. 1, a fruiting branch (natural size); 2, a cross section of fruit showing four pyrenes
 diagrammatic (enlarged 2 times).

圖版一百六十二

裴氏冬青

俗名：貓兒刺，老鼠刺。

冬青科

灌木或喬木，高可達十公尺，樹皮銀灰色；枝箬形，現裂紋；本年之枝略現楞角，具稀疏之短毛與縱溝紋。葉密生於一至四年之枝上；托葉極小，瘤狀，多不易辨識；葉柄長一至二公厘，鮮有較長者，表面粗糙；葉片革質，有光澤，略呈菱形或四方卵形，長一公分半，寬一至一又三分之一公分（刺不計算在內）；邊緣略厚，向背面捲曲，每邊具一至二刺，刺三角形，堅硬，向外伸展，基部圓形以至心臟形；先端三角形，具長刺，刺長幾等葉片之半，中肋在表面略凹入，不顯著，在背面顯著，側脈每邊二三條，表面幾不可見，背面顯著，呈網狀。花生於葉腋，多二三花聚生成簇；萼片圓形，具睫毛。果卵圓形（按法氏記載），球形，含核四粒，核闊三角形，背部具五縱紋，皮薄革質。

此種產於西康寶興縣，在峨眉山則尚待發現。

此種分佈於陝西，甘肅，湖北，四川，西康，貴州及雲南等省。

裴氏冬青與其他各種小葉帶刺之冬青相異之處乃在其具核四粒，而其餘之小葉刺冬青僅具核二粒。

圖解：1, 果枝（原大）；2, 果之橫剖面示其內四核之位置（放大二倍）。



162. *Ilex Pernyi* Franchet

SZECHUAN: Nanchuan-hsien, Mt. Chin-fu, alt. 1000-1200 m., in thickets, small tree, 5 metres high, leaves very thick, with strong spines, fruits small, oblong, *W. P. Fang*, No. 976, May 18, 1927, (This specimen has young fruits. Some still retain their petals. Rehder has seen it and named it *Ilex pernyi* Fr. var. *weitchii* Rehd. I made cross sections of some of the fruits and found each contains only two cells. Thus it cannot be *Ilex pernyi* Fr. which has four pyrenes. Hu Shiu-ying); Yung-ching-hsien, Mt. Wa-wu, wayside, small tree, 4 metres high, fruit red, ovoid, *C. W. Yao*, No. 2224, July 8, 1938; without precise locality, *H. C. Chow*, No. 10005, in 1938.

KWEICHOW: Mt., Fan-ching, *P. T. Toong* No. 1041, July 28, 1939.

This species is closely related to *Ilex ciliospinosa* Franchet, *Ilex dypirena* Wallich and *Ilex bioritsensis* Hayata. It differs from *ciliospinosa* Franchet in having subquadrate leaves with 2-3, never more than three, robust spines on each side while the latter has oblong-elliptic leaves with many cilioform spines on each side. It differs from *Ilex dypirena* Wallich in having small leaves, 2.5-4.8 cm. long, while the latter has 4.5-15 cm. long leaves with 6-7 spines on each side. It differs from *Ilex bioritsensis* Hayata in having paired fruits and larger leaves while the latter has solitary fruits and rhomboid-obovate leaves, 3½ cm. long and 1-2 spines on each side..... Hu Shiu-ying.

Fig. 1, a fruiting branch (natural size); 2, dorsal view of pyrene (enlarged 3 times); 3, ventral view of pyrene (enlarged 3 times); 4, cross-section of pyrene (enlarged 3 times); 5, a female flower (enlarged 5 times).

The type specimens are deposited in the Herbarium, Biological Laboratory, Science Society of China and the Herbarium, National Szechuan University.

圖版一百六十三

雙子冬青 新種

冬青科

常綠灌木或小喬木，高達四公尺，老枝圓柱形，灰色以至灰褐色，縱裂，三年之枝直徑三公厘，二年與本年枝上被短毛，著狀，現縱溝，稀現稜角，葉密集，互生於一至四年之枝上，相距三至十公厘；托葉極小；葉柄長二至三公厘，嫩時有短毛，漸老則光滑；葉片厚革質，蠟標本之葉表面現皺紋，色常暗淡，稀有光澤，青褐色，背面暗淡，多皺紋，淡黃褐色，長橢圓形，卵形或亞稜形，長二公分三公厘至四公分八公厘，寬一至二公分半（棘刺除外）；邊緣較厚，略向背面捲摺，每邊具二至三枚粗大之刺，刺長一至三公厘，先端外向；基部圓形，稀楔形或截形；先端三角形，漸尖；中肋表面凹入，在背面顯著，每邊有四至六側脈，在葉表面亦凹入，在背面略突起但亦不甚顯著，近邊緣處網狀，密繖花序，腋生，每葉腋二至三花；花四出，花梗長一至一又百分之二十五公厘，有三角形狀之柄上苞片二枚，花萼杯形，直徑二又十分之五公厘，萼片四枚，三角形，長一公厘，先端鈍尖抑或圓形，邊緣有稀疏之睫毛，大蕊花之花冠直立，花瓣卵形或倒卵形，長三公厘，寬二公厘，不孕之小蕊較花瓣略短或等長，花藥呈亞心臟形；子房甚大，長橢圓狀圓錐形，長三至四公厘，柱頭盤狀，核果橢圓狀球形，長六至八公厘，胸寬五至七公厘，果梗長約二公厘，有毛，核兩粒，背腹略扁，闊橢圓形，或略呈亞圓形，長五至六公厘，寬四至五公厘，厚二公厘半，內果皮甚厚，木質。

此新種產於峨眉山之初殿，華嚴頂及峨眉山西北之瓦屋山，峨眉山西南之峨邊縣，以及川東之南川縣金佛山等處。

本種與睫毛冬青，畢歐冬青及兩核冬青親緣最近，三者每果各有兩核，其異點為雙子冬青之葉每邊有二至三粗大外向之棘刺，而睫毛冬青有多數睫毛狀棘刺，兩核冬青之葉甚大，每邊有六至七刺，畢歐冬青之葉每邊僅一或二刺，且其果為單生。

圖解：1.果枝（原大）；2.核之背面觀（放大三倍）；3.核之腹面觀（放大三倍）；4.核之橫切面（放大三倍）；5.大蕊花（放大五倍）。



163. *Ilex diplosperma* SHui-Ying Hu

五國神藥草



Plate 164.

ILEX INTERMEDIA Loesener.

Aquifoliaceae.

Ilex intermedia Loesener in Nov. Act. Acad. Caes. Leop. Carol. LXXVIII (1901), 273; Handel-Mazzetti, Symb. Sinicae, VII, Lieferung 3 (1933), 655

Small tree usually 5 to 7 meters high; branches erect, old branchlets terete, young branchlets slightly angulate, in specimen, deep brown, this year's growth deliberately papillose-puberulous at first, glabrescent later, 2.5-3.5 mm. in diameter. Leaves 3-27 mm. apart; stipules small, deltoid, acuminate, 1 mm. long; petioles 8-12 mm. long, glabrous, longitudinally impressed above; lamina chartaceous, oblong-lanceolate or oblanceolate, rarely oval-oblong or suboval, 6-12.5 cm. long, 2.4-4.5 cm. broad; narrowly recurvate on the margin, remotely denticulate or crenulate-serrulate; base cuneate: apex short and obtuse, sometimes broadly acuminate, callous; upper surface glabrous, greyish-olive except minutely and shortly dusty-papillose near the base and on the midrib; lower surface pale green; midrib slightly sulcate or plane on the upper surface, elevated at the lower surface, lateral nerves 4-8 on each side, angle 40°-70°, obsolete at the upper surface, prominent and reticulate near the margin at the lower surface. Inflorescences axillary fascicles, male ones usually 3-flowered, sparingly puberulent-pilose; bracts deltoid, acute, glabrous, ciliate, prophylla inserted near the base of pedicel, ciliate; peduncles about 1 mm. long; pedicels 2 mm. long, flowers 4-merous; calyx 1.5 mm. in diameter, glabrous, calyx-lobes and calyx-tube subequal in length, broadly triangular, obtuse at the apex, sparingly ciliate on the margin, 0.5 mm. long, 0.5-1 mm. broad; corolla rotate, petals obovate-elliptic, 3.3-3.5 mm. long, 1.8 mm. broad; stamens slightly longer than petals, anthers ovoid; sterile pistil subglobose; female flowers not seen. Drupe ellipsoid, 10-12 mm. in diameter, i. s. wrinkled, dark brown, stigma mammiform, 4-pyrened; pyrenes obovoid, trigonous, 7-9 mm. long, dorsal side 3 mm. broad, with one complete ridge at the middle side and 1-2 incomplete ridges and furrowed, reticulate at the lateral sides; endocarp ligneous or bony.

MOUNT OMEI; Ching-yin-Ko, alt 930 m., in thickets, small tree 4 metres high, occasionally, *W. P. Fang*, No. 12579, July 27, 1938; Pao-ku, small tree 4 metres high, young fruits greenish-ovoid, *W. P. Fang* No. 18540, April 28, 1942; Hung-chun-ping, alt. 1147 m., in thickets, small tree 3 metres high, fruits ellipsoid, green, *G. L. Sun*, No. 175 & 179, May 8, 1939; same locality, on slopes, small tree 5 metres high, flowers yellow, *T. C. Lee*, No. 4438, March 30, 1940; same locality, *W. W. Ma*, No. 2691, July 7, 1940; same locality, small tree with ellipsoid and brown fruits, *W. P. Fang*, No. 14971, October 7, 1940. same locality, small tree 4 metres high, fruits coral-red, subglobose, *W. P. Fang*, No. 15296, November 13, 1940; Pien-dan-ai, alt. 1400 m., small tree 3 metres high, flowers greenish, *W. P. Fang*, No. 18229, March 23, 1942; She-tao-tui, alt. 1300 m., in woods, small tree 5 metres high, bark green, leaves deep green above and light green below, fruits purplish-green, 7 mm. in diameter, common, *W. W. Ma* No. 2339, June 14, 1940; same locality, in woods, tree 7 metres high, *W. W. Ma*, Nos. 2762 & 2771, July 12, 1940. same locality, in woods, tree 7 metres high, young fruits green, *T. C. Lee*, No. 3710, August 3, 1940; Hsin-Kai-ssu, alt. 1600 m., small tree with green and ovoid young fruits, *W. P. Fang*, No. 16496, May 6, 1941; Yu-shien-ssu, alt. 1771 m., tree 14 metres high, fruits yellowish and ovoid, *W. P. Fang*, No. 15517, November 26, 1940, without precise locality, *T. H. Tu*, No. 757, in 1936; without precise locality, *C. W. Yao*, No. 3659, in 1938; without precise locality, *S. N. Hsu*, No. 678, in 1938.

Distribution; Hupeh, Szechuan.

Plate 164

The large fasciculate fruits of this species resemble those of *Ilex cornuta* Lindley. But it differs from the latter species in the leaves which are devoid of spiny teeth on the leaf-margin. The elliptic lamina of *Ilex tatarica* provides another difference to the cordate or subquadrangular lamina of *Ilex cornuta*.

Fig. 1. a fruiting branch (natural size); 2. a flowering branch (natural size); 3. a single male flower showing sterile pistil (enlarged 10 times); 4. side view of a male flower (enlarged 10 times); 5. dorsal side of a pyrene (enlarged 5 times); 6. a ventral side of pyrene (enlarged 5 times).

圖版一百六十四

中型冬青

冬青科

小喬木，大枝直立，較老之小枝箬形，嫩枝具楞角，臘葉標本之小枝深褐色，本年之枝具稀疏之短毛，漸老則光滑，徑二公厘半至三公厘半，葉相距三至廿七公厘；托葉甚小，三角形，漸尖，長一公厘，葉柄長八至十二公厘，光滑無毛，上面具縱溝；葉片紙質，長橢圓狀披針形以至倒披針形，稀為卵狀長橢圓形或倒卵形，長六至十二公分半，寬二至四公厘至四五公厘，邊緣略向背面捲曲，具稀疏之牙狀鋸齒或圓鋸齒，基部楔形，先端銳形或突然漸尖，並具角質之黑點；表面近基部與中肋上皆具灰塵狀短毛，其餘部份光滑，臘葉標本之葉片青灰色，背面較淡，中肋上面扁平或略凹入，下面凸出，側脈每邊四至八條，與中肋相交成四十五至七十度之角，表面不顯，背面易見，近邊緣呈網狀，密繖花序腋生，小蕊花常三花成一小枝，梗上被稀疏之短毛；苞片三角形，先端銳尖，表面光滑，邊緣具睫毛，梗上小苞着生於梗之基部，具睫毛；花梗長一公厘，小花梗長二公厘；花四數，花萼直徑一公厘半，光滑無毛，分離與聯合之部幾等長，裂片闊三角形，先端銳尖，邊緣具稀疏睫毛，長半公厘，寬半公厘至一公厘，花冠幅輪狀，花瓣倒卵狀橢圓形，長三公厘三至三公厘半，寬一公厘八，小蕊較花冠略長，花藥卵形；不孕大蕊略呈球形；果長橢圓形，長十至十二公厘，花梗直徑八至十八厘，臘葉標本之果土褐色，多網紋，柱頭乳頭形，每果具核四粒。核倒卵狀三角形，長七至九公厘，背部寬三公厘，正中具縱脊一條，其兩邊各具較短之脊一二條，近較寬之端脊漸模糊或相連成網狀，脊間具溝，核側亦有脊溝；內果皮木質化或骨質，甚堅硬。

此種產於峨眉山之清音閣，洪椿坪，扁担岩，蛇倒退，新開寺及遇仙寺等處。三月開花，七月果可成熟。

此種分佈於湖北四川兩省。

此種具密生之果實與江浙諸省之拘骨相近。但葉成橢圓形且邊緣無刺狀之鋸齒，易於區別。

圖解： 1.果枝(原大)； 2.花枝(原大)； 3.一小蕊花示其不發育之大蕊(放大十倍)； 4.小蕊花之側面(放大十倍)； 5.核之背面(放大五倍)； 6.核之腹面(放大五倍)。



164. *Ilex intermedia* Loesener

木 蘭 科 蘇 木 屬



ILEX SUBRUGOSA Loesener.

Aquifoliaceae

Ilex subrugosa Loesener in Sargent. Pl. Wilson. I (1913), 80

Shrub, branchlets straight, erect or patent, older portion subterete, younger portion striate-subangular, this year's growth 2-2.5 mm. thick, shortly pulverose-puberulus. Leaves remained on two year's growth, 13-15 mm. apart, stipule minute, obliterate; petiole 4-8 mm. long, very minutely and shortly pulverose-puberulus, acutely sulcate above, angular below; lamina coriaceous, upper surface in specimen shining or opaque, lower surface opaque, pilose along the midrib, epidermis often plicate rugose; lanceolate, suboblanceolate or oblong-lanceolate, rarely broad-elliptic or obovate, 4-10 cm but usually 7-9 cm. long, 2-3 cm. wide, base cuneate or acute; apex subcaudate or acuminate, acumen 8-15 mm. long, obtuse and with 2-3 teeth on each side; margin i.s. recurvate, coarsely serrate; midrib insculpt above, rather prominent below, lateral nerves 5-8, angle 45°-65°, rather straight or slightly curved toward the base, plane and obsolete or rarely conspicuous above, rather prominent or obsolete below, near margin loosely reticulate, reticulation conspicuous below. Inflorescence pseudo-fasciculate or short racemose in female, racemose in male, sessile, axillary, solitary, on second year's growth, deliberately minutely pulverose-puberulus; bud-scale dark brown, round or ovate, entire, slightly ciliate, 1-2 mm. long, 2 mm. wide; rachis 2-3 mm. long; pedicel 3-4 mm. long, prophylla 2, deltoid, inserted near base of pedicel, 1 mm. long and wide, larger in male flower; flower 4 merous; calyx disk-like in female, shallow-cup-shape in male, 2 mm. across, sepals round, entire, sometimes slightly ciliated, 1 mm. wide, $\frac{1}{2}$ mm. long; corolla rotate, 6 mm. across at anthesis in male, campanulate, 3 mm. across in female; petal oblong-ovate, 3 mm. long in male, 2 mm. long in female, $1\frac{1}{2}$ mm. wide, slightly united at base; stamens subequal the petals in length or slightly longer than petal in staminate flower, anther oblong-ovate, staminode in female flower $\frac{1}{3}$ times shorter than the pistil, sterile anther sagittate; pistil in female flower rather large, oblong-ovate, 2 mm. long, $1\frac{1}{2}$ mm. thick, stigma 4-lobed, coronate, sterile pistil of male flower globose, 0.76 mm. in diameter. Drupe globose or ellipsoid, stigma discoid, 4-lobed, coronate, i.s. red, i.s. greyish fuscous or brown and obsolete rugose. Pyrenes 4, 3-4 mm. long, 2-2.5 mm. dorsal width, trigonous, longitudinally paucistriolate and sulcate, lignescent.

MOUNT OMEI: Chia-dau-wan, alt. 1000 m., tree 10 metres high, fruits reddish, globose, *W. P. Fang*, No. 15186, November 8, 1940; Hung-chun-ping, alt. 1147 m. *H. O. Chow*, No. 7802, July 3, 1938; same locality, *H. O. Chow*, No. 8184, August 20, 1938; same locality, small tree 3 metres high, young fruits green, *C. L. Sun*, No. 511, June 15, 1939; same locality, in woods, small tree 4 metres high, flowers light green, *C. L. Sun*, Nos. 1606 & 1624, April 21, 1940; same locality, small tree 5 metres high, fruits light green, *T. O. Lee*, No. 2708, July 8, 1940; same locality, in thickets, small tree 5 metres high, flowers greenish, *C. L. Sun*, No. 1606, April 20, 1940; same locality, in woods, tree 5 metres high, fruits red, occasionally, *C. T. Lee*, No. 3738, October 7, 1940; same locality, small tree 4 metres high, fruits red, *W. P. Fang*, No. 15304, November 13, 1940; same locality, small tree, 6 metres high, fruit red, *C. W. Yao*, No. 3222, Pien-dan-ai, alt. 1400 m., small tree 2 metres high, flowers greenish-yellow, *W. P. Fang*, Nos. 18321 & 18334, April 8, 1942; Hou-tzu-po, alt. 1300 m., in woods, small tree 5 metres high; bark light brown, fruits green, *C. L. Sun*, No. 1996, May 17, 1940; Ta-ping, alt. 1400 m., at roadside, small tree 5 metres high, flowers greenish, *W. P. Fang*, No. 16063, April 2, 1941; same locality, alt. 1400 m., small tree 3 metres high, flowers green, *W. P. Fang*, No. 18316, April 8, 1942; same locality, small tree 5 metres high, fruits reddish, subglobose, *W. P. Fang*, No. 15231, November 8, 1940; Dien-chang-an, small tree 3 metres high, flowers yellowish, *W. P. Fang*, No. 16147, April 12, 1941; Hsi-hsin-so, alt. 1600 m., in thickets, small tree 5 metres high, flowers green, *C. L. Sun*, No. 3187, May 24, 1939; same locality, in thickets, shrub 2 metres high, leaves coriaceous, deep green, *C. L. Sun*, No. 1439, April 11, 1940; same locality, small tree 5-12 metres high, flowers green or yellowish-green, common, *W. P. Fang*, Nos. 14816 & 14819, May 21, 1940; same locality, in forests, small tree 3 metres high, flowers yellow, *W. P. Fang*, No. 18389, April 18, 1942; Chu-tien, alt. 1800 m., in thickets, small tree 3 metres high, young fruits green, *C. L. Sun*, No. 338, May 13 1939; same locality, in thickets, small tree 5 metres high, flowers light green, *C. L. Sun*, No. 1545, April 16, 1940; same locality, small tree 3 metres high, young fruits green, ovoid, *W. P. Fang*, No. 18962, June 6, 1942; Hua-yen-ting, alt. 1950 m., small tree 7 metres high, young fruits green, subglobose, *W. P. Fang*, No. 18669, May 6, 1942; Chiu-shih-chiu-tao-kual, alt. 1800 m., small tree 6 metres high, young fruits greenish, globose, *W. P. Fang*, No. 16828, June 4, 1941; same locality, in forests, small tree 5 metres high, young fruits green, rare, *W. P. Fang*, No. 18462, April 20, 1942; Chiu-lao-tung, alt. 1800 m., in forests, small tree 5 metres high, *W. P. Fang*, Nos. 14669 & 14698, May 19, 1940. Ta-chang-ssu, alt. 2300 m., *W. P. Fang*, No. 17193, July 5, 1946; northwest of Mount Omei, Hung-ya-hsien, Wa-wu shan, at roadside, small tree 3 metres high, young fruits green, *C. L. Sun*, No. 1181, September 3, 1939; same locality, small tree 3 metres high, *C. W. Yao*, Nos. 3637 & 4112, July 11-18, 1939; southwest of Mount Omei, Oplen-hsien, Shaping, in forests, small tree 8 metres high, young fruits green, *C. L. Sun*, No. 6332, July 13, 1939; ? same locality, *C. L. Sun*, No. 9002, August 2, 1939; without precise locality, in thicket, shrub 4 metres high, fruit globose, *W. P. Fang*, No. 3213, August 20, 1928; Without precise locality, *C. W. Yao*, Nos. 2845, 2850, 3631 & 43812 in 1938 and 1939. without precise locality, *S. N. Hsu*, No. 605.

SIKANG: Lu-shan-hsien, alt. 1100 m., small tree 5 metres high, bark light grey, fruits red, *K. L. Chu*, No. 4087, October 22, 1936.

Distribution: Szechuan and Sikang.

The pseudoracemose inflorescences and the lanceolate-elliptic leaves of this species is very characteristic. It is closely related to *Ilex Chieniana* Hu Shiu-ying. It differs from the latter species

in having pulverose-puberulous branchlets while the latter has glabrous branchlets.....Hu Shiu-ying.

Fig. 1, a leafy branch with mature fruits (natural size); 2, a leafy branch with male inflorescence (natural size); 3, a branch with female inflorescence (natural size); 4, a internode, showing the pubescence (enlarged 5 times); 5, a male flower (enlarged 10 times); 6, a female flower (enlarged 10 times).

圖版一百六十五

次糙冬青

冬青科

常綠灌木，枝平散或直立；小枝箸形，嫩枝有溝楞，本年之枝直徑二至二公厘半，具塵狀之短毛。葉互生於二年之枝上，節間長十三至十五公厘；托葉甚小，幾不可見；葉柄長四至八公厘，有塵狀短毛，腹面有縱溝，背面有楞角；葉片革質，腹面有光澤或暗淡，背面暗淡，沿中肋被短毛，葉之表皮於標本上粗糙多褶紋；披針形，倒披針形或長圓披針形，稀成闊橢圓形或倒卵形者，長四至十公分，最常見者長僅七至九公分，寬二至三公分；基部楔形或鈍尖，先端漸尖，尾長八至十五公厘；基部鈍形，邊緣每側具二至三鋸齒，且微反捲；中肋在表面凹入，背面顯著，側脈五至八枚，與中肋相交成四十五至六十五度之角，頗平直或近中肋處略彎曲，近邊緣處分枝網脈，小脈網在葉背面明顯。大蕊花或略似總狀之密繖花序，小蕊花成總狀花序，兩種花序皆無花梗，單生於葉腋，被稀疏之短絨毛；芽鱗褐色，圓形或卵形，全緣，略有睫毛，長一至二公厘，寬二公厘；花軸長二至三公厘，花梗長三至四公厘，近基部有長一公厘之三角形柄上苞二枚，花四數；大蕊花之花萼鐘形，小蕊花之花萼杯形，直徑二公厘，萼片圓形，全緣，稀具睫毛，長二分之一公厘，寬一公厘；小蕊花之花冠幅輪狀，開花時直徑六公厘，大蕊花之花冠鐘形，直徑三公厘；花瓣長橢圓卵形，小蕊花者長三公厘，大蕊花者長二公厘，寬一公厘半，基部略聯合；小蕊花之小蕊較花瓣略長或幾等於花瓣之長度，花藥長橢圓卵形，大蕊花之不孕小蕊較大蕊短三分之一，花藥箭形，大蕊花之大蕊頗大，長橢圓卵形，長二公厘，直徑一公厘半，柱頭四裂，花冠形；小蕊花之不孕大蕊圓形，直徑百分之七十五公厘。核果球形或橢圓卵形，紅色，標本之果鐵褐色，頗粗糙，柱頭盤形，四裂，冠形，核四粒，長三至四公厘，背面寬二至二公厘半，三角形，具縱溝紋，木質堅硬。

本種產於峨眉山之洪椿坪，扁担岩，猴子坡，地藏菴，息心所，初殿，華嚴頂，九十九倒拐，九老洞及大成寺等處。峨眉山西北之洪雅縣瓦屋及峨眉山西南峨邊之沙坪亦產之。

本種分佈於四川西康兩省。

本種之總狀花序與其披針狀橢圓形之葉片為特別，與錢氏冬青親緣最近，二者之區別為次糙冬青之小枝有塵狀短毛而錢氏冬青之小枝則極光滑。

圖解：1. 着葉及成熟果實之枝（原大）；2. 着葉及小蕊花序之枝（原大）；3. 着大蕊花序之枝（原大）；4. 枝之一段以示其毛（放大五倍）；5. 小蕊花（放大十倍）；6. 大蕊花（放大十倍）。



165. *Ilex subrugosa* Loesener



ILEX CHIENIANA Hu Shiu-ying.

Aquifoliaceae.

Ilex Chieniana Hu Shiu-ying, sp. nov.

Frutex, 4 m. altus; ramuli recti, sparsi lenticulis nigris, vetustiores subteretes cortice longitudinally striata, subangulati, l. s. brunneo-nigrescentes vel cinereo-fusci, biennes 3-4 mm. crassi, hornotini glabri, 2.5-3 cm. crassi, l. s. brunneescetes angulati, graciles. Folia usque alterum in annum in ramulis remanentia, interstitiis. 6-20 mm. longis dissita; stipulae minutae triangulares, callosae, persistentes sed postea oblitteratae; petiolatus, 7-12 mm. longus, glaberrimus, supra acute sulcatus, subtus teretus; lamina coriacea, saepius crassa vel rigida, supra nitidula, brunneo-olivacea vel ochracea, subtus pallentior opaca, oblonga vel elliptica vel ovato-oblonga, plerumque 6-10 cm. longa, 2-4 cm. lata, basi acuta vel cuneata, apice acuminata, acumine 4.5 vel 6-10 mm. longo, obtuso; margine l. s. plano vel ad basi anguste recurvato, denticulato-serrato, dentibus callosis et saepe nigrescentibus: costa media supra oppresso-insculpta, subtus prominula vel vix prominente, nervis lateralibus utrinque 8-10, supra planis, obsolete, subtus vix prominentibus vel obsolete, iuxta marginem laxo reticulatis, epidermide subtus saepius plicato-rugulosa. Inflorescentiae e ligno hornotino nascentes, masculae pseudo-paniculatae, femineae pseudoracemum brevem densum sessilem formantes, pulvereo-puberulae, singulae masculae plerumque semel dichotomae 3-flores, breviter vel brevissime pedunculatae, femineae 1-florae (ex fr.); perulis inflorescentem fulcrantibus, nudo oculo manifestis masculis, subscariosis, oblongo-ovalibus, rotundatis, margine tota alifuantulum ciliata, 3-5 mm. longis, 4 mm. latis, bracteis subscariosis, obovatis paulum obliquis, apice acutulo, dorso obsolete plicato-unicarinato, 4 mm. longo, 2.5 mm. lato; prophyllis pediculo medio insertus, deltoides; pediculus 1-2 mm. longus, in femineis (sub fructus) 5-6 mm. longus, prophyllis basi insertis. Flores 4-meri; calyx explanato-patellus vel subcupuliformis; 2 mm. diam. glaber, lobis tube subaequalis, deltoides, apice obtusus vel acutus, 1 mm. longus, 1.5 mm. latus. Stamina fl. sub anthesi petali, subaequilonga, anthera ellipsoidea; Pistillodium fl. masculorum subglobosum, apice 4-sulcatum, 0.75 mm. diam. Drupa globosa, stigmate prominente 4-lobo coronato, l. s. brunnea, hinc inde impressa macularum laevum, estriata, esulcata, 6 mm. diam, opaca et sub lente conspicuo tuberculato, 4-pyrena; pyrenis subtrigona, striato-sulcata, 3 mm. longa, 2.25 mm. dorso lata, lignea.

Evergreen shrub or small tree up to 4 m. high; branches straight, dark brown to black with few conspicuous lenticles; older portion with longitudinal ridges this years growth glabrous, 2-3 mm. thick. Leaves alternate, on this and last year's growth, 6-20 mm. apart; stipules minute, triangular, callose; petiole 7-12 mm. long, very glabrous, sulcate above, terete below; lamina thick coriaceous, often rigid, l. s. olive-brown or ochraceous, oblong-elliptic or ovate-oblong, 6-10 cm. long, 2-4 cm. wide; base acute or cuneate, apex short and abruptly acuminate, acumen obtuse; margin plain or narrowly recurvate near base, in specimen, denticulate, teeth with dark callose points; midrib impressed and insculptured above, quite prominent below, principal lateral nerves 8-10 on each side, obsolete above, slightly prominent below. Inflorescences borne on second year's growth, sessile, staminate pseudo-paniculate, pistillate pseudo-racemose; a single branch of staminate inflorescence usually 3-flowered; pistillate 1-flowered, bud scale persistent, brown, ovate oblong or rounded, margin entire, minutely ciliated, 3-5 mm. long, 4 mm. wide, bract of flower scaly, obovate, apex acute, 4 mm. long, 2.5 mm. wide; prophyllum inserted in the middle of the pedicel, deltoid; pedicel 1-2 mm. long, after fruiting in pistillate 5-6 mm. long with the prophyllum inserted near the base; flower 4-merous; calyx disk-like or cup-shaped, 2 mm. in diameter, glabrous, lobes deltoid, apex obtuse or acute, 1 mm. long; corolla rotate, petal oblong-elliptic, slightly united at base, 3 mm. long, 1.8 mm. wide; stamen and petal subequal in length. anthers ellipsoid, sterile pistil of staminate flower subglobose, apex 4-sulcate, 0.75 mm. in diameter; pistillate flower not seen. Drupe globose, stigma prominent, 4-lobed, coronate, in specimen brown, 6 mm. in diameter, opaque conspicuously tuberculated, with 4 pyrenes; pyrene subtrigonal, striated, sulcate, 3 mm. long, 2.25 mm. wide on the dorsal side, lignified.

MOUNT OMEI: Chiu-lao-tung, alt. 1800 m., in forests, small tree 5 metres high, flowers yellowish, rare, *W. P. Fang*, No. 14669, May 19, 1940; southwest of Mount Omei: Opien-hsien, Sha-ping, roadside, 4 m. high, *C. W. Yao*, No. 2845, August 26, 1938, (Two specimens of this number are seen. It seems that they are from a more vigorous growth. Their leaves are large, typically elliptic and caudate acuminate—*Hu Shiu-ying*); same locality, shrub 2.5 m. high, *C. W. Yao*, No. 2850, (type of fruit), August 28, 1938 (The leaves of the fruit bearing branchlets are smaller with apex more or less abruptly short acuminate—*Hu Shiu-ying*); same locality, small tree 6 m. high, *C. W. Yao*, No. 4381, July 31, 1939; same locality, *T. S. Chao*, No. 102, (type of male flowers), 713; same locality, in forests, small tree 5 metres high, young fruits green, *O. L. Sun*, No. 900, August 2, 1939; same locality, in forests, small tree 8 m. high, young fruits green, *O. L. Sun*, No. 633, July 13, 1939.

This new species is named in honour of Professor S. S. Chien, Acting Director of the Biological Laboratory, Science Society of China. It is closely related to *Ilex subrugosa* Loesener and differs from the latter in having glabrous branchlets. *Hu Shiu-ying*

Fig. 1. a fruiting branch (natural size); 2. a male flowering branch (natural size); 3. a young male flower (enlarged 10 times).

圖版一百六十六

錢氏冬青 新種

冬青科

常綠灌木或小喬木，高達四公尺，小枝粗壯直立，樹皮乾後褐色或黑褐色，具稀疏顯著之皮孔；較老之部有縱脊，本年枝光滑無毛，直徑二至三公厘，葉互生於一二年生之枝上，節間六至二十公厘；托葉三角形，甚小；葉柄長七至十二公厘，光滑無毛，腹面有縱溝，背面箬形；葉片厚革質，堅硬，標本呈褐青色或土色，長橢圓形或卵狀橢圓形，長六至十公分，寬二至四公分；基部銳尖或楔形；先端短而突尖，尖尾則成鈍形；邊緣平滑或於標本上略向後捲曲，有圓齒，齒端有黑色角質；中肋在腹面凹入，在背面顯著，側脈每邊八至十條，腹面不顯，背面可見。花序無柄生於第二年之枝上，小蕊花序近似圓錐狀，大蕊花則成假總狀花序，小蕊花序上之最小枝有花三朵；大蕊花則單一，開花時芽鱗宿存，褐色，卵狀長橢圓形或圓形，全緣，被小睫毛，長三至五公厘，寬四公厘，花苞鱗片狀，倒卵形，先端銳尖，長四公厘，寬二至五公厘，柄上苞宿存。在花梗中部呈三角形；花梗長一至二公厘，大蕊花梗長五至六公厘，梗上苞近於基部；花四數；萼盤狀或杯狀，直徑二公厘，光滑無毛，萼片三角形，先端鈍形或銳尖，長一公厘，花冠成輻輪狀，花瓣長橢圓形，基部連合，長三公厘，寬一公厘半，小蕊與花冠略等長，花藥橢圓形，不孕大蕊略呈球形，先端有四溝，長百分之七十五分厘，（大蕊花未見）。核果球形，宿存柱頭顯明，冠狀，具四裂，蠟葉標本之果褐色，直徑六公厘，暗淡無光澤，具多數乳頭狀凸起，內具核四粒。核略呈三角形，具溝紋，長三公厘，背寬二又四分之一公厘，外部木質堅硬。

本新種產於峨眉山之九老洞及峨邊縣之沙坪。五月開花，八九月果可成熟。

本新種與次種冬青親緣最近。二者之區別為前者小枝光滑，後者小枝多絨毛。本新種之命名乃紀念中國科學社生物研究所代理所長錢雨農先生。作者研究中國冬青科植物時。錢先生時賜寶貴之批評與指導，特此致謝。

圖解： 1. 果枝（原大）； 2. 小蕊花枝（原大）； 3. 尚未完全開放之小蕊花（放大十倍）。



166. *Ilex chieniana* S.Y. Hu



Plate 167.

ILEX FANGII (Rehder) Hu Shiu-ying.

Aquifoliaceae.

Ilex Fangii (Rehder) Hu Shiu-ying, spec. nov.*Ilex latifolia* Thunberg var. *Fangii* Rehder in Journ. Arn. Arb. XI (1930), 163.

Arbor vel frutex usque 10 m. alta, cortice longitudinaliter striata, i. s. fuscata; ramuli vestitiores, subtereti. biennes 4 mm. crassi, hornotini-glabri, 3 mm. crassi, fuscantes, angulati, nitidi. Folia per totum annum in ramulis remanentia, interstitiis 0.75-30 mm. longis dissita; stipulae minutae, callosae, saepius oblitteratae; petioli 10-20 longi, glaberrimi, supra sulcati, subtus plicato-rugosi; lamina coriacea, rigida, supra nitidula vel opaca, olivaceo-brunnescens, subtus pallidior, opaca, oblonga, elliptica vel raro oblanceolata, 10-15, interdum usque 17 cm. longa, 3-5.5 cm. lata, basi obtusa vel cuneata, apice acuminata, rare obtusa, acumine 10-20 mm. longa, margine i. s. manifeste recurvata, argute et remote denticulato-serrata adhuc autem spinosa, costa media supra insculpta, subtus expressa et crassa, nervis lateralibus utrinque 6-10 supra obsolete vel elevatis, subtus vix prominentibus vel obsolete, recta et ad basim curvata, iuxta marginem reticulata, epidermide subtus saepius plicato-rugulosa. Inflorescentiae e ligno altero orientes, pseudoracemum brevem densum sellilem formantes, puberulae et glabrecentes, rachis 6-20 mm. longa, singulae uniflorae vel fl. masculinis 2-3-florae; pedunculus in fl. masculinis 2 mm. longus, pedicellis 4-5 mm. longus, in fructibus 4-8 mm. longus, 2-prophyllis sub-basi insertae, deltoideae, fl. 4-meri; calyx planus vel patelliformis, 2.5-3 mm. diam., glaber, lobulus et fistula subaequilongis, rotundati, deltoidei, apice obtusi vel rotundati, $\frac{1}{2}$ mm. longi, 1 mm. lati; corollae rotatae, petala oblongo-obovata, 2-3 mm. longa, 1.5 mm. lata; stamina fl. masculin petalis breviora, antherae ovoideae; stamina fl. femin. petalis $\frac{1}{2}$ breviora, antheris sterilibus apice instruis, sagittatibus; ovarium ovoideum, stigma prominense, crassum, obsoletum 4-lobulis coronatum; gynoecium sterile fl. masc. subglobosum, minutum. Drupa glabosa, stigma discoideum applanatum prominens, 4-lobulis coronatum, i. s. brunnea vel subatra, hinc inde impressa, iuniores 4-sulcata, 5 mm. in diam., sub lente minutissime tuberculato, 4-pyrenes. Pyrenis subgloboso-trigonona, striato-sulcata, 2.5 mm. longa, 1.75-2 mm. lata, lignea.

Tree or shrub, up to 10 metres high, bark longitudinally striate, i. s., fuscous; old branches subterete, two years' twig 4 mm. in diameter; this year's growth glabrous, 3 mm. in diameter, angular, shiny fuscous. Leaves remain on this year's growth, 0.75-30 mm. apart; stipules minute, callose, often obliterate; petioles 10-20 mm. long, glabrous, sulcate above, plicate rugose underneath; lamina opaque, oblong, elliptic or rarely oblanceolate, 10-15 cm., sometimes up to 17 cm., long, 3-5.5 cm. wide, base obtuse or cuneate, apex acuminate, rarely obtuse, acumens 10-20 mm. long, margin, i. s. manifestly recurvate, remotely denticulate, serrate up to spiny denticulate, midrib insculpt above, expressed underneath, lateral veins 6-10 on each side, obsolete or elevated above, usually prominent or may be obsolete underneath, straight, slightly curved near base, reticulate toward margin. Inflorescence pseudo-racemose, oriented on older twigs, puberulent and becoming glabrous, rachis 6-20 mm. long, unflowered or in male 2-3 flowered; peduncles in male flowers 2 mm. long, pedicels 4-5 mm. long, in fruit 4-8 mm. long, prophylla 2, sub-base inserted, deltid; flower 4-merous; calyx applanate or patelliform, 2.5-3 mm. across, glabrous, lobes and tube subequal in length, rounded, deltid, apex obtuse or rounded, $\frac{1}{2}$ mm. long, 1 mm. wide; corolla rotate, petals oblong-obovate, 2-3 mm. long, 1.5 mm. wide; stamens of male flower shorter than petals, anthers ovoid, staminodes of female flowers $\frac{1}{2}$ the petal in length, sterile-anther sagittate; ovary ovoid, stigma prominent, thick, obsolete 4-lobed, coronate; sterile pistil of male flowers subglobose, minute. Drupe globose, stigma discoid applanate, prominent, 4-lobed coronate, i. s. brown or nearly black. Impressed, 4-sulcate, 5 mm. in diameter, very minutely tuberculato, 4-pyrened; pyrenes subgloboso-trigonous, striate sulcate, 2.5 mm. long, 1.75-2 mm. wide, lignified.

MOUNT OMEI: Kuan-hsin-po, alt. 1200 m., C. L. Chow, No. 6546, August 16, 1942; Hsi-hsin-so, alt. 1400 m., small tree 7 metres high, flowers green, C. L. Sun, No. 318, May 24, 1939; same locality, tree 12 metres high, flowers yellowish-green, W. P. Fang, No. 14816, May 21, 1940; Chang-lao-ping, alt. 1600 m., in forests, shrub 5 metres high, leaves leathery, fruits red, berry-like, W. P. Fang,

Nos. 3098 & 3144, August 17-18, 1928; same locality, T.H. Tu, Nos. 94 & 738 (type), (two specimens of this number were seen. They possess long narrow leaves with spinose teeth); same locality, S.N. Hu, No. 566; same locality, tree 10 metres high, C.W. Yao, No. 4876, August 28, 1939 (two specimens seen); same locality, small tree 7 metres high, young fruits green, T.C. Lee, No. 2957, July 23, 1940; same locality, small tree 7 metres high, flowers yellowish, occasionally, W.P. Fang, No. 16623, May 23, 1941; same locality, small tree 7 metres high, fruits red, common, T.C. Lee, No. 3983, October 19, 1941; Chiu-shih-chiu-tao-kwai, alt. 1600 m., in woods, tree 10 metres high, flowers yellowish-green, C.L. Sun, No. 2164, May 25, 1940; Chu-tien, alt. 1850 m., H.C. Chow, No. 7728, July 1, 1939; same locality, small tree 7 metres high, young fruits green, C.L. Sun, No. 2214, May 27, 1940; Hua-yen-ting, alt. 1950 m., small tree 5 metres high, flowers in buds, W.P. Fang, No. 18679, May 6, 1942; Lien-hua-shih, alt. 1991 m., small tree 7 metres high, flowers yellowish-green, W.P. Fang, No. 18854, May 26, 1942; northwest of Mount Omei, Hung-ya-hsien, Wa-wu-shan, small tree 4 metres high, fruits red, compressed globose, C.W. Yao, No. 3678, June 18, 1939 (Two specimens seen.).

With Dr. Chihfu W.P. Fang's nos. 3098 and 3144 collected from Mount Omei the two specimens that Professor Rehder used for the description of *Ilex latifolia* var. *Fangii*, and the additional materials collected by several botanists from the same region before me, I think this variety should be raised to a distinct species. It has a mixture of characters peculiar to several of the larger-leaved species in the subsection *Insignis*. Its pseudoracemose inflorescence resembles that of *Ilex latifolia*. Its rigid and sometimes spinose leaves resemble those of *Ilex insignis*. Its glabrous branchlets resemble those of *Ilex Chienii*. It differs from *I. latifolia* in having smaller and narrower leaves. It differs from *I. insignis* in having separated pyrenes; it differs from *I. Chienii* in having larger leaves with spinose teeth.....Hu Shiu-ying

Fig. 1, a fruiting branch (natural size); 2, a staminate flowering branch (natural size); 3, a pistillate flowering branch (natural size); 4, a pistillate flower (enlarged 10 times); 5, a staminate flower (enlarged 10 times); 6, a staminate inflorescence (enlarged 2 times); 7, a pyrene showing the striation (enlarged 5 times).

圖版一百六十七

方氏冬青 新種

冬青科

喬木，高可達十公尺（依姚君之報告），樹皮現縱裂之皺紋，黑褐色；較老之枝箬形，二 之枝直徑四公厘，本 之枝直徑三公厘，光滑無毛，黑褐色且具光澤，略現楞角。葉生本年枝上，相距四分之三至卅公厘；托葉甚小，角質，多不易辨別；葉柄長十至二十公厘，光滑無毛，上面現溝槽，下面則現褶狀，粗糙；葉片暗淡，長橢圓形，橢圓形或倒披針形，長十至十五公分，稀至十七公分，寬三至五公分半，基部鈍形或楔形，先端漸尖，鮮成鈍形者，漸尖部份長十至二十公厘，邊緣向後捲褶，具稀疏牙齒狀之鋸齒，鋸齒有呈刺狀者，中肋表面凹入，背面顯著，側脈每邊六至十條，表面不顯著，背面多可見，亦有模糊不清者，在基部略呈弧形，近邊緣處呈網狀。花集生於近總狀之花序上，花枝初被短毛成長時漸變光滑，花軸長六至二十公厘，枝上之花單生或小蕊花則二三朵成一枝，小蕊花之梗長二公厘，單花之梗長四至五公厘，結果之後梗長四至八公厘；梗上小苞兩片，三角形，着生於梗之近基部；花四數；花萼扁平或盤狀，直徑二公厘半至三公厘，光滑無毛，裂片與萼筒幾等長，三角形，先端鈍形或圓形，長半公厘，寬一公厘；小蕊花之小蕊較花瓣略短，花藥卵形，大蕊花之不孕小蕊長僅花瓣之半，花藥箭形，子房卵圓形，柱頭顯著，肥厚，成不甚顯著之四裂冠形，小蕊花之不孕大蕊球形甚小。果球形，宿存之柱頭盤狀扁平，成顯著之四裂，冠形；臘葉標本之果黑褐色，兩端扁平，具四溝槽，直徑五公厘，表面具小瘤，含核四粒；核三角形，長二公厘半，寬一又四分之三公厘至二公厘，堅硬如骨質，具脊紋。

此種產於峨眉山之觀心坡，長老坪，九十九倒拐，初殿，華嚴頂，及洪雅縣瓦屋山。五月開花，八月果可成熟。

圖版：1 枝（原大）；2 小蕊花枝（原大）；3 大蕊花枝（原大）；4 大蕊花（放大十倍）；5 小蕊花（放大十倍）；6 小蕊花序（放大二倍）；7 核及其花紋（放大五倍）。



167. *Ilex Fangii* (Rehder) S.Y. Hu



Plate 168.

ILEX CORALLINA Franchet.

Aquifoliaceae.

Ilex corallina Franchet in Bull. Soc. Bot. France, XXXIII (1886), 432; Pl. Delavay. II (1889), 127—Loesener in Nov. Act. Leop.-Carol. LXXVIII (1901), 327; in Sargent, Pl. Wilson. I (1913), 80.—Rehder in Journ. Arn. Arb. XIV (1893), 241.—Handel-Mazzetti, Symb. Sinicae, VII, Lieferung 3 (1933), 657.

Ilex Dunniana Léveillé in Fedde Rep. Spec. Nov. IX (1911), 458.

Shrub or small tree 2-8 metres high, glabrous; branches ascending, straight, slender, old portion terete, bark densely covered with longitudinal cracks or lenticels; young portions, in specimen, obscure purple or pale violet-brown to pale fuscous, obsolete longitudinally subplicate angular; this year's growth 1-2 mm. thick. Leaves 7-20 mm. part; stipules minute, soon become obliterate; petiole short, 4-8 mm. rarely up to 1 cm. long, sulcate above; lamina ovate rarely oval to ovate-elliptic or ovate-lanceolate, 4.5-11 cm. long, 1.8-4 cm. wide, tender or adult quite coriaceous, very glabrous; base rounded to obtuse; apex acuminate; acumen 14 mm. long; microplicate; margin, in specimen, narrowly recurved, remotely serrulate to dense undulate-subdenticulate-serrate, tooth with nigrescent apiculate; midrib slightly insculptured above, expressed and prominent below, lateral nerves 7-10 on each side, angle 40°-55°, plane, obsolete above, prominent underneath, reticulate near margin. Inflorescence axillary, fasciculate, fascicle with 5-10 flowers; pedicel short, 1 mm. long, 0.75 mm. thick, glabrous; bracts triangular, obtuse, ciliate, 0.75 mm. long, 1 mm. wide, prophylla inserted at the base of the pedicel, ciliate, 0.5 mm. long and wide. Flowers 4-merous, male 8 mm. across at anthesis, female 3 mm. across; calyx cup-shaped, 2 mm. in diameter, lobes triangular-acute usually rounded, ciliate, 0.75 mm. long, 1 mm. basal width; corolla rotate in male, campanulate in female, petals elliptic, 2-2.5 mm. long, shorter in female flower, 1.5-1.7 mm. wide; stamens of male $\frac{1}{4}$ times longer than petals, filaments terete, anther ellipsoid; stamnode of female flower very short, $\frac{1}{2}$ times shorter than petals, filaments 0.75 mm. long, anthers sagittate; ovary oval-oblong, 2-2 $\frac{1}{2}$ mm. long, 2 mm. thick, stigma sessile, discoid, sterile pistil of male flower subsemiglobose; $\frac{1}{2}$ mm. in diameter. Drupe small, globose, stigma flat, discoid, obsolete lobed, coronate, in specimen, nigrescent, 3-4 mm. in diameter, in vivo, coralline-red; pyrenes 4, subtrigonous, 2.5 mm. long, 1.5 mm. dorsal width; dorsal 3-striate-sulcate, lateral 2 striate, reticulate.

MOUNT OMEI: Lung-men-tung, alt. 846 m., in forests, small tree 8 metres high, *W. P. Fang*, No. 13870, February 29, 1940; same locality, small tree 7 metres high, fruits red, *T. C. Lee*, No. 4582, October 1940; same locality, small tree 5 metres high, fruits globose, red, *W. P. Fang*, No. 15615, December 2, 1940; same locality, small tree 5 metres high, staminate flowers greenish-yellow, *W. P. Fang*, No. 18137, March 1, 1942; same locality, shrub 3 metres high, flowers yellowish, *C. L. Chow*, No. 5568, March 19, 1942; Lei-yin-ssu, alt. 800 m., shrub 4 metres high, flowers yellow, *C. L. Chow*, No. 5601, March 24, 1942; Ta-o-ssu, alt. 1103 m., small tree 5 metres high, flowers greenish, *W. P. Fang*, No. 15883, March 11, 1941; Shih-sun-ku, shrub 2 metres high, flowers greenish, *W. P. Fang*, No. 18188, March 16, 1942; same locality, *C. L. Chow*, No. 6368, July 8, 1942; Ching-yin-ko, alt. 950 m., in thickets, shrub 4 metres high, occasionally, *W. P. Fang*, No. 12579, July 27, 1938; Hsi-lung-kiang, alt. 920 m., in thickets, shrub 3 metres high, flowers green or greenish-yellow, rare, *T. C. Lee*, No. 4504, April 2, 1940; same locality, alt. 950 m., shrub 4 metres high, fruits green, *C. L. Sun*, No. 2058, May 18, 1940; Fang-fang-dien, *C. L. Chow*, No. 7077, October 15, 1942; Niu-hsin-ssu, alt. 9600 m., small tree 8 metres high, fruits green, *C. L. Sun*, No. 2040, May 18, 1940; same locality, on slopes, shrub 3 metres high, fruits green, rare, *T. C. Lee*, No. 3022, July 28, 1940; Pai-lung-ssu, *C. W. Yao*, No. 5096, without date; Hung-chun-ping, alt. 1147 m., shrub 2 metres high, fruits red, globose, *W. P. Fang*, No. 15004, October 7, 1940; same locality, small tree 4 metres high, fruits red, *W. P. Fang*, Nos. 15278 & 15363, November 15, 1940; same locality, November 18, 1940; same locality, shrub 5 metres high, *W. P. Fang*, No. 17613, August 31, 1941; Pao-chang-feng, alt. 1300 m., shrub 2 metres high, flowers just over, *W. P. Fang*, No. 15944, March 27, 1941; same locality, shrub 2 metres high, *W. P. Fang*, No. 17414, July 28, 1941; Hui-fu-ssu, alt. 1300 m., small tree 3 metres high, fruits red, occasionally, *T. C. Lee*, No. 4558, October 24, 1940; Hsi-tao-tui, alt. 1300

m., shrub 3 metres high, fruits red, *T. C. Lee*, No. 4557, October 24, 1940; Hou-tzu-po, alt. 1300 m., small tree 3 metres high, young fruits green, *T. C. Lee*, No. 2802, July 12, 1940; Taping, alt. 1940 m., shrub 2 metres high, *C. W. Yao*, No. 3257, October 1938; Kuan-hsin-po, alt. 1200 m., small tree 5 metres high, flowers greenish, *W. P. Fang*, No. 15824, March 5, 1941; same locality, shrub 2 metres high, fruits red, *C. L. Chow*, No. 4866, October 1942; Chin-lao-tung, alt. 1800 m., shrub 5 metres high, young fruits green, ovoid, *W. P. Fang*, No. 16939, June 13, 1941; same locality, shrub 5 metres high, fruits red, *C. L. Chow*, No. 5457, November 23, 1941; Hua-yen-ting, alt. 1950 m., shrub 3 metres high, fruits red, globose, *W. P. Fang*, No. 15745, December 20, 1940; same locality, shrub 8 metres high, flowers greenish-yellow, *W. P. Fang*, No. 18249, April 1, 1942; without precise locality, *T. H. Tu*, Nos. 823, 833, 895, 967 & 985, in 1935; without precise locality, *C. W. Yao*, No. 5059, in 1939; without precise locality, *T. C. Lee*, No. 4634, October 28, 1940.

SZECHUAN: Kuan-hsien, Tsing-cheng-shan, small tree 3 metres high, leaves coriaceous, flowers green, *W. P. Fang*, No. 12170, April 16, 1938; same locality, *W. P. Fang*, No. 12917, September 20, 1938; without precise locality, *K. L. Chu*, Nos. 870 & 1897, in 1935.

SIKANG: Lu-shan-hsien, alt. 1150 m., among thickets, small tree 8 metres high, leaves dark green above and pale green below, fruits red, *K. L. Chu*, No. 4018, October 17, 1935.

Distribution: Hupsh, Szechuan, Sikang, Kweichow, Yunnan,

The tender coriaceous leaf and the small, short-pedunculated fruit in close fascicles distinguish this species from all other West China *Ilex*..... Hu Shu-ying

Fig. 2, a fruiting branch (natural size); 2, a male flowering branch (natural size); 3, a female flowering branch (natural size); 4, a male flower (enlarged 10 times). 5, a female flower (enlarged 10 times); 6, fruit with prophylla (enlarged 3 times).

圖版一百六十八

紅果冬青

冬青科

灌木或小喬木，高二至六公尺，光滑無毛；枝上升，直而纖細，較老之部箸形，樹皮滿被縱裂或皮孔；蠟葉標本之幼枝暗紫或淡紫褐色以至鉄黑色，具縱楞角，本年之枝直徑一至二公厘。葉互生，相距七至二十公厘；托葉極小或模糊；葉柄頗短，長四至八公厘，鮮達一公分者，上面有溝；葉片紙質以至薄革質，短橢圓形或卵狀橢圓形或卵狀披針形，長四公分半至十一公分，寬一分至四公分，極光滑；基部圓形或鈍形；先端漸尖，尖長十四公厘，末端有微凸，蠟葉標本之邊緣微向背面反捲，具稀疏之小鋸齒以至於波狀似圓齒形之齒鋸，齒端有黑色之角鋒；中肋上面略凹入，下面顯然且突起，側脈每邊七至十條，與中肋相遇所成之角四十至五十五度，平直，在葉表面不顯，在背面易見，近邊緣處則接合成網狀。叢生之密微花序腋生，每叢有花五至十朵；花梗甚短，長一公厘，直徑四分之三公厘，光滑無毛；苞三角形，先端頗鈍，邊緣有睫毛，長四分之三公厘，寬一公厘，苞着生於梗之基部，具睫毛，長寬各半公厘。花四數，小蕊花於盛開時直徑六公厘，大蕊花則僅三公厘；萼杯形，直徑三公厘，萼片闊三角形，先端尖銳，通常圓形，具睫毛，長四分之三公厘，寬一公厘，小蕊花之花冠幅輪形，大蕊花之花冠鐘形，花瓣橢圓形，長三至二公厘半，大蕊花之瓣較短，寬一公厘半至一公厘七，小蕊花之小蕊較花瓣長四分之一，花絲柱形，花藥橢圓形；大蕊花之不孕小蕊甚短，僅及花瓣長度之半，花藥箭形；子房卵狀長橢圓形，長二至二公厘半，直徑二公厘，柱頭盤狀冠形，小蕊花之不孕子房近於球形，直徑半公厘。核果球形，甚小，宿存之柱頭扁平，微裂成冠形，蠟葉標本之果黑色，長三至四公厘，成熟新鮮之果鮮紅色；具核四粒，略呈三角形，長二公厘半，背寬一公厘半；背面有溝紋三條，側面具脊二條，脊紋呈網狀。

本種產於峨眉山之龍門洞，雷音寺，大峨寺，石筍溝，清音閣，牛心寺，白龍寺，洪椿坪，寶掌峯，會佛寺，蛇倒退，猴子坡，大坪，觀心坡，九老洞及華嚴頂等處。三月開花，十月果可成熟。

本種分佈於湖北，四川，西康，貴州，雲南等省。

本種之薄革質葉與其叢生之短梗小紅果使其與其他華西之冬青極易區別。

圖解：1. 果枝（原大）； 2. 小蕊花枝（原大）； 3. 大蕊花枝（原大）； 4. 小蕊花（放大十倍）； 5. 大蕊花（放大十倍）； 6. 果與其果梗基部之苞（放大三倍）。



168. *Ilex corallina* Franchet



2 cm



Plate 169.

ILEX SZECHWANENSIS Loesener.

Aquifoliaceae.

Ilex szechwanensis Loesener in Nov. Act. Leop.-Carol. LXXVIII (1901), 347; in Sargent, Pl. Wilson. I (1911), 80.

Shrub, up to 8 metres high, bark greenish-grey, covered with longitudinal cracks; branches erect, older portion more or less angular, young growth manifestedly longitudinally striate-sulcate and angular; this year's growth 1.5-2 mm. in diameter, dense and manifested puberulent, such pubescence persistent even on third year's growth. Leaves remaining on third year's growth, 4-15 mm. apart; stipules long-subulate, brown, 1 mm. long, persistent; petioles 3-7 mm. long, grooved above, very densely puberulent-puberulous; lamina oval, ovate-oblong up to sub lanceolate, 2.7-6.5, rarely up to 8, cm. long, 1.3-3 cm. wide, thick coriaceous up to subchartaceous, densely punctate beneath, villose, especially along the veins, base cuneate to obtuse, apex shortly and abruptly acuminate, apiculate, margin slightly recurvate, narrow- and dense-serrate, midrib plane above, deeply expressed beneath, lateral nerves 5-7 along each side, angle 40°-50°, usually inconspicuous on both surfaces. Inflorescence fasciculate or solitary, axillary or by the side at the base of new growth, glabrous or pilose, male 1-3 flowered, female usually unflowered, rarely 2-3 flowered in a sessile fascicle; bract acute, deltoid, brown, 0.5 mm. long, ciliate; prophylla scaly, brown; peduncle of 3-flowered male inflorescence 6-11 mm. long, hairy; pedicel of a single male flower 4-8 mm. long, of 1-3 flowered inflorescence 2.5 mm. long, of female flower 7-8 mm. long, thickened towards receptacle, 2 prophylla medium or submedium inserted; calyx disk-like, that of male flower weakly 2 mm. in diameter, female 3 mm. in diameter, 4-5 lobed, lobes broadly deltoid or rounded, acute, ciliate; corolla erect, white, petals 4-6, sometimes doubled in male flower, ovoid or orbicular, elliptic in female, 1-2 mm. long; stamens 4-6, shorter than petals, anthers oblong-ellipsoid; stamnode shorter than petal, slender, sterile anthers minute; ovary large, lageniform, stigma mammiform, 4-lobed, lobes 2 mm. long, 1.5 mm. wide; sterile pistil of male flower minute. Drupe glabrous, apple-shaped, stigma discoid or mammiform, projecting, 4-lobed, lobes 6 mm. long, 7-8 mm. broad at the middle, calyx-lobes slightly reflexed; pyrenes 4, trigonous, 6 mm. long, 5 mm. dorsal width, dorsally concave, smooth, with 3 slender striate, endocarp thin, leathery.

SOUTHWEST OF MOUNT OMEI: Opieh-hsien, Sha-ping, *C. W. Yao*, No. 4576, August 10, 1943; same locality, shrub 3 metres high, flowers white (the description of the female flower is based upon this specimen—*S. Y. Hu*), *C. W. Yao*, No. 4438, August 1, 1939; same locality, *T. S. Chao*, No. 595; without precise date; southnorth of Mount Omei, Hung-ya-hsien, Wa-wu-shan, *C. W. Yao*, No. 2266, July 15, 1938; same locality; *C. W. Yao*, No. 3900, June 30, 1938. (Both of these specimens are in male flowers).

SZECHUAN, Chungking, Chin-yun-shan, in bamboo thickets, low shrub up to 1.5 metres high, fruits globose, *S. Y. Hu*, No. 5001, August, 1943.

Distribution. Hupeh, Szechuan.

This species is closely related with *Ilex triflora* Blume, var. *viridis* (Champ) Loesener of South China from which it differs in having apple-shaped (compressed at both ends) fruits, mammiform and projecting stigma, 4-6-merous flowers and pubescent branches. The latter, *Ilex triflora* var. *viridis*, has globose fruits, 4-merous-flowers with applanate stigma, and glabrescent branches....*Hu Shiu-ying*

Fig. 1, a fruiting branch (natural size); 2, a flowering branch with male inflorescence (natural size); 3, a female flower with petals partially removed (enlarged 3 times); 4, a single male flowering branch (enlarged 3 times); 5, corolla of a male flower (enlarged 3 times).

圖版一百六十九

四川冬青

冬青科

灌木高達八公尺；枝直立，較老部份略現楞角，灰綠色，現縱裂，嫩枝具顯著之脊紋，本年之枝密被絨毛，此等絨毛有時宿存於三年之枝上，直徑一公厘半至二公厘。葉互生，宿存於三年之枝上，相距四至十五公厘；托葉銳尖，長一公厘；葉柄長三至七公厘，密被短絨毛，上面具槽；葉片卵狀長橢圓形以至披針形，長二又十分之七公分至六公分半，長鮮及八公分者，寬十三公厘至三公分，厚革質以至近於紙質，背面具透明之腺體及絨毛，葉脈被絨毛尤多；基部楔形以至鈍形；先端突尖，銳形且具角質之點；邊緣略向後反曲，具淺而且密之鋸齒；中肋上面扁平，下面顯著，側脈每邊五至七條，與中肋相交成四十至五十度之角，通常兩面皆不顯著。花單生或呈密微花序，生於新枝基部或生於葉腋，光滑或略被絨毛，小蕊花一至三花成一枝，大蕊花通常單生，鮮有二或三花成簇者；苞片銳尖，三角形，褐色，長二分之一公厘，具睫毛，梗上苞鱗形，褐色；三花成枝之總花梗長五至十一公厘，被絨毛，單生小蕊花之梗長四至八公厘，成枝小蕊花之梗長二至五公厘，大蕊花之梗長六至八公厘，近花托處薄粗大，梗之中部具二小苞片；萼盤狀，小蕊花之萼直徑二公厘，大蕊花之萼直徑三公厘，萼片四至五枚，闊三角形或圓形，具睫毛；花冠直立，白色，花瓣四至六瓣，在小蕊花則成複瓣者，花瓣卵形或略圓，大蕊花之花瓣橢圓形，長一至二公厘；小蕊四至六枚，其花瓣略短，花藥長橢圓形或橢圓形，大蕊花之不孕小蕊較花瓣短，花藥小；子房大形，燒瓶狀，柱頭顯著，乳頭狀，長二公厘，直徑一公厘半，小蕊花之不孕大蕊極小。果光滑無毛，略呈蘋果狀，兩端略扁，宿存之柱頭乳頭狀，凸出，先端盤形，具四裂片，果長六公厘，直徑七至八公厘，宿存之萼片反曲，核四粒，三角形，長六公厘，背寬五公厘，略凹入，平滑，具三細紋，內果皮較薄，革質。

此種產於峨眉山西部之洪雅縣及峨邊縣。六月開花，八月果可成熟。

此種分佈於湖北四川、省。

本種與華南之三花冬青親緣最近，其區別為四川冬青之枝具絨毛，其花具花瓣四至六枚，其果蘋果狀，柱頭凸出呈乳頭狀。華南之三花冬青之枝光滑無毛，其花僅四部，其果球形，柱頭盤狀扁平。

圖解： 1, 果枝 (原大)； 2, 小蕊花枝 (原大)； 3, 大蕊花，其花瓣之一部已撥開 (放大三倍)； 4, 小蕊花 (放大三倍)； 5, 小蕊花之花冠 (放大三倍)。



169. *Ilex szechuanensis* Loesener



Plate 170. 歐州
ILEX WILSONII Loesener.
 冬青科

Ilex Wilsonii Loesener in Nov. Act. Acad. Cies. Leop.-Carol. LXXVIII (1931), 237, in Sargent, Fl. Wilson. I (1911), 80.-Handel-Mazzetti, Symb. Sinicæ, VII, Lieferung 3 (1933), 657.

Small tree or shrub 10 metres high; bark cinerous, covered with manifestly gibbous lenticels or minute longitudinal cracks; old branches subterete, those of the current year longitudinally striate, angular, 1.5-2 mm. in diameter. Leaves remain on the current year growth, 4-18 mm. apart; stipules small, subulate, deltoid, 0.5 mm. long; petioles 5-10 mm. long, slightly impressed or sulcate above, with decurrent convined and incurved margins on both surfaces; lamina coriaceous, olive-brown above, pale-green below, oval-oblong or subobovate-oblong, rarely lanceolate, 3-8 cm. long, 1.5-3.2 cm. broad, base cuneate, broadly cuneate or rounded; apex abruptly acuminate to caudate, acumen 6-15 mm. long, apiculate; margin entire; midrib plane, rarely prominently elevated, or sometimes slightly impressed, lateral nerves 9-12 on each side, angle 40°-50°, obsolete to prominent and reticulate near the margin below. Staminate inflorescences trichotomous, axillary fascicles, containing 3-7 flowers, pistillate inflorescences unflowered, glabrous, from nearly the base of the current year branchlet; bracts broadly deltoid, acute, rugose, brown, slightly ciliate, 0.1 mm. long; prophylla inserted at the base of pedicel in staminate flowers and medium of pedicel in pistillate ones, subulate, deltoid; peduncles of multiflower-cluster 5-8 mm. long; pedicels of staminate flower 2-4 mm. long, those of pistillate flower 4-5 mm. long, and those of the mature fruits up to 8 mm. long; flowers 4-merous, calyx disk-like, 2 mm. in diameter, 4-lobed, lobes broadly deltoid to rounded, 0.5 mm. long, 1-1.5 mm. broad, puberulent-puberulous, sparingly ciliate; corolla white, 4-5 mm. in diameter, rotate, petals 4, usually 4.2 mm. long, about 1/8 from their base united, lobes oval-obovate; stamens of staminate flower equal or slightly shorter than petals, anthers ellipsoid-ovoid, filaments about twice the length of anthers, sterile platil subglobose-conical, 0.75 mm. in diameter; ovary with capitate stigma. Drupe globose, persistent stigma slightly 4-angular, coronate, 4-5 mm. in diameter, i. s. fuscous, more or less rugose, striate, 4-pyrened; pyrenes subtrigonous, 3-3.5 mm. long, 1.5 mm. dorsal broad, smooth except at dorsal side striate with 1 prominent medial ridge and 2 less prominent ridges along the dorsal angles.

SOUTHWEST OF MOUNT OMEI: Opien-hsien, *T. S. Chao*, No. 313, in 1939; northwest of Mount Omei, Yun-ching-hsien, Wa-wu-shan, by the side of a stream, tree 3 metres high, *O. W. Yao*, No. 2972, in 1938.

Distribution: Chekiang, Kiangsi, Hupeh, Hunan, Szechuan.

This species is widely distributed along the Yangtze-river valley but is the first time for discovering it at southwest and northwest of Mount Omei.....Hu Shiu-ying.

Fig. 1, a fruiting branch (natural size); 2, a flowering branch with staminate flowers (enlarged 3 times); 3, a mature fruit (enlarged 3 times).

圖版一百七十

威氏冬青

冬青科

灌木或小喬木，高十公尺；樹皮灰色，具清晰隆起之皮孔或細小縱溝；較老之枝箬形，本年之枝具縱槽楞，直徑一公厘半至二公厘，光滑無毛。葉生存於本年之枝上，相距四至十八公厘；托葉甚小，鑽形尖銳，三角形，長半公厘；葉柄長五至十公厘，上面微凹，呈溝槽，兩邊具葉片下延內曲之翼；葉片革質，臘葉標本葉之上面青褐色，下面較淡，卵狀長橢圓形或倒卵狀長橢圓形以至披針形，長三至八公分，寬十五至三十二公厘；基部鈍楔形或圓形，先端短鈍狀漸尖或尾狀漸尖，尖端長六至十五公厘，終點具角質小尖，中肋扁平，稀隆起者，有時也有微凹者，側脈每邊九至十二條，與中肋相交所成之角四十至五十度，上面模糊，下面模糊以至顯然，近邊緣呈網狀。密繖花序腋生，或着於新枝末端，光滑無毛，小蕊花常三至七花成一小枝，枝分三歧，大蕊花單一，苞片闊三角形，銳尖，粗糙，褐色，稀具睫毛，長十分之一公厘；柄上苞在小蕊花着生於花梗之基部，在大蕊花則着生於花梗之中間，鑽形，三角形，總花梗長五至八公厘，小蕊花之花梗長二至四公厘，大蕊花之花梗長四至五公厘，成熟之果梗長八公厘；花四數；萼盤狀，直徑二公厘，萼片四瓣，闊三角形以至圓形，長半公厘，寬一至一公厘半，具灰塵狀短毛與稀疏睫毛；花冠白色，盛開時直徑四公厘半，輻輪狀，花瓣四枚，長四又十分之二公厘，約八分之一相連，卵形以至倒卵形；小蕊花之小蕊與花瓣等長或略短，花藥卵狀橢圓形，花絲長約花藥之兩倍，不孕之大蕊圓錐狀球形，長百分之七十五公厘強；大蕊花柱頭成頭狀。核果球形，宿有之柱頭鈍形，四裂冠形，直徑四至五公厘，臘葉標本之果鐵色，頗粗糙，平滑，具核四粒，核略呈三角形，長三至三公厘半，背寬一公厘半，背面具一顯然之脊，沿兩背側具二不顯然之脊，其他部份平滑。

此種產於峨眉山之西南之峨邊縣及峨眉山西北之滎經縣。

此種分佈於浙江，江西，湘北，湖南及四川等省。

圖解：1. 着果之枝（原大）； 2. 小蕊花之枝（原大）； 3. 小蕊花（放大三倍）； 4. 果實（放大三倍）。



170. *Ilex Wilsonii* Loesener



ILEX MACROCARPA Oliver.

Aquifoliaceae.

Ilex macrocarpa Oliver in Hooker Icon. Pl. XVIII (1886), t. 1787. Loesener in Nov. Act. Acad. Caes. Leop.-Carol. LXXVIII (1901), 480. Rehder in Journ. Arn. Arb. XIV (1933), 242. Camber in Notes Roy. Bot. Gard. Edinburgh XVIII (1933), 84. Handel-Mazzetti, Symb. Sinicæ, VII, Lieferung 3 (1933), 689. Merrill in Journ. Arn. Arb. XIX (1938), 41.

Celastrus salicifolia Leveillé in Fedde Rep. Nov. Spec. XIII (1914), 263.

Disopyros Bodinieri Leveillé, Fl. Kouy-Tcheou (1914), 144.

Tree up to 17 metres tall; branchlets erect or ascending, older part subterete, bark i.s. obscure brown or cinereous, sparingly covered with minute lenticels, slightly longitudinally striate or smooth; young portion subangular, this year's growth shiny brown-fuscous with minute lenticels, 1-3 mm. thick, abbreviated branchlets in male very short, 3 mm. long, in female about 10 mm. long, very rugose, usually with excrecence. Leaves deciduous, on elongated branchlets 10-80 mm. long, or few fasciculated on a spur, stipules deltoid, 0.75 mm. long, deciduous; petioles 9-16 mm. long, slender, glabrous, i.s. profoundly canaled above, rugose below; lamina membranous, opaque above, glabrous, oval or ovate or broadly elliptic, 6-14 cm. long, 4-5.5 cm. wide; base subobtuse or acute, rarely rounded, decurrent; apex abruptly narrow acuminate, rarely acute or obtuse, acumen 6-8 cm. long; margin i.s. subplane, densely and obsolete subcrenulate-serrulate; midrib plane, prominent below; principal lateral nerves 8-10 on each side, angle 45°-70°, near margin curved toward apex, secondary nerves and veinlets densely reticulated. Inflorescence usually fasciculated on abbreviated branchlets in male, female solitary, axillary, on elongated or shortened branchlets; male unflowered or 2-5 flowers on very short peduncle, female unflowered; peduncle in multiflower cluster 8 mm. long, bract minute, obsolete, deltoid, obtuse, 0.25 mm. long, sometimes none; pedicel glabrous, in male 4-6 mm. long, in female 1-2 cm. long, 1 mm. thick, prophylla minute, deltoid, inserted submedian the pedicel in female and basal in male, often obsolete; flower 5-7-merous, fragrant, large, white; calyx patelliform, 2.5-4.5 mm. after fruiting 8 mm. in diameter, glabrous, lobes shorter than tube, broad triangular obtuse or round, ciliate, 1 mm. long and wide; corolla rotate, petals elliptic-oblong, 1/6 connate, in male 4-5 mm. long, or in female 6 mm. long, 2.2-3 mm. wide; stamens equal petals in length, or slightly longer; anthers ovoid, staminode slightly shorter than petals; ovary ovoid, apex narrowed, stigma thick, broad subovoid subcolumnar, plurisulcate, coronate, 4-5 mm. long, 3 mm. thick, 6-7 loculate; sterile pistil minute, depressed subsemiglobose, sulcate, 0.5 mm. long, 1 mm. thick. Drupe large, globose, stigma very prominent, obtuse, pyramidal-subcolumnar, striate, up to 2 mm. long, coronate, i.s. brownish, obsolete rugose, estriate, esulcate, 10 mm. in diameter; 6-7 pyrenes, pyrene laterally cineressed, 7 mm. long, lateral 4 mm. wide, dorsal 1-2 mm. wide, striate-sulcate, lignified.

MOUNT OMEI: Wan-kan, small tree 3 metres high, *C. L. Chow*, No. 5949 April 10, 1942; Pao-ning-ssu, small tree 5 metres high, pistillate flowers white, *W. P. Fang*, No. 14103, April 20, 1940; same locality, small tree 3 metres high, young fruits ovoid, purple, *W. P. Fang*, 16473, May 6, 1941; same locality, at side of a rice-field, small tree 7 metres high, fruits globose, *W. P. Fang*, No. 14852, August 30, 1940; Tzu-juag-miao, small tree 3 metres high, young fruits green, *W. P. Fang*, No. 17281, May 14, 1941; same locality, *W. P. Fang*, No. 17470, August 5, 1942; Pao-kuo-ssu, small tree 5 metres high, *T. C. Lee*, No. 3328, August 11, 1940; same locality, in forests, small tree 3 metres high, young fruits green, globose, *W. P. Fang*, Nos. 18824 & 18855, May to June, 1942; Hwang-wan, small tree 7 metres high, pistillate flowers whitish-green, *C. L. Chow*, Nos. 5882 & 5883, May 15, 1942; Fu-hu-ssu, small tree 3 metres high, fruits globose, *W. P. Fang*, No. 14484, June 7, 1940; same locality, *C. L. Chow*, No. 5897, April 8, 1942; same locality, *C. L. Chow*, No. 5907, April 23, 1942; Lei-yu-ssu, alt. 900 m., in thickets, small tree 3 metres high, *W. P. Fang*, No. 12570, June 21, 1936; Ta-o-ssu, alt. 1103 m., tree 10 metres high, *S. S. Chien*, No. 5475, May 4, 1936; near and above Ni-hsin-ssu, small tree 3 metres high, staminate flowers white, *C. L. Sun*, Nos. 1868 & 2067, May 16, 1940; same locality, small tree 5 metres high, flowers white, *C. L. Sun*, No. 1989, May 16, 1940; Hung-chun-ping, alt. 1147 m., *H. C. Chow*, Nos. 7826, 7811, 8247 & 9728, August 1938; same locality, small tree 8 metres high, flowers greenish-white, *W. P. Fang*, No. 16421, August 6, 1941; Hou-tzu-po, alt. 1200 m., on slopes, small tree 8 metres high, *T. C. Lee*, No. 3187, August 1, 1940; Ta-ping, alt. 1400 m.; small tree 3 metres high, flowers greenish white, *W. P. Fang*, No. 16863, May 20, 1941; Pao-chang-feng, alt. 1400 m., small tree 5 metres high, young fruits greenish, globose, *W. P. Fang*, No. 16975, June 23, 1941; San-tao-ho, alt. 1800 m., *W. P. Fang*, No. 17251, July 10, 1941; Lien-hua-shih, small tree 3 metres high, flowers greenish-white, *W. P. Fang*, No. 18757, May 18, 1942; southwest of Mount Omet, Opieh-sien, *S. N. Hsu*, No. 30, in 1931; without precise locality, *W. C. Cheng*, No. 6951, June 14, 1936; without precise locality, *H. C. Chow*, No. 9728, in 1938.

SZECHUAN: Chien-yang-hsien, *S. S. Chien*, No. 5242 & 5255, April 21, 1936; Chengtu, *S. S. Chien*, No. 5255, April 24, 1936; same locality, in thickets, small tree 3 metres high, pistillate flowers white, *W. P. Fang*, Nos. 12228, 12236 & 13385, April 7, 1939; Sha-ho-pu, *C. Y. Wang*, No. 7223, June 6, 1944; Tsing-yang-kou, *W. P. Fang*, No. 19286, May 20, 1944; Kuan-hsien, Tsing-cheng-shan, tree 14 metres high, *S. S. Chien*, Nos. 5597 & 5761, May to October 1936.

DISTRIBUTION: Anhwei, Hupeh, Szechuan, Hunan, Kwelchow, Yunnan, Kwangtung, Kwangsi; Indo-China.

This species is deciduous. Its large fruit, brown at maturity, is very peculiar. It is closely related to *Ilex Reversae* Hu Shiu-ying. It differs from the latter in having glabrous branchlets and leaves. A normal *Ilex macrocarpa* Oliver has a fruit-stalk subequalled the petiole of the leaf. The fruit-stalk of variety *longipedunculata* is twice as long as the petiole of the leaf. The fruit-stalk of variety *brevipedunculata* is half as long as the petiole..... Hu Shiu-ying.

Fig. 1, a fruiting branch (natural size); 2, a staminate flowering branch (natural size); 3, a pistillate flowering branch (natural size); 4, a pistillate flower (enlarged 5 times); 5, a staminate flower (enlarged 5 times).

Ilex macrocarpa Oliver var. *longipedunculata* Hu Shiu-ying, var. nov.

Folia glabra, pediculus fructus est duplo longior quam petiolum.

Leaves glabrous, peduncle of fruit about twice the length of petiole.

SZECHUAN: without precise locality K. L. Chu, No. 1918, Summer 1928.

CHEKIANG: Changhua-hsien, Y. L. Keng, No. 571, (Tree about 15 metres tall, bark greyish and smooth).

Fig. 6, a fruiting inflorescence (natural size).

Ilex macrocarpa Oliver var. *brevipedunculata* Hu Shiu-ying, var. nov.

Folia glabra, pediculus fructus est duplo brevior quam petiolum.

Leaves glabrous, peduncle of fruits about half the length of the petiole.

SZECHUAN: Mount Omei, S. N. Shu, No. 671, in 1936.

Fig. 7, a fruiting inflorescence (natural size).

圖版一百七十一

大果冬青

冬青科

落葉喬木，高達十七公尺，小枝直立或平散，較老之標本之枝現褐灰色，有稀疏皮孔，平滑或少有縱溝；嫩枝略現楞角，當年枝之標本褐色有光澤，無毛，直徑一至三公厘，有小皮孔，雄樹之短枝長三公厘，雌樹之短枝長十公厘，多楞痕且有疣狀突起。葉互生於長枝上，節間十至十六公厘，短枝之葉叢生；托葉三角形，長百分之七十五公厘，易脫葉；葉柄長九至十六公厘，纖細，光滑無毛，葉柄之標本腹面有縱溝，背面多皺褶；葉片膜質，暗淡無毛，卵狀短橢圓形或橢圓形，長六至十四公分，寬四至五公分半，基部鈍形或銳尖，亦有圓形者，順葉柄方向略向下延伸；先端漸尖，稀鈍尖或鈍形，尖尾長六至八公厘；邊緣平滑，具細密圓形小鋸齒；中肋表面扁平，在背面凸起，側脈每邊八至十條，與中肋相交成四十五至七十度之角，近邊緣向先端彎曲，小脈成細網狀。小蕊花之花序通常和葉密集於短枝上，大蕊花亦有單生於長枝之葉腋者；小蕊花單生或具二至五花集成聚繖花序，具短花梗，大蕊花單生，花序之梗長八公厘，苞片三角形，先端鈍形，長百分之二十公厘，間或缺如；花梗光滑無毛，小蕊花者長四至六公厘，大蕊花者長一至二公分，直徑一公厘；柄上苞三角形，着生於小蕊花之花梗下端或大蕊花之花梗中部，甚小，稀缺如；花五與七數，白色，具芳香；萼筒形，開花時直徑二公厘半至四公厘半，果實成熟時則萼之直徑六公厘，光滑無毛，萼片較萼筒為短，闊三角形，長一公厘，先端鈍形或圓形，邊緣有睫毛，花冠幅輪狀，花瓣橢圓形至長橢圓形，小蕊花之花瓣長四至五公厘，大蕊花之花瓣長六公厘，寬二又十分之三公厘至三公厘；小蕊花之花瓣等長或略長於花萼，花藥卵圓形，不孕小蕊較花瓣略短；子房卵圓形，先端頸窄，柱頭較粗大，略呈柱形，多溝，冠形，子房長四至五公厘，直徑三公厘，有六至七個子室；不孕大蕊形極小，扁圓形，有溝，長半公厘，直徑一公厘。核果甚大，球形，柱頭甚顯明，鈍形或柱形，先端略尖，有溝紋，長二公厘，標本之果褐色，粗糙，圓而無溝紋，直徑十公厘；核六七粒，窄扁，長七公厘；背寬二公厘，兩旁寬四公厘，有縱紋，木質堅硬。

本種產於峨眉山之萬坎，保寧寺，子龍廟，報國寺，黃灣，伏虎寺，大觀寺，洪海坪，猴子坡，大坪，寶掌峯，三遺河及蓮花石等處。峨眉山西南峨邊縣亦產之。

本種特點為大果與落葉，其形態與黎氏冬青最相似，惟後者之葉多毛而大果冬青之葉則光滑。

圖解： 1. 果枝（原大）； 2. 小蕊花枝（原大）； 3. 大蕊花枝（原大）； 4. 大蕊花（放大五倍）； 5. 小蕊花（放大五倍）。

長梗大果冬青 新變種

本變種之葉光滑無毛，成熟果實之梗較葉柄長兩倍。

圖解： 6. 果序（原大）。

短梗大果冬青 新變種

本變種之葉光滑無毛，成熟果實之果梗之長度僅及葉柄之長度之半。

圖解： 7. 果序（原大）。

通常大果冬青果梗與葉柄略等長，長梗大果冬青之果梗較葉柄長二倍，短梗大果冬青果梗之長則僅及葉柄長度二分之一，此三者之區別也。



171. *Ilex macrocarpa* Oliver.



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Plate 172.

ILEX REEVESAE Hu Shiu-ying,

Aquifoliaceae.

Ilex Reevesae Hu Shiu-ying in Journ. West China Bord. Research Soc. Ser. B. XV, (1945), 92-94, pl.

Deciduous tree up to 8 metres high, bark of fruiting plant smooth, olive-green with conspicuous white lenticels; twigs greyish-green, last year's growth slightly angular, 2-2.5 mm. in diameter, slightly enlarged at the nodes, pubescent, lenticels inconspicuous; this year's growth green, pubescent, 2 mm. in diameter; abbreviated branches very short in male plant, 1-2 cm. long in female plant. Bud-scales persistent at the base. Leaves alternate on elongated branches, 5-20 mm. apart, fasciculate on spurs; stipules minute, scaly, brown, aciculate; petioles 8-18 mm. long, pubescent, cylindrical, shallowly grooved above; lamina ovate or elliptic, 3-10 cm. long, 2-5.5 cm. wide, on young vigorously growing twigs below a wound up to 14 cm. long and 7.5 cm. wide, chartaceous, slightly pilose above, pubescent below, especially along the midrib and main veins, base rounded or obtuse, apex acute or shortly acuminate, acumen 4-10 mm. long, margin crenate, tooth with minute dark points, midrib plane above, elevated below, with 8-10 lateral veins on each side, reticulation of veinlets inconspicuous above, prominent below. Flowers white, blooming in middle of April, very fragrant; inflorescences solitary or fasciculate on abbreviated branches, in male plant a 3-flowered cyme, in female plant solitary; peduncles of cyme 1-3 mm. long, bracts minute, prophyllia 1-2, medium; pedicels of female flowers 6-8 mm. long, gradually enlarging toward the apex, prophyllia 2, sub-basal, minute, acute, 0.7 mm. long; both peduncles and pedicels pubescent, flowers 4-6-merous in male, 6-9-merous in female; calyx green, pubescent, cup-shaped, 2.5 mm. across in male, 4 mm. across in female, lobes 4-9, irregular in size, deltoid, obtuse, ciliated; corolla white, rotate, 7 mm. across in male and 10 mm. across in female, petals 4-6 in male, 7-9 in female, tube $\frac{1}{4}$ the length of the lobes, petals oval-oblong, 2.5-3 mm. long, 2 mm. wide; stamens 4-7, inserted on the throat of the corolla-tube and alternate with the petals, slightly shorter than the petals, filaments white, anthers greyish, oval-oblong, pollen grains discharged before anthesis; staminodes in female flowers 7-9, shorter than petals, both filaments and anthers pure white, anthers sagittate, ovary of female flower green, lageniform, hairy, 2.5-3 mm. in diameter, stigma large, subcolumnar, mammiform, discoid, coronate; sterile pistil of staminate flower minute, depressed globose, sulcate. Drupe large, globose, 12 mm. in diameter, persistent stigma very prominent; pyrenes 7-9, laterally compressed, 9 mm. long, 3.5 mm. wide laterally, 1-2 mm. wide dorsally, striate, sulcate, lignified.

SZECHUAN: Chengtu, outside of the North Gate, *W. P. Fang*, No. 12442 (type of fruit), July 1, 1938; Chengtu, Hwa-hsi-pa (華西壩), near the house of No. 48, in forests and along a hedge, small tree 5 metres high, flowers white, solitary, *S. Y. Hu*, No. 535B (type of pistillate flower); Chengtu, south of Hua-hsi-pa, Ching-chuan-tau (青春島), in thickets, small tree 5 metres high, bark smooth, olive-green, with conspicuous lenticels, flowers white, very fragrant, *S. Y. Hu*, No. 535A, (type of staminate flowers), April 23, 1945; Chengtu, outside of the West Gate, Ching-yang-kung (青羊宮), small tree with staminate flowers, *S. S. Chien*, No. 5926, April 21, 1937; same locality, small tree with very young fruits, *S. S. Chien*, No. 5826, April 21, 1937.

Distribution: Hupeh, Szechuan.

This species is closely related *Ilex macrocarpa* Oliver, from which it differs in having pubescent branchlets, petioles, peduncles, pedicels and calyx..... Hu Shiu-ying.

Fig. 1. a fruiting branch (natural size); 2, a staminate flowering branch (natural size); 3, a pistillate flowering branch (natural size); 4, a pistillate flower (enlarged 5 times); 5, a staminate inflorescence (enlarged 4 times); 6, a staminate flower (enlarged 10 times); 7, a fruit (enlarged times).

圖版一百七十二

LEX REEVES & HU SHI-YING

黎氏冬青

冬青科

落葉喬木，高達八公尺；結果之樹其皮光滑，綠色，具顯明之白色皮孔；枝灰綠色，兩年之枝略現楞角，直徑二至二公厘半，近節處較粗大且被短絨毛，皮孔不顯者，本年之枝綠色多毛，直徑二公厘，基部具宿存之冬芽鱗片；雄樹之短枝甚短，雌樹之短枝長一至二公分。葉在長枝上互生，相間五至二十公厘，在短枝上與花或果叢生；托葉甚小，鱗片形，褐色，尖銳；葉柄長八至十八公厘，被短毛，圓柱形，上面具淺槽；葉片卵形或橢圓形，長三至十公分，寬二至七公分半，於傷後所發之新枝上葉可長至十四公分，寬至七公分半，紙質，表面略被絨毛，背面被絨毛，中肋與較大之葉脈上，其毛更厚密；基部圓形或鈍形；先端銳尖或漸尖，漸尖之處長四至十公厘；邊緣具圓齒，齒尖具角質黑點；中肋上面扁平，下面凸起，每邊有側脈八至十條，脈網上面模糊，下面清晰。花白色，四月盛開，具濃香；花單生葉腋或和葉叢生短枝上，具絨毛，小蕊花三花成枝，為聚繖花序，大蕊花單一，小蕊花之總花梗長一至三公厘。苞片甚小，梗上小包兩片，着生於花梗之中部；大蕊花之梗長六至八公厘，近先端漸膨大，梗上苞二片，着生近基部，長十分之七公厘，銳尖；小蕊花四至六數，大蕊花六至九數；花萼淡色，被絨毛，小蕊花直徑二公厘半，大蕊花直徑四公厘，萼片四至九片，大小不一，三角形，先端鈍形，具絨毛；花冠白色，輻輪狀，直徑七至十公厘，大蕊花者較大，小蕊花具花瓣四至六片，大蕊花具花瓣七至九片，花筒較裂片短四分之三，花瓣卵狀長橢圓形，長二公厘半至三公厘，寬二公厘，小蕊四至七數，着生花冠筒喉部，且與花冠互生，較花瓣略短，花絲白色，花藥灰色，卵狀長橢圓形，成熟時花開之前；大蕊花之不孕小蕊七至九枚，較花冠短，全白色，花藥箭頭形；子房綠色多毛，燒瓶狀，直徑二至五分之一至三公厘，柱頭甚大，略呈柱狀，乳頭狀冠形；小蕊花之不孕小蕊球形，略扁，具縱槽。果球形，直徑十二公分，宿存之柱頭甚顯著；含核七至九粒，核兩側扁窄，長九公厘，寬三公厘半，背寬一至二公厘，側面具脊紋，木質堅硬。

本種產於成都近郊之青羊宮及華西壩，林中或田畔均極常見。四月開花，八月果可成熟。
本種與大果冬青親緣最近，與後者之分別在其小枝葉柄花萼以及花梗均被絨毛。

圖解：1. 果枝（原大）；2. 小蕊花枝（原大）；3. 大蕊花枝（原大）；4. 大蕊花（放大五倍）；5. 小蕊花序（放枝五倍）；6. 小蕊花（放大十倍）；7. 果實（放大二倍）

... depressed, 9 mm. long, 3.8 mm. wide laterally, 1-3 mm. wide dorsally, striate, sulcate, lignified.
SZECHUAN: Chengtu, outside of the North Gate, H. P. Wang, No. 12442 (type of fruit), July 1938; Chengtu, Hsueh-shi-pa (華西壩), near the house of No. 48, in forests and along a hedge, small tree 8 metres high, flowers white, solitary, S. Y. Hw., No. 2528 (type of pistillate flower); Chengtu, south of Hsueh-shi-pa, Ching-chuan-tan (清春潭), in thickets, small tree 8 metres high, bark smooth, flowers with conspicuous lobes, flowers white, solitary, S. Y. Hw., No. 2528 (type of staminate flowers), April 23, 1945; Chengtu, outside of the West Gate, Ching-yang-tung (青羊宮), small tree with staminate flowers, S. G. Galloway, No. 2826, April 21, 1937; same locality, small tree with very young fruits, S. G. Galloway, No. 2826, April 21, 1937.
This species is closely related to *lex reevesii* (Reeves) Hu & Shih, which it differs in having pubescent bracts, petioles, rachises, pedicels and twigs.
Fig. 1. a fruiting branch (natural size); 2. a staminate flowering branch (natural size); 3. a pistillate flowering branch (natural size); 4. a pistillate flower (enlarged 5 times); 5. a staminate flower (enlarged 5 times); 6. a staminate flower (enlarged 10 times); 7. a fruit (enlarged 2 times).



172. *Ilex Racevesae* S. Y. Hu



Plate 173. SOUTHWEST OF MOUNT OMEI

ILEX OPIENENSIS Hu Shiu-ying.

Aquifoliaceae.

Ilex opienensis Hu Shiu-ying, sp. nov.

Frutex vel arbor usque ad 10 m. alta (juncta Yao); cortice leucophaeo vel olivaceo-brunnescente, striato-sulcato et lenticellis albis prominentibus obtecto. Rami vinctiores elongati, suberecti; ramuli triennes usque ad 3 mm. crassi; hornotini glabri, olivacei vel fuscii, 2-2.5 mm. crassi; juniores valde rugosi et gibberosii, 3-15 mm. longi. Folia decidua, in ramulis elongatis intersitis 5-30 mm. longis dissita, in ramulis, parvis, floribus fasciculatis congesta; stipulae minutae, oblitteratae vel callosae; petiolus 10-17 mm. longus, glaber, supra sulcatus utrimque lamina angulatis in tota margine; subtus striolatus, angulatus; lamina ovata vel elliptica, 7-12 cm. longa, 3-6.5 cm. lata, membranacea, supra olivacea, glaberrima, subtus pallidior, in costa et nervis, interdum in facie, densissime puberula; basi rotunda vel obtusa et raro late-cuneata; apice subcaudato-acuminata, acumine 5-6, nonnumquam 12 mm. longa; margine plana, serrata et aliquando dupliciter serrata; costa media supra sulcata, in apice plana, subtus prominens; nervi laterales 8-10 in duabus partibus, angulo 40°-75° patentes, recti et ad apicem versus curvati, supra plani vel insculpti, subtus prominentes, in margine anastomasatici. Inflorescentiae in foliorum axillis solitariae sed fasciculatae cum foliis in ramulis parvis, glaberrimae, pediculus 3-6 mm. longus, prophyllis nulla; flores 6-8-meri; calyx patelliformis, 6-8 lobulis, 3.5 mm. in diam., rotundatus, ciliatus, 1.5 mm. longus et latus; corolla rotata, alba; cum 6 petalis, oblongis, 2 mm. longis, 1-1.25 mm. latis; dimidia radix connata; stamina fl. masculae petalis paulo breviora vel subaequalia; antheris ovoidea, 0.75 mm. longa; stamina fl. feminae petalis $\frac{1}{2}$ breviora, antheris cordiformis; ovarium ovoideum, 6-loculis, locus 1-ovulatus; effoetum pistillum fl. masculae depresso-globosum, 1 mm. longum, 1.25 mm. latum. Drupa depresso globosa; stigma prominens, sessile et nonnumquam stipulatum, corona, 3-4 mm. longum, 4 mm. crassum, 6-sulcatum, 6-pyrenes. Pyrenis 3 mm. longus, 1 mm. dorso-latus, oblongo-trigonus, dorso et lateralibus obsolete striolatus, lignescens.

Shrub or tree up to 10 metres high (according to Yao's report); bark, i. s., grey or olive-brown, striate, sulcate, with prominent white lenticels, older branches elongate, subterete, three-year old twigs 3 mm. in diameter, this year's growth glabrous, 2-2.5 mm. in diameter, olive or fuscous, abbreviated branches very rugose, 6-18 mm. long. Leaves deciduous, 5-30 mm. apart on elongated branches, fasciculate with flowers on abbreviated branches; stipules minute, obliterate or callous; petioles 10-17 mm. long, glabrous, i. s. sulcate above, often with narrowly decurrent margin of the blade, striate below; lamina ovate or elliptic, 7-12 cm. long, 3-6.5 mm. wide, membranaceous, i. s. olive-green above, very glabrous, paler below, puberulent along the midrib, nerves and sometimes all over the lower surface; base rounded, obtuse or rarely broadly cuneate, apex subcaudate, acuminate, acumine 5-8, sometimes up to 12 mm. long; margin plane, serrate or sometimes doubly serrate; midrib sulcate above, near apex plane, prominent below, lateral nerves 8-10 on each side, angle 45°-75°, straight, toward apex curved, plane or insculpted above, prominent below, anastomotic near margin. Inflorescence solitary on elongated new branches or on all sides at its base, fasciculated with leaves on abbreviated branches, very glabrous, peduncle 3-6 mm. long, prophylla wanting, flower 6-8-merous, calyx patelliform, 6-8-lobed, lobes 3-5 mm. in diameter, lobes rounded, ciliate, 1.5 mm. long and wide; corolla rotate, white, with 6 petals, petals oblong, 2 mm. long, 1-1.25 mm. wide, half of the total length connate; stamens of male flower slightly shorter than or subequal petal in length, anthers ovoid, 0.75 mm. long, staminode of female flower 1 mm. long, sterile anther ovoid, 6-loculed, locules 1-ovuled, sterile pistil of male flower globose, slightly depressed, stigma prominent, sessile or sometimes stipitate, coronate, 3-4 mm. long, 4 mm. thick, 6-sulcate, 6-pyrened. Pyrenes 3 mm. long, 1 mm. dorsal width, oblong, trigonous, obsolete striolate dorsally and laterally, lignified.

SOUTHWEST OF MOUNT OMEI: Opien-hsien, alt. 2000-2400 m., in forests, shrub with young fruits, *W. C. Cheng*, No. 6129, July 4, 1936; Opien-hsien, Shaping, roadside, small tree 8 metres high, fruits red, *C. W. Yao*, No. 2739, August 15, 1938; same locality, small tree 8 metres high, fruits red, *C. W. Yao*, No. 2803, August 20, 1938; same locality, small tree 10 metres high, *C. W. Yao*, No. 4320 (type of female flower), July 29, 1939; same locality, tree 13 metres high, *C. W. Yao*, No. 4327, in 1939; same locality, *T. S. Chao*, Nos. 148 (type of male flower), 615, 734, 734A, 734B & 734C (these last three specimens have no numbers written on the sheets originally.); northwest of Mount Omei, Hung-ya-hsien, Wa-wu-shan, tree 8 metres high, fruits purplish-red, *C. W. Yao*, No. 2306, July 16, 1928; same locality, tree 8 metres high, *C. W. Yao*, No. 3766, June 22, 1939; same locality, tree 4 metres high, *C. W. Yao*, No. 3842, in 1939.

SIKANG: Tien-chuan-hsien, alt. 2450 m., in shaded woods, small tree 6 metres high, bark green, leaves dark green above, flowers greenish-white, *K. L. Chu*, No. 2714, June 8, 1936.

This new species is closely related to *Ilex fragilis* Hooker f., but from that species it differs in having leaves which are pubescent at lower surface while *Ilex fragilis* has glabrous leaves.

Hu, Shiu-ying.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a staminate flower (enlarged 10 times); 4, back view of a flower (enlarged 10 times); 5, a dissection of flower (enlarged 10 times); 6, a portion of leaf to show the pubescence (enlarged 5 times).

圖版一百七十三

冬青邊我 新種

冬青科

落葉灌木或喬木，高達十公尺（據姚君之記載）；樹皮灰色或青褐色，具楞溝，且有白色顯著之皮孔；較老之長枝箬形，三年之枝直徑三公厘，本年之枝光滑無毛，直徑二至二公厘半，青色或灰褐色，短枝甚粗壯，長五至十八公厘。葉在長枝上相距五至三十公厘，在短枝上與花叢生；托葉甚小，形跡湮沒或硬化；葉柄長十至十七公厘，光滑無毛，臘葉標本之葉柄上面具溝，兩邊具下延之葉片，下面具皺紋；葉片卵形或橢圓形，長七至十二公分，寬三至六公分半，膜質，臘葉標本葉之表面青色，甚光滑，背面較淡，中肋葉脈時或全面被短絨毛；基部圓形，鈍形或稀闊楔形；先端漸尖形，漸尖之尖頭長五至八公厘，稀達十二公厘；邊緣平面具單鋸齒或雙鋸齒；中肋表面凹入，近先端則扁平，背面顯著，側脈每邊八至十條，直射，與中肋成四十五至七十五度之角，近邊緣向先端彎曲，上面扁平或微凹，下面顯著。花單生於長枝之葉腋或新枝之基部，於短枝上與花叢生，花梗長三至六公厘，梗上苞缺如，花六至八數；花萼盤狀，具六至八萼片，直徑三公厘半，萼片圓形，具睫毛，長寬均一公厘半；花冠輪狀，白色，具六花瓣，花瓣長橢圓形，長二公厘，寬一至一又四分之一公厘，其下部之五分之一聯合，小蕊花之小蕊較花瓣略短或相等，花藥卵圓形，長四分之三公厘，大蕊花之不孕小蕊之長度僅及花冠之半，花藥卵圓形；大蕊花之子房卵圓形，具六子室，每子室具一胚珠；小蕊花之不孕大蕊球形略扁，長一公厘，寬一又四分之一公厘，果球形略扁，柱頭顯著，冠形或稀具柄，果長三至四公厘，兩側直徑四公厘，具六溝，含核六粒；核長三公厘，背寬一公厘，長橢圓形，三角形，背與兩側具不顯著之楞紋，木質堅硬。

此種產於峨眉邊之沙坪，洪雅縣之瓦屋山及天全縣等處。六月開花，八月果可成熟。

此種與印度之 *Ilex fragilis* 親緣較近，但此種之葉則背面被絨毛，故易於區別。

圖解： 1. 花之枝（原大）； 2. 果枝（原大）； 3. 小蕊花（放大十倍）； 4. 花之背面觀（放大十倍）； 5. 花之解剖（放大十倍）； 6. 葉之一部放大以示其毛（放大五倍）。



173. *Ilex optenensis* S. Y. Hu



Plate 174.

ABIES DELAVAYI Franchet.

Abietaceae.

Abies Delavayi Franchet in Journ. de Bot. XIII (1899), 258.- Masters in Journ. Linn. Soc. Bot. XXVI (1902), 557; XXXVII (1906), 422; in Gard. Chron. ser. 3, XXXIX (1906), 212, fig. 82.- Belsner, Handb. Nadelholz. ed. 2, (1909), 194.- Diels in Notes Roy. Bot. Gard. Edinb., VII (1912), 252 (Pl. Chin. Forrest.).- Patschke in Engler, Bot. Jahrb. XLVIII (1913), 642, fig. 3.- Rehder et Wilson. in Sargent, Pl. Wilson. II (1914), 41.- Craib in Notes Roy. Bot. Gard. Edinb., XI (1919), 277, fig. 163.- Chun, Chin. Econ. Trees, (1921), 27, pl. 10, synonym. exclud.- Rehder in Bailey, Cult. Evergreens, (1923), 254; Rehder, Manual Cult. Trees & Shrubs (1927), 31.- Silva Tarouca et Schneider, Uns. Freiland-Nadelh. ed. 2 (1923), 28, fig. 28.- Wilson in Journ. Arn. Arb. VII (1926), 65.- Handel-Mazzett, Symb. Sinicae, VII, Lieferung 1 (1929), 8.- Dallimore et Jackson, Handb. Conif. (1931), 97, fig. 16.- Jackson, Notes Chin. Conif. in Conif. Cult. (1932), 243.

Keteleeria Fabri Masters in Journ. Linn. Soc. Bot. XXVI (1902), 555; XXXVII (1906), 421; in Gard. Chron. ser. 3, XXXIII (1903), 194.- Mottet in Rev. Hort. (1904), 130.- Belsner, Handb. Nadelholz. ed. 2 (1909), 203.- Patschke in Engler, Bot. Jahrb. XLVIII (1913), 649.

Abies Fargesii Masters (non Franchet) in Gard. Chron. ser. 3, XXXIX (1906), 213, fig. 83; in Journ. Linn. Soc. Bot. XXXVII (1906), 422.

Pinus Fabri Voss in Putlitz & Meyer, Landlexikon, IV (1913), 773.

Abies Faberi Craib in Notes Roy. Bot. Gard. Edinb., XI (1919), 278, fig. 164.

Evergreen tree 20-30 metres high, with massive branches forming a pyramidal crown; bark grey or brownish-grey, deeply furrowed; branchlets opposite or whorled, terete, shining reddish-brown or brownish-grey, grooved, glabrous or pubescent in the grooved circular leaf-scars. Winter-buds large, ovoid, 1-1.2 cm. long, reddish-brown, resinous, with numerous ovate or obtuse, coriaceous, puberulous scales which are persistent at the base of branchlets. Leaves crowded and spirally arranged on the lateral branchlets, usually twisted into two opposite ranks, leaves on the upper part of branchlets upward and much shorter than the lower leaves which are directed outwards and downwards, linear, 1-1.5, rarely to 2.5 cm. long, upper surface dark shining green, grooved on the midrib, lower surface green, with prominent midrib and between it with two white bands of stomata, obtuse and emarginate on the apex, entire and revolute on the margin, contracted at the base, attached to the branchlets and leaving circular, flat, disk-like scars when the leaves falling. Flowers appearing in the spring, monoecious, staminate flowers in short, pendent, cylindric-oblong catkins from leaf axils on the lower side of branchlets, anthers scarlet, 2-celled, surmounted by a knob-like connective; pistillate flowers in erect, oblong cones, on the topmost branchlets consisting of numerous, imbricate bracts and scales and each with two ovules at its base. Fruit an erect, woody, oblong-cylindric to oblong-ovoid, barrel-shaped cone 7-10 cm. long, 3.5-8.5 cm. broad, broadest at the base, violet-black, maturing in the first autumn, scales closely imbricate, fan-shaped, 2 cm. broad: bracts purplish, thin-coriaceous, oblong-spathulate, with a short exerted abrupt point at apex, narrowed at the base into a long stipe, scales and bracts falling as soon as the seeds are ripe and leaving the persistent axis on the tree; seeds winged.

MOUNT OMEI: near Chin-ting, alt. 3135 m., on slopes, tree 15 metres high, *T. H. Tu*, Nos. 342 & 655, June 1935; same locality, *S. S. Chien*, No. 6158, July 14, 1937; southwest of Mount Omei, Opien-hsien, Yen-king-chi, tree 25 metres high, bark grey or brownish-grey, longitudinally fissured into thin flakes, *W. C. Cheng*, No. 6338, July 5, 1938.

Distribution: southwestern Szechuan, eastern Sikang, Yunnan.

This species is fairly common at the summit of Mount Omei, especially at the southern slopes. Its wood is commonly used for house-building on account of its large size, though it is very soft. It differs from other species in the reddish-brown shining branchlets, the dark violet-black, oblong-cylindric cones and the slender leaves which are revolute on the margin. *Keteleeria Fabri* Masters which was discovered by E. Faber at Mount Omei in 1867 is identical with this species.....*W. P. Fang*.

Fig. 1, a fruiting branch (natural size); 2, a staminate flowering branch (natural size); 3, a pistillate flowering branch (natural size); 4, a scale with seeds (natural size); 5 & 6, the inner and outer sides of scales (natural size); 7, a bract (natural size); 8, a seed (natural size).

圖版一百七十四

冷杉

松科

常綠喬木高二十至三十公尺，具多數粗壯之枝組成塔形之樹冠；樹皮灰色或灰褐色，深裂；小枝對生或輪生，圓筒形，亮紅褐色或灰褐色，光滑或於圓形深凹之葉疤被絨毛。冬芽卵圓形，長一公分至一公分二公厘，具松脂，鱗片多數，卵形或鈍形，革質，微被絨毛，宿存於小枝之基部。葉密生於側枝上段成螺旋形，常側向曲折成兩行，近於小枝頂端之葉向上直生，常較短，在小枝下部之葉較長，側向或下垂，線形，長一至一公分半，稀達二公分半，表面深綠色並有光澤，中肋凹下，背面淡綠色，中肋凸起，在其兩側各具一氣孔帶，先端鈍形並現凹缺，邊緣全緣且反捲，葉以極狹小之基部着生於枝，落後枝上現細圓而扁之盤形葉疤。花春季開放，單性，大小蕊花同株，小蕊花生於短而下垂之圓柱形葉花序，花序着生於小枝基部之葉腋，花藥朱紅色，二室，冠以球形之藥隔；大蕊花着生於直立之長圓形葉花序，常位於小枝之先端，具多數覆瓦狀排列之苞片及鱗片，在其基部各具二胚珠。果為長方圓柱形或長方卵圓形常狀似圓桶之球果，長七至十公分，直徑三公分半至五公分半，基部粗大，直立，木質，紫黑色，當年秋季成熟。鱗片密集而排列成覆瓦狀，扇形，寬二公分，苞片淡紫色，薄革質，成長圓匙形，先端突尖常伸出果外，基部狹形而成長柄，種子成熟時鱗片與苞片均即脫落僅殘留球果之軸宿存於枝上；種子具翅。

此種產於峨眉山之金頂附近及峨眉山西南峨邊縣之鹽井溪，海拔二千五百公尺以上。

此種分佈於四川西南部，西康東部及雲南。

此種之木材雖軟但形甚粗大，常用作用建築材料。此種具紅褐色之小枝，深紫黑色而長方圓柱之球果及邊緣反捲之葉，極易與相近諸種辨別。費伯氏於前清光緒十三年首先發現於斯山之費伯油杉，俟後經詳細攷證，知其特性確與雲南大理一帶之冷杉相同，已改用此名矣。

圖解： 1. 果枝（原大）； 2. 小蕊花枝（原大）； 3. 大蕊花枝（原大）； 4. 鱗片及種子（原大）； 5 及 6. 鱗片之裏面及背面（原大）； 7. 苞片（原大）； 8. 種子（原大）。





KETELEERIA DAVIDIANA (Bertrand) Beissner.

Abietaceae.

Keteleeria Davidiana (Bertrand) Beissner, Handb. Nadelholzk. (1891), 424, fig. 117.- Van Tieghem in Bull. Soc. Bot. France, XXXVIII (1891), 412.- Pritzl in Engler, Bot. Jahrb. XXIX (1900), 217.- Masters in Journ. Linn. Soc. Bot. XXVI (1902), 551; XXXVII (1903), 421; in Gard. Chron. ser. 3, XXXIII (1903), 48, fig. 37, 38; in Journ. Bot. XLI (1903), 270.- Mottet in Rev. Hort. (1904), 130, fig. 53.- Clinton-Baker, Illustr. Conif. I (1909), 72, t.- Elwes et Henry, Trees Great Brit. & Ireland, VI (1912), 1475.- Patschke in Engler, Bot. Jahrb. XLVIII (1913), 649.- Rehder et Wilson in Sargent, Pl. Wilson. II (1914), 39.- Chou, Chin. Econ. Trees (1921), 24, pl. 8.- Rehder in Bailey, Cult. Evergreens, (1923), 247, fig. 64.- Silva Tarouca et Schneider, Uns. Freiland Nadelholzk. ed. 2 (1923), 30, fig.- Wilson in Journ. Arn. Arb. VII (1926), 53.- Rehder, Manual Cult. Trees & Shrubs (1927), 28.- Handel-Mazzetti, Symb. Sinicae, VII, Lieferung 1 (1929), 10.- Dallimore et Jackson, Handb. Conif. 2nd ed. (1931), 269, fig. 62.- Chittenden, Conif. Cult. (1932), 234.

Pseudotsuga Davidiana Bertrand apud Carriere in Rev. Hort. (1873), 37, fig. 3, 4, 5.- Bertrand in Ann. Sci. Nat. ser. 5, XX (1874), 86.

Abies sacra David, Journ. de Trois. Voy. II (1875), 29 (nomen nudum).- Franchet in Nouv. Arch. Mus. Paris, ser. 2, VII (1884), 100, t. 14 (Pl. David. I, 200, t. 14).

Pinus (*Pseudotsuga*) *Davidiana* McNab in Proc. Roy. Irish. Acad. ser. 2, II (1877), 702.

Abies Davidiana Franchet in Nouv. Arch. Mus. Paris, ser. 2, VII (1884), 98, t. 13 (Pl. David. I, 283, t. 13); in Journ. de Bot. XIII (1899), 260.- Masters in Gard. Chron. ser. 3, I (1887), 481.

Keteleeria sacra Beissner, Handb. Nadelholzk. (1891), 426.- Van Tieghem in Bull. Soc. Bot. France, XXXVIII (1891), 412.- Mottet in Rev. Hort. (1904), 130.- Patschke in Engler, Bot. Jahrb. XLVIII (1913), 649.

Keteleeria Delavayi Van Tieghem in Bull. Soc. Bot. France, XXXVIII (1891), 412 (nomen seminudum).

Podocarpus mitchuensis Franchet in Journ. de Bot. XIII (1899), 265.- Pritzl in Engler, Bot. Jahrb. XXIX (1900), 213.- Masters in Journ. Linn. Soc. Bot. XXVI (1902), 548; XXXVII (1906), 414.

Pinus sacra Voss in Mitt. Deutsch. Dendr. Ges. XVI (1907), 94.

Keteleeria formosana Hayata in Gard. Chron. ser. 3, XLIII (1908), 194.

Keteleeria Davidiana var. *formosana* Hayata in Journ. Coll. Sci. Tokyo, XXV, art. 19 (1908), 221 (Fl. Mont. Formos.)

Keteleeria Equidii Leveille in Fedde Rep. Spec. Nov. VIII (1910), 60.

Evergreen tree 20 to 35 metres high, 3 to 5 metres in diameter, irregularly flat-topped. Bark grey or yellowish-grey, fissured into thin plates, the inner bark reddish. Branches horizontally spreading; branchlets angular, those of one year old brownish-purple, glabrous or rarely with brown hairs; those of more than one year old brown, with conspicuous circular leaf-scars. Buds terminal, ovoid or subglobose, rounded at the apex, brown or reddish-brown, with numerous imbricate, keeled, rounded scales which are persistent as a conspicuous sheath at the base of branchlets. Leaves spirally arranged, usually twisted into two ranks, linear, 2-5 cm. long, those on the young plants sharp pointed at apex; those on adult plants rounded at apex, flattened, green, prominently keeled at the midrib on both surfaces and with 2 indistinct bands of stomata at the lower surface. Flowers monoecious; staminate flowers in terminal or axillary clusters, each consisting of 5-10 flowers, on a short, scaly peduncle, anthers numerous, each with 2 pollen sacs; pistillate flowers in erect, cylindric catkins, terminal on spur-like branchlets, with numerous scales, each with 2 ovules. Cones erect, ripening in one year, cylindric-oblong, 12-18 cm. long, 4-5 cm. broad, reddish when young, pale brown when matured, with numerous persistent scales and bracts; scales woody, ovate, 2-3 cm. long, 2-2.5 cm. broad, rounded and reflexed at the apex; bracts one-half to one-third as long as the scales, 3-5 mm. broad, lacinated into 3 pointed branches at the apex, erect or recurved; seeds ovoid, 1.5-2 cm. long, 2 to each scale, with a prominent hatchet-shaped wing, bright glossy brown, as long as the scales, but appearing longer than

scales and exposing the tip of wings when the scales expand; peduncle 2-3 cm. long, stout.

MOUNT OMEI: southwest of Mount Omei, Opien-hgien, Lau-mu-ping, tree 25 metres high, bark dark grey, fissured, cones green before maturity, *W. C. Cheng*, Nos. 6284, 6349 & 6487, July 16, 1936.

SZECHUAN: northeastern Szechuan, without precise locality, *K. L. Chu*, No. 2159, in 1936.

Distribution: Shensi, Hupeh, Szechuan, Yunnan, Formosa.

This species was discovered by Pere David in 1869 at Lung-an-fu, Western Szechuan. It differs from *Keteleeria Fortunei* Carriere in the yellowish-grey branchlets, emarginate leaves and ovate cone-scales which are recurved at apex. Cheng's 6487 has ovate-oblong cone-scales resembling those of *Keteleeria Evelyniana*..... *W. P. Fang*.

Fig. 1, a fruiting branch (natural size); 2, a pistillate flowering branch (natural size); 3, a staminate flowering branch (natural size); 4, front view of scale (natural size); 5, back view of scale with bract (natural size); 6, seed (natural size).

圖版一百七十五

大衛油杉

別名：鐵堅杉，牛尾杉，德氏油杉

松科

常綠喬木高二十至三十五公尺，直徑三至五公尺，樹冠成不規則之扁形。樹皮灰色或黃灰色，常裂成薄片脫落，脫落後之內皮淡紅色。枝斜向伸展；小枝撈形，當年之枝紫褐色，光滑或稀被褐色之毛；多年之枝褐色，具顯著之圓形葉疤。冬芽頂生，卵圓形或亞圓球形，褐色或紅褐色，具多數覆瓦狀排列之圓形鱗片，常作鞘狀，宿存於小枝之基部。葉着生於枝上成螺旋形，常折成兩行，線形，長二至五公分，生於幼苗者先端尖銳；生於老樹者先端圓形，綠色，中肋在葉兩面均突出，背面之氣孔帶不甚顯明。花單性，大小蕊花同株，小蕊花叢生於枝之先端或葉腋，常五至十花生於短而具鱗片之花梗上，花藥多數，各具二花粉囊；大蕊花成直立之圓柱形柔荑花序，頂生於小枝之先端，具鱗片甚多，每鱗片具二胚珠。球果直立，一年成熟，長方圓柱形，長十二至十八公分，直徑四至五公分，幼嫩時淡紅色，成熟時淡褐色，具多數宿存之鱗片及苞片；鱗片木質，卵形，長二至三公分，直徑二公分至二公分五公厘，先端圓形而反捲；苞片之長度僅及鱗片之半或三分之一，寬三至五公厘，先端裂成三枝，直立或反捲；種子卵圓形，長一公分半至二公分，常二枚生於鱗片內側，具斧形之翅，褐色而有光澤，與鱗片等長，鱗片成熟時張開而種子之翅則露其先端於外；果梗粗壯，長二至三公分。

此種產於峨眉山西南之峨邊縣，常成高二十五公尺之喬木。

此種分佈於陝西，湖北，四川，雲南，台灣等省。

此種係法教士大衛氏首先發現於四川之龍安府（即今之平武縣）。此種與福建及香港之福氏油杉之區別在其黃灰色之小枝，具凹缺之葉及卵形之球果鱗片而先端反捲。

圖解： 1. 果枝（原大）； 2. 大蕊花枝（原大）； 3. 小蕊花枝（原大）； 4. 鱗片之內側（原大）； 5. 鱗片之背面及苞片（原大）； 6. 種子（原大）。



175. *Keteleeria Davidiana* (Bertrand) Beissner



Plate 176.

PSEUDOTSUGA SINENSIS Dode.

Abietaceae.

Pseudotsuga sinensis Dode in Bull. Soc. Dendrol. France, (1912), 58.- fig. in Mitt. Deutsch. Dendr. Ges. XXI (1912), 387.- Craib in Notes Roy. Bot. Gard. Edinb., XI (1919), 189-190, fig. 161.- Chun, Chin. Ecom. Trees, (1921), 23.- Rehder in Bailey, Cult. Evergreens, (1923), 255; Rehder, Manual Cult. Trees & Shrubs, (1927), 38.- Wilson in Journ. Arn. Arb. VII (1926), 52. Hu in Hu et Chun, Icon. Pl. Sin. I (1927), 10, t. 10.- Dallimore et Jackson, Handb. Conif. 2nd ed. (1931), 486.- Chittenden, Conif. Cult. (1932), 33, 238.

Evergreen tree 40 metres high with pyramidal crown; bark grey, longitudinally fissured; branches in whorls, branchlets terete, those of one year old brown or yellowish, pubescent, with leaves, those of more than one year old grey or dark grey, sparsely pubescent, with scattered circular and conspicuous lenticels, without leaf. Winter-buds terminal, spindle shaped, pointed, non-resinous, with shining brown, numerous, acute or acuminate, imbricate scales, ciliate on the margin. Leaves pectinate-arranged, linear, flattened, 2.5-3 cm. long, obtuse and notched at the apex, narrowed at base, entire on the margin, upper surface deep green with depressed midrib, lower surface green with raised midrib and beside it with two bands of stomata, with only one fibro-vascular bundle. Flowers unisexual, monoecious, solitary; staminate flowers cylindrical, usually spirally arranged, arising from the axils of leaves, on a short peduncle, consisting of numerous, globose anthers having spur-like connectives, on short pedicels; pistillate flowers conical, terminal or in the axils of upper leaves, composed of numerous, spirally arranged, overlapping, rounded scales, which are shorter than the 3-lobed bracts, each scale with 2 ovules. Cones pendulous, oblong-ovoid, 5-6 cm. long, 4 cm. broad, consisting of about 20 large woody scales and exerted reflexed bracts; scales persistent, concave, rounded, 2-2.5 cm. long, 2.5-3 cm. broad, yellow-puberulous; bracts oblong, 1 cm. long, with a long, narrow, middle lobe and two short, broader, lateral lobes, reflexed near the apex; peduncles 1-1.5 cm. long, stout, puberulous; seeds subtriangular, winged.

MOUNT OMEI: southwest of Mount Omei, Yueh-hsi-hsien (越巂縣), Lau-mu-ping (老木坪), alt. 1700-2200 m., tree 40 metres high, 1 metre in diameter; bark dark grey, longitudinally fissured, *W. C. Cheng*, Nos. 6344, 6345, 6561 & 6844, August 15, 1936.

Distribution: Chekiang, Anhwei, Szechuan, Sikang; Yunnan.

This species was discovered by Pere Maire at the high mountains of about 3,000 metres elevation at Che-hai (者海) and Tung-chuan-fu (東川府即今之會澤縣) of northeastern Yunnan. Dr. Cheng's discovery of this species at southeast of Mount Omei proves that it has a wider region in distribution. It is closely related to *Pseudotsuga Wilsoniana* Hayata, but differs in having longer leaves and cones with puberulous scales.....W. P. Fang.

Fig. 1, a fruiting branch (natural size); 2, a portion of branch showing the pubescence (enlarged 5 times); 3, a scale with bract (natural size); 4, the inner side of scale (natural size); 5, seed (natural size).

圖版一百七十六

黃杉 別名：帝杉

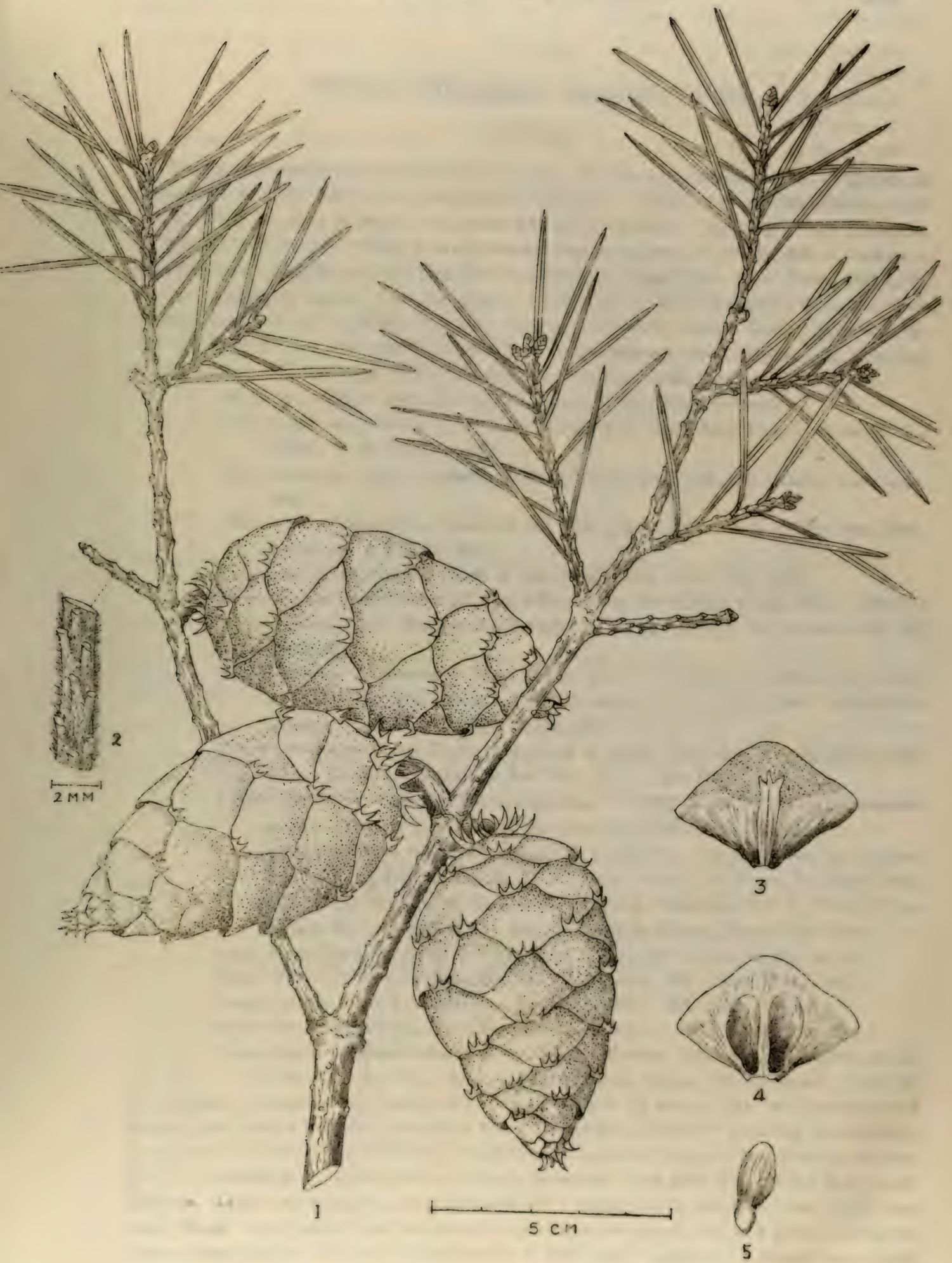
常綠喬木高四十公尺，樹冠塔形；樹皮灰色並現縱裂；枝輪生，小枝常成圓筒形，當年生之枝褐色或黃色，被絨毛並具葉，多年生之枝灰色或深灰色，疏被絨毛，圓形之皮孔極顯著，但不具葉。冬芽頂生，紡錘形，先端尖銳，無樹脂，鱗片銳尖或漸尖，邊緣具纖毛，多數，排列成覆瓦狀。葉背生幼嫩枝上成梳狀，綫形長二公分半至三公分，先端鈍形並現凹缺，基部窄小，全緣，表面深綠色並具凹形之中肋，背面綠色並具凸出之中肋，中肋之兩側各具一氣孔帶，橫切面驗之僅具一維管束。花單性，大小蕊花同株，小蕊花螺旋形排列成圓筒形之花序，具短花梗，着生於葉腋，具多數圓球形之花藥，着生於短梗上，花藥上具距形之藥隔；大蕊花生於枝頂或枝上端之葉腋，具多數螺旋排列之圓形鱗片，鱗片之內側各具二胚珠，苞片較短於鱗片，上部分為三裂片。球果下垂，長方卵圓形，長五至六公分，直徑四公分，具二十枚大形木質鱗片及突出反捲之苞片；鱗片宿存，圓形，長二至二公分半，寬二公分半至三公分，被黃色絨毛；苞片長圓形，長一公分，具長而狹之中央裂片及二枚短而寬之側裂片，先端均反捲；果梗長一至一公分半，粗壯並被絨毛；種子微呈三角形，具翅。

此種產於峨眉山西南越嶲縣境之老木坪，海拔二千公尺之森林中。

此種分佈於浙江，安徽，四川，西康，雲南等省。

此種原由法教士馬利氏發現於雲南東北部會澤縣附近及蒼海之高山森林中。近於峨眉山西南發現此種，可證明其有較寬之分佈區域。此種與雲南及台灣之威氏黃杉親緣甚近，主要之區別在此種具較長之葉及其球果之鱗片被絨毛。

圖解： 1. 果枝（原大）； 2. 枝之一段示其毛（放大五倍）； 3. 鱗片及苞片（原大）； 4. 鱗片之內側（原大）； 5. 種子（原大）。



176. *Pseudotsuga sinensis* Dode



Plate 177.

TSUGA CHINENSIS (Franchet) Pritzl.

Abietaceae.

Tsuga chinensis (Franchet) Pritzl. in Engler, Bot. Jahrb. XXIX (1900), 217.— Masters in Journ. Linn. Soc. Bot. XXVI (1902), 566; XXVII (1906), 321.— Biessner, Handb. Nadelholz, ed. 2, (1909), 82.— Patschke in Engler, Bot. Jahrb. XLVIII (1913), 639.— Rehder & Wilson in Sargent, Pl. Wilson. II (1914), 37.— Bean, Trees & Shrubs, Hard. Brit. Isles, 11 (1914), 606.— Downie in Notes Roy. Bot. Gard. Edinb., XIV (1923), 18, fig. 194, 6.— Chun, Chin. Icon. Trees, (1921), 22, fig. 7.— Rehder in Balley, Cult. Evergreens, (1923), 266.— Silva Tarouca & Schneider, Uns. Freland-Nadelholz, ed. 2 (1923), 36, fig.— Dallimore & Jackson, Handb. Conif. (1923), 533, fig. 117.— Wilson in Journ. Arn. Arb. VII (1926), 50.— Handel-Mazzetti, Symb. Sinicae, VII, Lieferung 1 (1929), 11.— W. C. Cheng in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. IX (1929), 18.

Abies thei-sha David, Journ. Trois, Voy. Chin. I (1878), 343, nomen nudum.

Abies Tsuga (non Siebold et Zuccarini) Franchet in Nouv. Arch. Mus. Paris, ser. 2, VII (1884), 97 (Pl. David. 1, 267).

Abies dumosa var. *chinensis* Franchet in Journ. de Bot. XIII (1899), 258. Delavay's specimen. excl.

Abies chinensis Franchet in Journ. de Bot. XIII (1899), 259.— Bols in Journ. Soc. Hort. France, ser. 4, I (1900), 230.

Tsuga dumosa var. *chinensis* Pritzl. in Engler Bot. Jahrb. XXIX (1900), 217.

Tsuga Sieboldi (non Carriere) Pritzl. in Engler Bot. Jahrb. XXIX (1900), 217.— Masters in Journ. Linn. Soc. Bot. XXVI (1902), 566; XXXVII (1906), 421; in Journ. Bot. XLI (1903), 270.

Tsuga yunnanensis Masters in Gard. Chron. ser. 3, XXXIX (1906), 236, fig. 93, in part; XXXVII (1906), 421.— Bean in Kew Bull. Misc. Inform. (1910), 176.— Not Masters in Journ. Linn. Soc. Bot. XXVI (1902), 566.

Tsuga Brunoniana (non Carriere) Masters in Journ. Linn. Soc. Bot. XXXVII (1906), 421.— Downie in Notes Roy. Bot. Gard. Edinb., XIV (1923), 19.

Tsuga diversifolia Masters in Journ. Linn. Soc. Bot. XXXVII (1906), 422, as to Formosan plant.— Masters in Journ. Linn. Soc. Bot. XVIII (1881), 514, excluded.

Tsuga formosana Hayata in Gard. Chron. ser. 3, XLIII (1906), 194; Journ. Coll. Sci. Tokyo, XXV, art. 19, (1906), 222, fig. 12 (Fl. Mont. Formos.); in Fedde, Rep. Spec. Nov. VIII (1910), 366; Act. III. Congr. Internat. Bot. Bruxelles, 1910, II, (1912), 76, pl. 28; Icon. Pl. Formos. V (1915), 206.— Kanehira, Formos. Trees. (1917) 617.

Tsuga patens Downie in Notes Roy. Bot. Gard. Edinb., XIV (1923), 16, fig. 194, 6.

Tsuga Wardii Downie, in Notes Roy. Bot. Gard. Edinb., XIV (1923), 17, fig. 194, 4.

Tsuga Calcarea Downie in Notes Roy. Bot. Gard. Edinb., XIV (1923), 17, fig. 3.

Tsuga Forrestii Downie in Notes Roy. Bot. Gard. Edinb., XIV (1924), 18, fig. 194, 7.

Tsuga intermedia Handel-Mazzetti, Pl. Nov. Sin. Fortsatz. (1924), 25, p. 2 (Anzeig. Akad. Wiss. Wien, no. 10).— Handel-Mazzetti, Symb. Sinicae, VII, Lieferung 1 (1929), 10.

Evergreen, pyramidal Tree usually 20 metres, rarely up to 30 metres, high, bark brownish-grey to dark grey, fissured irregularly into thick flakes. Branches horizontally spreading or ascending; branchlets of the current year subterete, yellowish-grey, pubescent, those of 2 or 3 years old dark grey or yellowish-grey, glabrescent or slightly pubescent, with prominent pulvini. Buds ovoid, glabrous. Leaves spirally arranged and twisted into 2 ranks, usually pectinate, linear, 12-30 mm. long, 2-3 mm. broad, rounded and emarginate at apex, upper surface shining dark green and slightly grooved, lower surface concave and raised of midrib, with white longitudinally stomatiferous bands beside the midrib when young and inconspicuous later, entire on the margin or occasionally with a few remote bristle-like tooth near the apex of the margin. Cones pendulous, shortly stalked, ovoid, 15-30 mm. long, 10-14 mm. in diameter, yellowish or brownish when maturity; scales suborbicular, 10-13 mm. long, 9-12 mm. broad, shining yellowish-grey, glabrous, striated on the outer surface, rounded on the apex which are slightly incurved near the summit; seeds subovoid, about 8 mm. long included the wings.

MOUNT OMEI: Hsi-hsiang-chih, alt. 2100 m., *S. N. Hsu*, without number, in 1938: southwest of Mount Omei, Opien-hsien, *W. C. Cheng*, Nos. 6451 & 6560, in 1938.

SIKANG: Pao-hsing-hsien, *K. L. Chu*, Nos. 2551 & 4122, in 1938.

Distribution: Cheking, Anhwei, Hupeh, Szechuan, Sikang, Kweichow, Formosa.

This species is easily distinguished by its glabrescent branchlets with conspicuous pulvini, by its emarginate leaves, and by its polished stalked cones with woody scales which bevelled and inclined to be incurved at the summit. It has been found only at the middle slope of Mount Omei, though its occurrence is fairly common in various provinces of the Yangtze River *W. P. Faug.*

Fig. 1, a fruiting branch (natural size); 2, inner side of a scale without seeds (enlarged 2 times); 3, outer side of scale with bract (enlarged 2 times); 4, seeds (enlarged 2 times); 5, upper side and lower side of leaf (enlarged 3 times).

圖版一百七十七

鐵 杉

松 科

尖塔形常綠喬木，高二十公尺，稀達三十公尺，樹皮灰褐色或深灰色，常現不規則之縱裂而成厚裂片。枝平斜向或直斜向伸展；當年生之小枝亞圓筒形，黃灰色，被絨毛，二年或三年之老枝深灰色或黃灰色，光滑或微被絨毛，具顯著之葉褥。冬芽卵圓形，光滑。葉螺旋形排列，基部捲折成兩行，全形如梳，每葉線形，長十二至三十公厘，寬二至三公厘，先端圓形並有凹缺，表面深綠色並有光澤，中肋在葉表面凹形，中肋在葉面則突起，兩側各具一白色之氣孔帶，在葉幼嫩時較為顯著，邊緣全緣或近其先端具刺狀之稀疏小鋸齒。球果下垂，着生於短果梗上，全形卵圓，長十五至三十公厘，直徑十至十四公厘，成熟時現淡黃色或淡褐色，鱗片圓形，長十至十三公厘，寬九至十二公厘，黃灰色並有光澤，無毛，表面現縱溝，先端圓形，略向內捲；種子亞卵圓形，具翅，兩者合計共長八公厘。

此種產於峨眉山之洗象池及峨眉山西南之峨邊縣。

此種分佈於浙江，安徽，湖北，四川，西康，貴州，台灣等省。

此種之枝無毛而具顯著之葉褥，先端現凹缺之葉，及短梗之球果具木質鱗片而先端略內捲。均足以表示其特徵，易與別種辨別。在長江流域各省雖分佈甚廣，但峨眉則僅山之中部產之。

圖解：1. 果枝（原大）；2. 鱗片之內側（放大二倍）；3. 鱗片之表面及苞片（放大二倍）；4. 種子（放大二倍）；5. 葉之表面及背面（放大三倍）。



177. *Tsuga chinensis* (Franchet) Pritzell



Plate 178.—

TSUGA YUNNANENSIS (Franchet) Masters.

Abietaceae.

Tsuga yunnanensis (Franchet) Masters in Journ. Linn. Soc. Bot. XXVI (1902), 556. Beissner, Handb. Nadelholzk. ed. 2, (1909), 83.- Patschke in Engler, Bot. Jahrb. XLVIII (1913), 630.- Rehder et Wilson in Sargent, Pl. Wilson. II (1914), 36.- Hayata in Tokyo Bot. Mag. XXXI (1917), 118.- Chun, Chin. Econ. Trees (1921), 22.- Rehder in Bailey, Cult. Evergreens, (1923), 266.- Dallimore et Jackson, Handb. Conif. (1923), 538, fig. 119.- Downie in Notes Roy. Bot. Gard. Edinb., XIV (1923), 16, fig. 194, 1.- Wilson in Journ. Arn. Arb. VII (1926), 49.- Handel-Mazzetti, Symb. Sinicae, VII, Lieferung I (1929), 12.- W. C. Cheng in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. IX (1933), 20.

Abies dumosa var. *chinensis* Franchet in Journ. de Bot. XIII (1899), 258, as to Delavay's specimen.

Abies yunnanensis Franchet in Journ. de Bot. XIII (1899), 258.- Bols in Journ. Soc. Hort. France, ser. 4, I (1900), 231.

Tsuga dura Downie in Notes Roy. Bot. Gard. Edinb. XIV (1923), 16, fig. 194, 2.

Tsuga leptophylla Handel-Mazzetti, Pl. Nov. Sin. Fortsetz. 25, p. 3 [Anzeig. Akad. Wiss. Wien. No. 10 (1924)].

Evergreen pyramidal tree usually 15, rarely up to 40 metres high, bark brownish-grey to dark grey, fissured into flakes. Branches massive, ascending or horizontally spreading; branchlets terete, those of the current year slender, reddish-brown or reddish-grey, setulose, those of more than one year old brownish-grey or dark grey, pulvini slightly prominent, pubescent, persistent. Leaves spirally arranged and usually twisted into two ranks, or sometimes more or less forwardly spreading, linear, 8-20 mm. long, 2 mm. broad, rounded or obtuse at the apex, entire or serrulate on the upper margin, upper surface shining deep green and with grooved midrib, lower surface with two conspicuous white stomatiferous bands beside the elevated midrib. Cones sessile, terminal, ovoid or conic-ovoid, 15-28 cm. long, 8-12 mm. in diameter; scales suborbicular or oblong-ovate, rounded and recurved at the apex; seeds about 1 cm. long included the oblong wings.

MOUNT OMEI: Chiu-lao-tung, alt. 1800 m., T. H. Tu, Nos. 370 & 700, in 1935; southwest of Mount Omei, Oplen-hsien, Yen-king-chi, W. C. Cheng, Nos. 6172 & 6280, in 1936.

SIKANG: Pao-hsing-hsien, K. L. Chu, Nos. 2510, 2996, 3321, 3487 & 4148, in 1936.

Distribution: Western Szechuan, Sikang, Yunnan.

This species is easily distinguished from *Tsuga chinensis* by its entire leaves which are rounded at the apex and by its smaller, dull coloured, sessile cones with flexible scales which usually recurved at the summit. This species is also near *Tsuga dumosa* Sargent of the Himalayas, that species has, however, longer, more pointed leaves and slightly longer and pointed smaller cones.....W. P. Fang.

Fig. 1, a fruiting branch (natural size); 2, a portion of branch enlarged to show the hairs (enlarged 5 times); 3, leaves (enlarged 2 times); 4, a scale with seeds (enlarged 2 times).

圖版一百七十八

雲南鐵杉

松科

常綠喬木高十五公尺，稀達四十公尺，樹冠塔形，樹皮褐灰色或深灰色，縱裂成薄片。枝粗壯而密集，直斜向或平擗向伸展；小枝圓筒形，當年生者纖細，紅褐色或紅灰色，具細剛毛，多年生之枝褐灰色或深灰色，葉褥微顯著，被宿存之絨毛。葉螺旋形生長，常扭折成兩行，稀向上直生，線形，長八至二十公厘，寬二公厘，先端圓形或鈍形，邊緣全緣或近其先端部分微具細鋸齒，表面深綠色有光澤並具凹形之中肋，背面之中肋凸出，並於其側各具白色之氣孔帶。球果無柄，頂生於小枝上，卵圓形或圓錐狀卵圓形，長十五至二十八公厘，直徑八至十二公厘；鱗片亞圓形，圓形長或方卵形，先端向外捲折；種子及其長圓形之翅共長一公分。

此種產於峨眉之九老洞及峨眉山西南峨眉邊縣之鹽井溪，常在海拔一千八百公尺左右之森林中。

此種分佈於四川西部，西康及雲南。

此種與鐵杉親緣最近，其主要之區別在此種之葉先端圓形及小形深褐色之無柄球果，且其鱗片之先端向外反捲。此種又與喜馬拉雅山之 *Tsuga dumosa* Sargent 相近，但該種具長而尖之葉及球果，仍易辨別。

圖解： 1. 果枝（原大）； 2. 枝之一段放大以示其毛（放大五倍）； 3. 葉（放大二倍）； 4. 鱗片及種子（放大二倍）。



178. *Tsuga yunnanensis* (Franchet) Masters



Plate 179.

PINUS YUNNANENSIS Franchet.

Abietaceae.

Pinus yunnanensis Franchet in Journ. de Bot. XIII (1899), 253.—Masters in Journ. Linn. Soc. Bot. XXVI (1902), 553; XXXVII (1906), 415.—Gardener's Chronicle, II (1905), fig. 88.—Shaw in Sargent, Pl. Wilson. I (1911), 2.—Patschke in Engler, Bot. Jahrb. XLVIII (1912), 657.—Wilson in Journ. Arn. Arb. VII (1926), 43.—Rehder, Man. Cult. Trees & Shrubs (1927), 62.—Handel-Mazzetti, Symb. Sin. VII, Lieferung 1 (1929), 15.—W. C. Cheng in Contrib. Biol. Lab. Sci. Soc. China, Bot. Ser. VI (1930), 18.

Pinus sinensis var. *yunnanensis* Shaw in Sargent, Pl. Wilson. II (1914), 17; Genus Pinus (1914), 60, t. 13, figs. 202-203.—Chun, Chin. Econ. Trees (1921), 15.—Rehder in Bailey, Cult. Evergreens (1923), 320.—Dallimore & Jackson, Handb. Conif. (1923), 451.—Chung in Mem. Sci. Soc. China, I (1924), 3 (Cat. Trees & Shrubs China).

Evergreen trees, usually 10, rarely up to 20, metres high, bark of upper part of stem red or purplish-red, exfoliating in thin flakes, that of the lower part brown or dark-brown, deeply fissured into irregular shreds; branchlets stout, terete, reddish-brown, roughened, those of the current and second year with persistent bracts. Buds conical-ovoid, reddish-brown, scales lanceolate, acuminate, its margin membranous, white, transparent or fringed. Leaves slender, needle-like, serrulate, 12-20, rarely to 25 cm. long, usually 3 in a fascicle; leaf-sheaths tubular, persistent, 10-15 mm. long, at first yellowish-grey, later dark-brown; leaf-bracts ovate-lanceolate, acuminate, white or yellowish, membranous and fringed at its margin. Flowers not found. Cones conic-ovoid, 7-9 cm. long, pale yellow at first and changed to cocoa-brown later, scales oblong, apex obtuse or rounded and below the apex slightly contracted; apophysis lustrous, flattened or slightly ridged; umbo usually raised into a short mucro which usually deciduous when matured. Seeds ovoid, yellowish-brown, with its articulate wing 1.8-2.2 cm. long.

MOUNT OMEI: southwest of Mount Omei, Opien-hsien, Lau-mu-ping, W. C. Cheng, No. 6341, July 6341.

SIKANG: Han-yuan-hsien (formerly known as Ching-chi-hsien), W. P. Fang, No. 3736, September 1928.

Distribution: southwestern Szechuan, Sikang, western Yunnan.

This species differs from *Pinus Massoniana* and *Pinus tabulaeformis* in having leaves usually 3 in a bundle and reddish-brown branchlets which are usually stouter than those of other two species.

.....W. P. Fang

Fig: 1, a fruiting branch (natural size); 2, a bundle of leaves (natural size); 3, inner side of scale with seeds (natural size); 4, outer side of scale (natural size); 5, seed (natural size).

圖版一百七十九

雲南松

松科

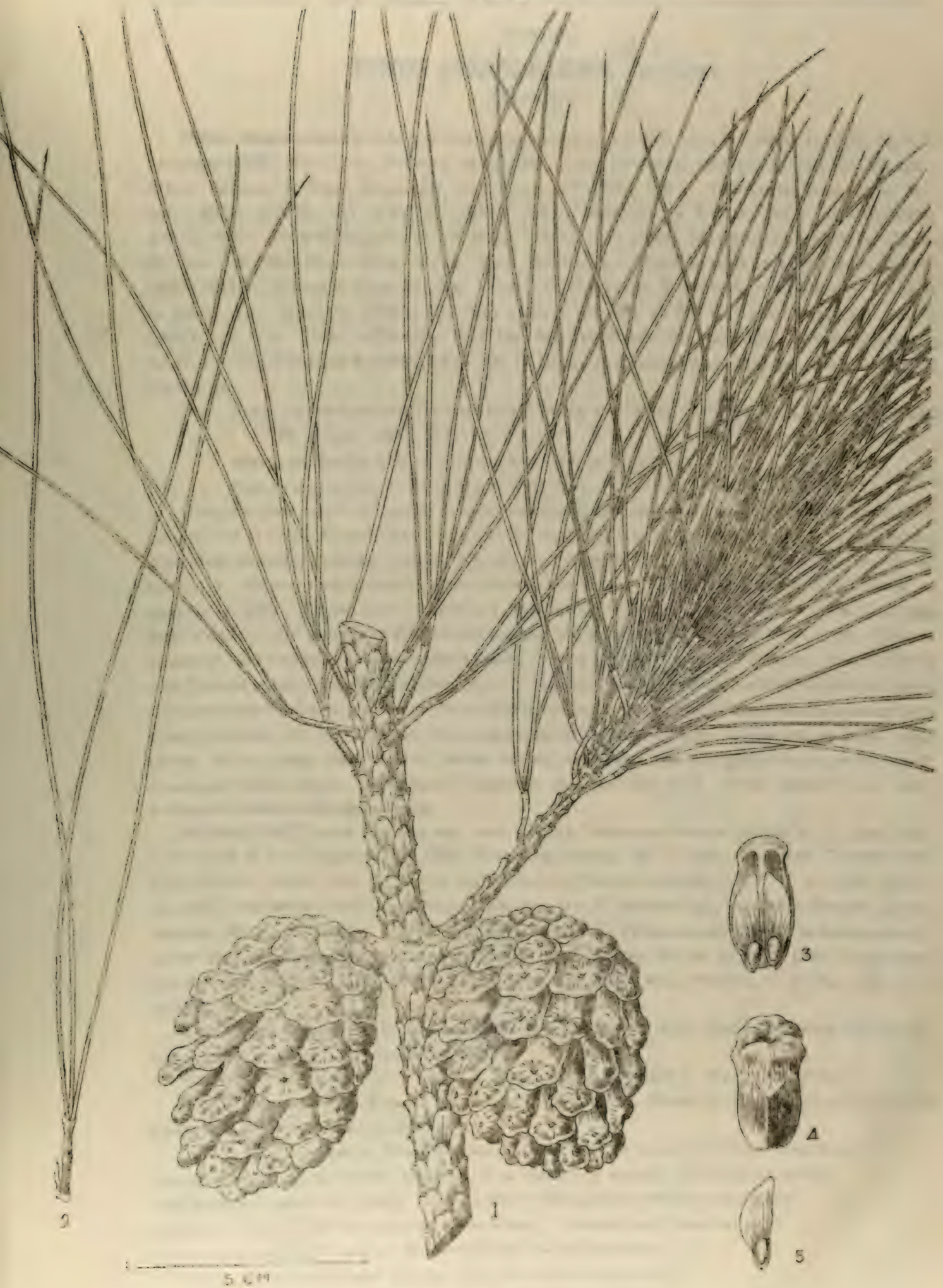
常綠喬木，高十公尺，稀達二十公尺，莖上部之樹皮紅色或紫紅色，成薄片脫落，莖基部之樹皮褐色或深褐色，深縱裂成不規則之厚條；小枝粗壯，圓筒形，紅褐色，粗糙，當年及二年生之枝具宿存之苞片。冬芽圓錐狀卵圓形，紅褐色，鱗片披針形，先端漸尖，邊緣膜質而白色，透明或成流梳形。葉針形，具細微鋸齒，長十二至二十公分，稀達二十五公分，常三枚為一簇；葉鞘管狀而宿存，長十至十五公厘，初為黃灰色，繼變深褐色，葉基部之苞片卵狀披針形，先端漸尖，白色或淡黃色，薄如膜質，邊緣成流梳形。花不詳。球果圓錐狀卵圓形，長七至九公分，初為淡黃色，繼變為咖啡褐色，鱗片長圓形，先端鈍形或圓形，先端之下部則變為窄形，鱗片之頂端有光澤，扁平或微凸起成脊狀，其先端凸起成尖形，於球果成熟時即脫落。種子卵圓形，黃褐色，連同其翅共長十八至二十二公厘。

此種產於峨眉山山麓及峨眉山西南之峨邊縣老木坪。

此種分佈於四川西南部，西康，雲南西部。

此種與馬尾松及紅皮松（亦名短葉松）親緣較近，其區別在此種之葉常三枚為一簇及其紅褐色而粗壯之枝。

圖解：1. 果枝（原大）； 2. 一簇之葉（原大）； 3. 鱗片之裏面及種子，（原大）； 4. 鱗片之表面（原大）； 5. 種子（原大）。



179. *Pinus yunnanensis* Franchet



Plate 180.

PINUS MASSONIANA Lambert.

Abietaceae

Pinus Massoniana Lambert, *Descrip. Genus Pinus*, I (1803), 17, t. 12; ed. 2, I (1828), 16, t. 8; ed. minor (1832), 20, t. 8.— Debeaux in *Act. Soc. Linn. Bordeaux*, XXX (1878), 109 (Fl. Shangh. 57).— Beissner in *Nouv. Giorn. Bot. Ital. n. ser. IV* (1897), 188.— Masters in *Journ. Linn. Soc. Bot.* XXVI (1902), 551; XXXVII (1906), 416.— Patschke in *Engler, Bot. Jahrb.* XLVIII (1912), 668.— Shaw in *Sargent, Pl. Wilson. I* (1911), 1; II (1914), 14; *Genus Pinus* (1914), 62, t. 20, figs. 176-178.— Chun, *Chin. Econ. Trees* (1921), 14.— Dallimore & Jackson, *Handb. Conif.* (1923), 414.— Chung in *Mem. Sci. Soc. China*, I (1924), 2 (*Cat. Trees & Shrubs China*).— Wilson in *Journ. Arn. Arb.* VII (1926), 48; VIII (1927), 89.— Hu in *Hu & Chun, Icon. Pl. Sin.* I (1927), 6, t. 6.— Chien in *Contrib. Biol. Lab. Sci. Soc. China*, III (1927), 28.— Handel-Mazzetti, *Symb. Sin.* VII, Lieferung 1 (1929), 16.— W. C. Cheng in *Contrib. Biol. Lab. Sci. Soc. China*, VI (1930), 12.

Pinus sineesis Lambert, *Descrip. Genus Pinus*, ed. Minor, I (1838), 47, t. 29.— Bentham, *Fl. Hongk.* (1861), 337.

Pinus canaliculata Miquel in *Journ. Bot. Neerland*, I (1861), 86.

Pinus Cavaleriei Leveille in *Fedde, Rep. Spec. Nov.* VIII (1910), 60.

Evergreen tree usually 20, rarely up to 30, metres high, tree-crown pyramidal or broadly ovate; bark purplish-red at first and changed to greyish-brown later, scaly or irregularly fissured into thin flakes; branchlets whorled, glabrous, yellowish-brown or yellowish-grey, terete, roughened by decurrent leaf-bases. Winter-buds cylindric, scales brown, membranous, lanceolate, acuminate, ciliate on its margin, reflexed. Leaves spirally arranged, needle-like, usually 2, rarely 3 in a bundle, 12-20 cm. long, slender, light green, serrulate on the margin; leaf-sheaths tubular, persistent, grey. Flowers unisexual, monoecious; staminate flowers yellow, in long, ellipsoid-oblong or cylindric, dense clusters with 3 bracts at base, stamens numerous, spirally arranged, anthers sessile, 2-celled, connective subrotund; pistillate flowers purple, solitary or several on the top of young branchlets with numerous spirally arranged scales, with bractlets and two anaphalous ovules at its base. Cones oblong-ovoid, dark-brown, 4-7 cm. long, short-stalked, scales oblong, apophysis flat or slightly ridged; umbo small, occasionally with a short, obtuse mucro, mucro on the posterior ones. Seeds about 6 mm. long, with an articulate membranous wing.

MOUNT OMEI: near Pao-ning-ssu, tree 15 high, staminate flowers yellow, *G. L. Chow*, Nos. 5649, 5754 & 5792, April to May 1942; Wan-hsing-chuang, *H. C. Chow*, No. 8489, October 1938; same locality, small tree 10 metres high, staminate flowers purplish-red, *T. C. Lee*, No. 5346B, March 27, 1940; same locality, on bare sandy slopes, tree 10 metres high, staminate flowers yellow, common, *W. P. Fang*, Nos. 13963 & 13964, April 1940; Fu-hu-ssu, alt. 680 m., in forests, tree 10 metres high, staminate flowers orange-yellow, *W. P. Fang*, No. 14154, April 16, 1940; Pao-kuo-ssu, tree 20 metres high, *W. P. Fang*, No. 13925, March 19, 1940; same locality, *C. Y. Yao*, No. 5169, itin 1939.

SZECHUAN: Chengtu, in forests, small tree 10 metres high, pistillate flowers dark-brown, common, *W. P. Fang*, 12060, April 4, 1938.

KWANGSI: without precise locality, *S. K. Lee*, No. 80994, and *C. Wang*, No. 39601.

Distribution: Shantung, Kiangsu, Chekiang, Kiangsi, Hupeh, Hunan, Szechuan, Yunnan, Kweichow, Kwangsi, Kwangtung, Fukien, Formosa.

This species is nearer to *Pinus tabulaeformis* Carriere of China and *Pinus densiflora* Siebold et Zuccarini of Japan. It differs, however, from these two species in having the slender, long leaves with marginal canals and longer brown cones with flat scales which are only slightly ridged on the apophysis. This is the commonest pine in China. It forms pure forest at the foot of Mount Omei. The wood is commonly used for house-building and fuel purposes..... *W. P. Fang*.

Fig. 1, a flowering branch (natural size); 2, a bract (enlarged 10 times); 3, a stamen (enlarged 10 times); 4, a fruiting branch (natural size); 5, the back of a scale (enlarged 2 times); 6, the inner side of a scale (enlarged 2 times); 7, a seed (natural size).

圖版一百八十

馬尾松

別名：松樹，青松，山松，樅樹，台灣赤松。

松科

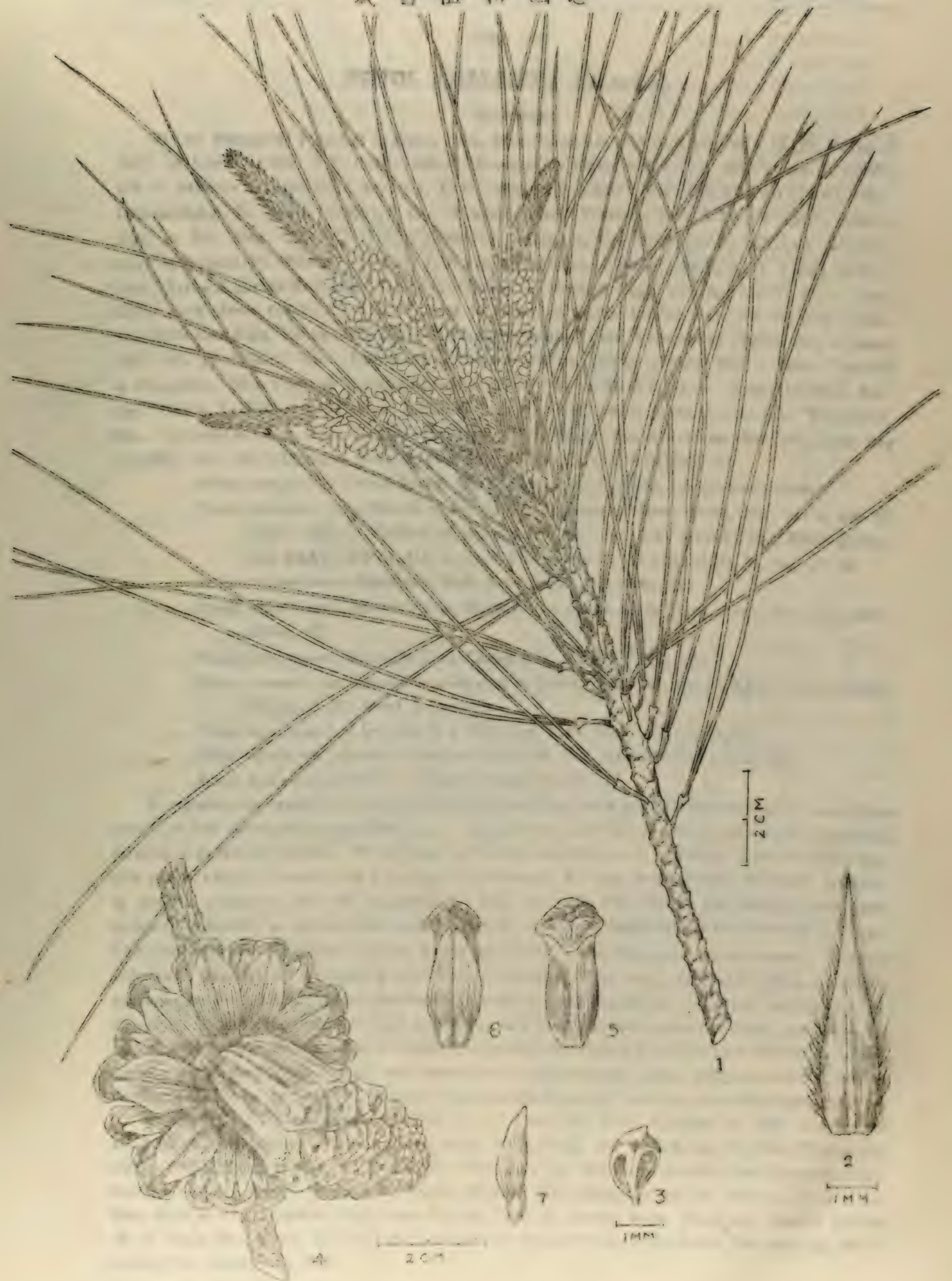
常綠喬木，高二十公尺，稀達三十公尺，樹冠塔形或闊卵形；樹皮初為紫紅色，繼變灰褐色，成小片狀或不規則之縱裂成薄片狀；小枝輪生，無毛，黃褐色或黃灰色，圓筒形，向下生長之葉基宿存致枝成粗糙之狀。冬芽圓錐形，鱗片褐色，質薄如薄膜，披針形，先端漸尖，邊緣具纖毛而反捲。葉螺旋形排列，針形，常二葉為一簇，稀三葉為一簇，長十至二十公分，纖細，淡綠色，邊緣具細小之鋸齒；葉鞘管狀，宿存，灰色。花單性，大小蕊花同株；小蕊花黃色，密集叢生成橢圓形或圓錐形之葇荑花序，基部具三苞片，小蕊多數，着生成螺旋形，花藥二室，不具花絲，藥隔亞圓球形；大蕊花紫色成球形花序，單生或數花序叢生於幼嫩小枝之先端，花序具多數螺旋形排列之鱗片，每鱗片外側具一苞片，鱗片內側之基部具二倒生之胚珠。球果長圓卵圓形，深褐色，長四至七公分，具短果梗，鱗片背面之頂端扁形或微凸起成脊狀，鱗片細小，稀具短鈍之尖頭。種子約長六公厘，具膜質而有關節之翅。

此種產於峨眉山之保寧寺，萬行莊，報國寺及伏虎寺等處。在海拔一千公尺以下，常極罕見。四月開花，秋後果可成熟。

此種分佈於山東，江蘇，浙江，江西，湖北，湖南，四川，貴州，雲南，廣西，廣東，福建及台灣等省。

此種與短葉松（亦名油松）及日本赤松相近，其區別在此種具長而纖細且邊緣有凹溝之葉及長形褐色之球果，球果鱗片之表面微具凸起。此種為松屬最普通之種類。木材可供建築及燃料之用。

圖解：1. 着花與葉之枝（原大）； 2. 苞片（放大十倍）； 3. 小蕊（放大十倍）； 4. 果枝（原大）； 5. 鱗片之背面示其頂端及鱗片（放大二倍） 6. 鱗片之裏面及種子（放大二倍）； 7. 種子（原大）。



180. *Pinus massoniana* Lambert



Plate 181.

PINUS ARMANDI Franchet.

Abietaceae

Pinus Armandi Franchet in Nouv. Arch. Mus. Paris, ser. 2, VII (1884), 95, t. 12 (Pl. David. I, 285); in Journ. de Bot. XIII (1899), 254.— Beissner in Nuov. Giorn. Bot. Ital. n. ser. IV (1897), 184.— Masters in Journ. Linn. Soc. Bot., XXVI (1902), 549; XXXV (1904), 582; XXXVII (1906), 415.— Clinton-Baker, Ill. Conif. I (1909), 6, t.— Elwes & Henry, Trees Gr. Brit. & Irel. V (1906), 1043.— Stapf in Bot. Mag. CXXXVI (1910), t. 8347.— Mottet in Rev. Hort. (1910), 423, pgs. 177-179.— Shaw in Sargent, Pl. Wilson. I (1911), 1; II (1914), 12; Genus Pinus, (1914), 30, t. 9, figs. 90-99.— Bean, Trees & Shrubs Brit. Isles, II (1914), 172, fig.— Wilson, Conif. Tax. Jap. (1916), 20.— Chun, Chin. Econ. Trees (1921), 11, t. 8.— Hers in Journ. N. China, Branch. Roy. As. Soc. LIII (1922), 113; Liste Ess. Lign. Honan (1922), 21.— Rehder in Bailey, Cult. Evergreens (1923), 308; in Journ. Arn. Arb. IV (1923), 119.— Dallimore & Jackson, Handb. Conif. (1923), 370.— Silva Tarouca & Schneider, Uns. Freiland Nadelholzk., ed. 2, (1923), 72, fig. 74, t. 2, fig.— Chung in Mem. Sci. Soc. China, I (1924), 2 (cat. Trees & Shrubs China).— Wilson in Journ. Arnold Arb. VII (1923), 49.— Hu in Hu & Chun, Icon. Pl. Sin. I (1927), 4, t. 4.— Handel-Mazzetti, Symb. Sin. VII, Liefer. ung 1 (1929), 16.— W.C. Cheng in Contrib. Biol. Lab. Sci. Soc. China, VI (1930), 9.

Pinus quinquefolia David, Journ. Trois. Voy. Chin. I (1875), 192 (nomen nudum).

Pinus koraiensis (non Siebold et Zuccarini). Beissner in Nuov. Giorn. Bot. Ital. n. ser. IV (1897) 184.— Masters in Journ. Linn. Soc. Bot., XXVI (1902), 550; XXXV (1904), 582; XXXVII (1906), 415; in Gard. Chron. ser. 3, XXXIII (1903), 34, figs. 18, 19.

Pinus scipioniformis Masters in Bull. Herb. Boiss. VI (1898), 270.

Pinus mandshurica Masters (non Murray, non Ruprecht) in Journ. Linn. Soc. Bot., XXVI (1902) 551.

Pinus Mastersiana Hayata in Gard. Chron. ser. 3, XLIII (1908), 194.

Pinus Armandi var. *Mastersiana* Hayata in Journ. Coll. Sci. Tokyo, XXV, art. 19 (1908), 215, fig. 8 (Fl. Mont. Formosa).

Pinus levis Lemeé et Leveille in Fedde, Rep. Spec. Nov. VIII (1910), 60.

Pinus excelsa var. *chinensis* Patschke in Engler, Bot. Jahrb. XLVIII (1912) 657.

Pinus Komarovi Leveille, Fl. Kony-Tcheou (1914), 112.

Evergreen tree usually 20, rarely up to 25, metres high, bark grey or brownish-grey; branchlets terete, at first olive-green or purplish-green, later grey or dark-brown, usually horizontally spreading forming a pyramidal crown. Winter-buds cylindric, reddish-brown, resinous. Leaves needle-like, pale green, usually 5, rarely 3 or more than 5, in a bundle, 8-17 cm. long, slender, serrulate, triangular in section, ventrally with 4-6 stomatiferous lines on each side, dorsal side smooth, resin ducts external, or medial, or external and medial, all three conditions sometimes in the leaves of the same branchlet; sheath deciduous, bracts linear-lanceolate, yellowish-green, membranous. Flowers unisexual, monoecious; staminate flowers yellow, cylindric, 2 cm. long, with spatulate scale at base, anthers notched; pistillate flowers subterminal, erect on stout branchlets, cylindric, purplish-brown. Cones cylindric-oblong, 8-20 cm. long, pendulous on a stout peduncle; scales obovate, apex tapering into a thick, acute point usually reflexed, apophysis broad-rhombic, yellowish or yellowish-brown, umbo at apex, dark brown, small and sometimes inconspicuous; seeds wingless reddish-brown, ovoid, 12 mm. long, compressed, shortly ridged around the edge, acute or roundish at both ends.

MOUNT OMEI: Ta-o-ssu, alt. 1103 m., H. C. Chow, No. 8640, October 16, 1938; Hou-tzu-po, alt. 1000 m., small tree with flowers in buds, W. P. Fang, No. 14336, May 10, 1940; Taping, alt. 1400 m., tree 15 metres high, T. C. Lee, No. 2785, July 12, 1940; same locality, tree 15 metres high, flowers yellow, W. P. Fang, No. 16661, May 22, 1941; Hsing-kai-ssu, alt. 1600 m., H. C. Chow, Nos. 8765 & 8821, October 1938; same locality, tree 15 metres high, staminate flowers yellow, W. P. Fang, No. 14036, April 8, 1940; southwest of Mount Omei, Opieh-shien, Nan-mu-ping, W. C. Cheng, No. 6343, June 1936.

SZECHUAN: Kuan-hsien, cultivated in a temple, W. P. Fang, No. 12195, April 9, 1938

SIKANG: Ningnan-hsien, T. T. Yu, No. 1389, in 1932.

SHANTUNG: Tsingtao, cultivated in a park, C. Y. Chiao, No. 2536, June 6, 1930.

Distribution: Shantung (cultivated), Shensi, Kansu, Western Szechuan, Sikang, Yunnan, Formosa; Japan.

This species is the only five-leaved Chinese pine. Therefore it may be easily recognized. It is near *Pinus excelsa* Wallich of the Himalayas and *Pinus parviflora* Siebold et Zuccarini of Japan. But from the former species it differs in having green branchlets which are covered with glands and the stouter cones whose scales are wider than those of the former species. From the latter species it differs in having leaves not twisted and the cylindrical-oblong cones with wingless seeds. The wood is very soft and suitable for house building and low grade furniture making purposes..... W. P. Fang.

Fig. 1, a fruiting branch (natural size); 2, staminate flowering branch (natural size); 3, staminate flowers and bracts (enlarged 5 times); 4, a stamen (enlarged 10 times); 5, 2 seeds and inner side of scale (natural size); 6, outer side of scale (natural size).

圖版一百八十一

華山松

別名：五葉松，五鬚松，白松，青松，果松。

松科

常綠喬木高二十公尺，稀達二十五公尺，樹皮灰色或褐灰色；小枝圓筒形，初為橄欖綠色或紫綠色，繼變灰色或深褐色，常平斜向伸展，成塔形樹冠。冬芽圓錐形，紅褐色。葉針形，淡綠色，常五葉為一簇，稀三葉或五葉以上為一簇，長八至十七公分，纖細，具細鋸齒，橫剖面成三角形，腹面具氣孔線四至六條，背面平滑，松脂管生於外緣或中央抑或外緣與中央均有之，此三種生法有時在同一小枝之葉中均有之；葉鞘脫落，苞片線狀披針形，黃綠色，膜質。花單性，大小蕊花同株；小蕊花黃色，成圓柱形之花序，長二公分，基部具匙形之鱗片，花藥二歧；大蕊花着生近於小枝之先端，直立，圓柱形，紫褐色。球果圓柱長圓形，長八至二十公分，下垂，具粗壯之短果梗；鱗片倒卵形，先端甚厚而成銳尖形，微反捲，鱗片背面之頂端闊斜方形，淡黃色或黃褐色，鱗片甚小，位於鱗片之先端，或稀不顯著，深紅褐色；種子無翅，紅褐色，卵圓形，長十二公厘，扁形，兩端銳形或微成圓形，邊緣具短脊紋。

本種產於峨眉山之大峨寺，獼子坡，大坪及新開寺。峨眉山西南之峨邊縣楠木坪亦產之。產地常在海拔一千至一千六百公尺。

本種分佈於陝西，甘肅，山東，湖北，四川，西康，台灣；日本。

在陝西華山極為習見，故名華山松。五葉成一簇之松樹我國原產者僅此一種，故極易辨別。與原產喜馬拉雅山（雲南亦產之）之喬松及日本之五鬚松（我國庭園間有栽培者）親緣較近。與喬松之區別則在此種之小枝綠色而被腺體及粗體之球果及較寬大之鱗片。與日本五鬚松之區別，在此種之葉不扭折而球果成錐狀長圓形，且其種子無翅。木材較軟，可供建築及製造普通傢具之用。

圖解：1. 着果及葉之枝（原大）；2. 小蕊花枝（原大）；3. 小蕊花及基部之苞片（放大五倍）；4. 小蕊（放大十倍）；5. 鱗片之裏面及種子（原大）；6. 鱗片之背面（原大）。



181. *Pinus Armandi* Franchet



CUNNINGHAMIA LANCEOLATA (Lambert) Hooker.

Taxodiaceae.

Cunninghamia lanceolata (Lambert) Hooker in Bot. Mag. LIV (1827), t. 2743.- Rehder et Wilson. In Sargent, Pl. Wilson. II (1914), 50.- Chun, Chin. Econ. Trees (1921), 31, pl. 11.- Wilson in Journ. Arn. Arb. VII (1926), 57.- Rehder, Manual Cult. Trees & Shrubs (1927), 27.- Handel-Mazzetti, Symb. Sin. VII, Lieferung I (1929), 17.

Pinus Abies Loureiro (non Linnaeus), Fl. Cochln. (1780), 579, Syn. exclud.

Pinus lanceolata Lambert, Descrip. Pinus, (1803) 52, t. 34.

Abies lanceolata Poiret in Lamarck, Encycl. Meth. VI (1804), 523.

Belis jaculifolia Salisbury in Trans. Linn. Soc. VIII (1807), 318.

Cunninghamia sinensis Brown apud Richard, Conf. (1826), 80, t. 18, fig. 3.- Link in Linnaea, XV (1841), 540.- Stebold & Zuccarini, Fl. Jap. II (1844), 7, t. 103, 104; in Abh. Akad. Muench. IV. pt. III (1846), 235 (Fl. Jap. Fam. Nat. II. 111).- Bentham, Fl. Hongk. (1861), 337.- Miquel in Ann. Mus. Ludg.-Bat. III (1867), 167; Prol. Fl. Jap. (1867), 331.- Parlatore in De Candolle, Prodr. XVI. pt. II (1868), 324.- Debeaux in Act. Soc. Linn. Bordeaux, XXX (1875), 109 (Fl. Shangh. 57).- Masters in Journ. Linn. Soc. Bot. XVIII (1831), 502; XXVI (1902), 548; XXXVII (1906), 415.- Franchet in Nouv. Arch. Mus. Paris, ser. 2, VII (1884), 181 (Pl. David. I. 281); in Journ. de Bot. XIII (1899), 262.- Beissner in Nuov. Giorn. Bot. Ital. n. ser. IV (1897), 185.- Pritzl in Engler, Bot. Jahrb. XXIX (1900), 218.- Shirasawa, Icon. Ess. For. Jap. I (1900), 23, t. 9, fig. 1-24.- Matsumura in Bot. Mag. Tokyo, XV (1901), 139.- Matsumura & Hayata in Journ. Coll. Sci. Tokyo, XXII (1906), 399 (Enum. Fl. Formos.).- Pampanini in Nuov. Giorn. Bot. Ital. n. ser. XVII (1910), 231; XVIII (1911), 105.- Dunn & Tutcher in Kew Bull. Misc. Inform. add. ser. X (1912), 256 (Fl. Kwangtung & Hongkong).- Patschke in Bot. Jahrb. XLVIII (1913), 672.- Bean, Trees & Shrubs Hard. Brit. Isl. I (1929), 441, (5th edit.).

Belis lanceolata Sweet, Hort. Brit. (1830), 475.

Raxopitys Cunninghamii Nelson. Pinaceae (1866), 97.

Araucaria lanceolata Hort. ex Parlatore in De Candolle, Prodr. XVI, pt. II (1868), 433 (quasi synonym. *Cunninghamiae sinensis*).

Cunninghamia sinensis var. *prolifera* Leme et L. velle in Monde des Pl. (1914), 20.

Evergreen tree usually 15, rarely up to 20, metres high, trunk very straight, bark longitudinally fissured and scaly, outer bark brownish, inner bark red; branches short, whorled, horizontally spreading, those of the current year angular, green, those of more than one year old terete, greenish-grey. Leaves persistent, spirally arranged, usually twisted at the base into two ranks, linear or linear-lanceolate, acuminate, 2.5-4 cm. long, 3-4 mm. broad, usually curved, minutely serrulate on the margin, upper surface deep green, glabrous, lower surface pale green, with two broad white stomatiferous bands, midrib obsolete above, slightly raised below. Flowers unisexual, monoecious; staminate flowers short-stalked, cylindric-oblong, numerous, clustered on the apex of branchlets and its base with numerous acute bracts, stamens spirally arranged, connective subrotund, brown, irregularly serrulate on its margin, with 3 or 4 pendulous elliptic anthers at its base, pollen grains yellow; pistillate flowers globose, 1 to 3 at the end of branchlets, purplish green, with numerous imbricate scales whose apex is acuminate and pointed, serrulate on the margin, ovules 3 at inner side of the scale. Cone subglobose, 3-4 cm. long, 3 cm. in diameter, short-stalked, pendulous, scales coriaceous, broadly ovate, serrulate, apex acuminate, with stiff point 2 mm. long, and with 3 seeds at its inner side; seeds flat or ovate-oblong, dark-brown, narrowly winged, cotyledons 2.

MOUNT OMEI: Kwan-o-chang, tree 15 metres high, staminate flowers brownish-yellow, C. L. Chow, No. 5594, March 25, 1942; Hung-chu-shan, W. C. Cheng, No. 15029, March 1940; Pao-kuo-ssu, alt. 500 m., small tree 5 metres high, W. P. Fang, No. 13697, November 13, 1939; same locality small tree 5 metres high, staminate flowers yellow, C. L. Chow, No. 5508, March 15, 1942; Hung-chun-ping, alt. 1147 m., H. C. Chow, No. 8010, August 5, 1938.

SZECHUAN: Chengtu, Sha-ho-pu, in forests, small tree 8 metres high, *W. P. Fang*, Nos. 13201 & 13293, December 1938 to April 1939; same locality, *C. Y. Wang*, No. 7547, November 30, 1943.

KWANGSI: without precise locality, *H. Y. Liang*, No. 66648.

Distribution, Kiangsu, Chekiang, Anhwei, Kiangsi, Hupeh, Szechuan, Sikang, Hunan, Kweichow, Yunnan, Fukien, Kwangtung, Kwangsi.

This species is very common at the foot of Mount Omei wherat it was limited. Owing to the destruction of the natural vegetation and the reforestation of the recent years it has been commonly cultivated at the middle slopes of this mountain up to 2000 metres above the sea level. Its wood is commonly used for the telegraphic pillars, the building of houses and the making of furniture.....
.....W. P. Fang.

Fig. 1, a flowering and fruiting branch (natural size); 2, lower surface of leaf (enlarged 2 times); 3, a staminate flower with bract (enlarged 10 times); 4, inner side of a stamen (enlarged 20 times); 5, outer side of a stamen (enlarged 20 times); 6, a scale with 3 ovules at its inner side (enlarged 3 times); 7, inner side of scale (enlarged 2 times); 8, outer side of a scale (enlarged 2 times); 9 & 10, seeds (enlarged 5 times).

圖版一百八十二

沙木 (別名: 沙樹, 杉木, 香杉木。)

杉科

常綠喬木高十五公尺，稀達二十公尺，幹直而樹皮常縱裂成薄片，表面之樹皮褐色，裏面之樹皮紅色；枝短，輪生，常平斜向伸展，當年者綠色並現稜角，多年者圓筒形，灰綠色。葉宿存，着生於枝上成螺旋形，基部常捲折，致成兩行，線形或線狀披針形，先端漸尖，長二公分半至四公分，寬二至四公分，常彎曲，邊緣具細鋸齒，表面深綠色，無毛，背面淡綠色，具二寬形之白色氣孔帶，中肋在葉表面不顯著，在葉背面凸出。花單性，大小蕊花同株；小蕊花具短花梗，多數花叢生於先端成錐狀長圓形之葇荑花序，基部具多數銳尖之苞片，小蕊着生成螺旋形，藥隔亞圓形，褐色，邊緣具不規則之細鋸齒，基部具三四橢圓形而下垂之花藥，花粉粒黃色；大蕊花聚集成圓形之花序，常係一至三花序着生於小枝之先端，具多數覆瓦狀排列之鱗片，鱗片之先端漸尖形，而其邊緣則具細鋸齒，其內側基部各具三胚珠。球果亞圓球形，長三至四公分，直徑三公分，下垂，具短果梗，鱗片革質，闊卵形，邊緣具細鋸齒，先端漸尖並具長二公厘而銳利之尖頭。鱗片內側具三種子；種子扁形或卵狀長圓形，深褐色，具窄翅，子葉二枚。

此種產於峨眉山之山麓，極為普遍；如在冠峨場，洪珠山，報國寺洪椿坪及大坪等處，常成純粹沙木林；種於廟側或路旁者亦多。前僅限於山麓。今則山上原始森林，毀者愈多。造林時均以此種生長迅速，山之中部如九老洞，華嚴頂及蓮花石等處，已栽培甚多。

此種之樹幹挺直，故為電桿之絕好材料。其木材常用以建築房屋及製造傢具。

圖解： 1. 着花及果之枝 (原大)； 2. 葉之背面 (放大二倍)； 3. 小蕊花及苞片 (放大十倍)； 4. 小蕊之裏面 (放大二十倍)； 5. 小蕊之表面 (放大二十倍)； 6. 鱗片之裏面及其胚珠 (放大三倍)； 7. 鱗片之裏面 (放大二倍)； 8. 鱗片之表面 (放大二倍)； 9 及 10. 種子 (放大五倍)。



182. *Gunninghamia lanceolata* (Lambert), Hooker



Plate 183.

CRYPTOMERIA JAPONICA D. Don.

Taxodiaceae.

Cryptomeria japonica D. Don In Trans. Linn. Soc. XVIII (1841), 166, t. 13, fig. 1.- Hooker, Icon. Pl. VII (1844), t. 668.- Siebold & Zuccarini in Abh. Akad. Muench. IV. pt. III (1846), 234 (Fl. Jap. Fam. Nat. II. 119).- Miquel in Ann. Mus. Ludg.-Bat. III (1867), 168; Prodr. Fl. Jap. (1867), 332; in Siebold & Zuccarini, Fl. Jap. II (1870), 49, t. 124, 124B.- Parlatore in De Candolle, Prodr. XVI. pt. II (1868), 438.- Debeaux in Act. Soc. Linn. Bordeaux, XXX (1875), 109 (Fl. Shangh. 57).- Franchet & Savatier, Enum. Pl. Jap. I (1878), 469.- Masters in Journ. Linn. Soc. XVIII (1881), 497; XXVI (1902), 544; XXXVII (1906), 413.- Franchet in Nouv. Arch. Mus. Paris, ser. 2, VII (1884), 101 (Pl. David. I. 291).- Sargent in Garden & Forest. VI (1893), 443, fig. 66; For. Fl. Jap. (1894), 74, t. 24.- Pritzell in Engler, Bot. Jahrb. XXIX (1900), 218.- Shirasawa, Icon. Ess. For. Jap. I (1900), 24, t. 9, fig. 25-42.- Pampanini in Nuov. Giorn. Bot. Ital. n. ser. XVII (1910), 231; XVIII (1911), 105.- Patschke in Engler, Bot. Jahrb. XLVIII (1913), 672.- Rehder & Wilson in Sargent, Pl. Wilson. II (1914), 52.- Chun, Chin. Econ. Tress (1921), 33.- Rehder, Manual Cult. Trees & Shrubs (1927), 33.- Bean, Trees & Shrubs Hard. Brit. Isl. I (1929), 438, 2 pl. (6th edit.).- Dallimore & Jackson, Handb. Conif. (1931), 180, fig. 35 (2nd edit.).

Cupressus japonica Linnaeus f., Suppl. (1781), 421.- Thunberg, Fl. Fl. Jap. (1784), 265.

Taxodium japonicum Brongniart in Ann. Sci. Nat. XXX (1833), 183, excludenda var. *heterophylla*.

Cryptomeria Fortunei Otto & Dietrich in Allg. Gartenz. (1853), 234.

Evergreen tree, 7-10, rarely up to 20, metres high; bark reddish-brown, peeling off in long stripes; branchlets whorled, horizontally spreading or slightly pendulous, terete, green or yellowish-green, glabrous. Buds small, conical. Leaves spirally arranged in 5 vertical ranks, persistent for 4 or 5 years, green, glabrous, awl-shaped, 1-2 cm. long, incurved, tapering or obtuse at the apex, dilated at the base and clasping the branchlets, entire on the margin, keeled and stamiferous on both surfaces. Flowers small, unisexual, monoecious, staminate and pistillate flowers on different parts of the same branch, staminate flowers in cylindric clusters from the axils of leaves and terminal or subterminal on the branchlets, scales imbricate, acute or obtuse, concave, yellowish, glabrous, anthers yellow, pollen-sacs 3-5, inserted at the base of scale; pistillate flowers in subglobose clusters, with 20-30 peltate woody scales, ovules 3-5 to each scale. Fruits brown, subglobose cones, 1-1.5 cm. long and in diameter, terminal on branchlets, ripening the first year and remaining on the branchlets for one or more years; woody scales 20-30, brown, peltate, centrally attached to the axis, with pointed processes at the apex, bract adnate the scale for its greater part and its apex recurved on the outer surface of scales; seeds 2-5 to a scale, brown, triangular or triangular-oblong, 4-6 mm. long, 2-3 mm. broad, both edges narrowly winged.

MOUNT OMEI: Fu-hu-ssu, alt. 560 m., C. L. Chow, without number, April 1941; Hung-chun-ping, alt. 1150 m., H. C. Chow, No. 9029, May 1938.

SZECHUAN: Chengtu, cultivated tree 10 metres high, W. P. Fang, No. 12011, March 3, 1938; Kuan-hsien, Mt. Tsiang-cheng, S. S. Chien, No. 5136, April 4, 1936.

Distribution: Kiangsu, Chekiang, Anhwei, Kiangsi, Hupeh, Szechuan, Kweichow, Yunnan, Japan.

This monotypic species is commonly cultivated at the temple grounds on the foot of Mount Omei.

..... W. P. Fang.

Fig. 1, a flowering and fruiting branch (natural size); 2, a leaf (enlarged 5 times); 3, a stamen (enlarged 10 times); 4, staminate flowers (enlarged 8 times); 5, scales and bracts (enlarged 10 times); 6, seed (enlarged 2 times).

圖版一百八十三

孔雀杉

別名：榧杉，密條杉，寶樹。

杉科

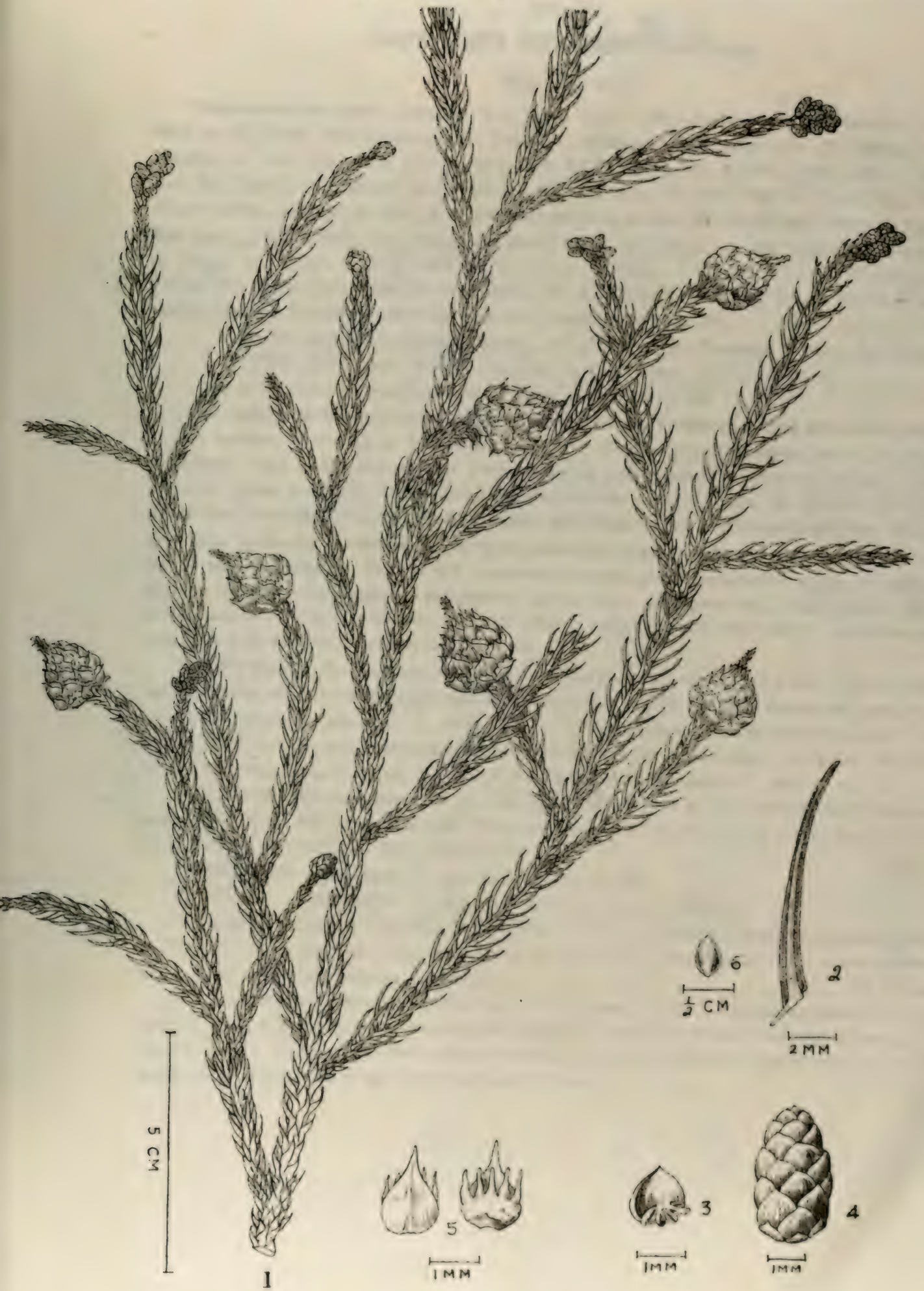
常綠喬木，高六至十公尺，稀達二十公尺，樹皮紅褐色，常成長帶狀而脫落；枝平斜向伸展或略下垂，圓柱形，綠色或黃綠色，光滑無毛。芽小，圓錐形。葉螺旋形生長，排成五縱列，宿存至四五年，綠色，光滑無毛，錐形，長一至二公分，略彎曲，先端尖銳或鈍形，基部膨大，表背兩面均凸出並具氣孔。花小，單性，大小蕊花同株；且常生於同一枝上，小蕊花叢生成圓柱形，生於枝之頂端或近於頂端，鱗片覆瓦狀排列，銳尖或鈍形，凹形，淡黃色，光滑無毛，花藥黃色，花粉囊三至五枚，着生於鱗片之基部；大蕊花叢生成亞圓球形，具盾形木質鱗片二十至三十枚，每鱗片具胚珠三五枚。果為褐色亞圓球形之球果，長與直徑均約一至一公半，着生於枝之頂端，當年成熟，宿存於枝上一至數年。木質盾狀之鱗片變成褐色，柄着生於其中部，先端具尖形之刺狀凸起，苞片之大部與鱗片合生，但其先端反捲向外；每鱗片具二至五種子，種子褐色，三角形或三角長方形，長四至六公厘，寬二至三公厘，兩邊具窄翅。

本種產於峨眉山之伏虎寺及洪椿坪等處。

本種分佈於江蘇，浙江，安徽，江西，湖北，四川，貴州，雲南等省以及日本。

本屬僅此一種，在峨眉山山麓，灌縣之青城山及成都，均常種於寺廟之庭園。

圖解： 1. 着花及果之枝（原大）； 2. 葉（放大五倍）； 3. 小蕊（放大十倍）； 4. 小蕊花之花叢（放大八倍）； 5. 鱗片及苞片（放大十倍）； 6. 種子（放大二倍）。



183. *Cryptomeria japonica* D. Don



Plate 184.

CUPRESSUS FUNEBRIS Endlicher.

Cupressac. ac.

Cupressus funebris Endlicher. Syn. Conif. (1847), 58.—Parlatore in De Candolle, Prodr. XVI, pt. II (1868), 471.—Debeaux in Act. Soc. Linn. Bordeaux, XXX (1875), 110 (Fl. Shangh. 52).—Masters in Journ. Linn. Soc. XVIII (1881), 496; XXVI (1902), 540; XXXVII (1906), 412; in Journ. Bot. XLI (1903), 252.—Kantiz in Noven. Gynejit. Szechenyi, II (1891), 247 (Pl. Enum. 33); Wiss. Ergeb. Reise Szechenyi, II (1896), 738.—Franchet in Journ. de Bot. XIII (1899), 243.—Pritzl in Engler, Bot. Jahrb. XXIX (1900), 219.—Pavolini in Nuov. Giorn. Bot. Ital. n. ser. XV (1908), 400.—Patschke in Engler, Bot. Jahrb. XLVIII (1913), 675, t. 8, fig. 6.—Rehder et Wilson. in Sargent Pl. Wilson. II (1914), 53.—Chun, Chin. Econ. Trees, (1921), 37.—Handel-Mazzetti, Symb. Sinicae, VII, Lieferung I (1929), 5.—Bean, Trees & Shrubs Hard. Brit. Isl. I (1929), 443 (5th Edit.).

Cupressus pendula Abel (non Thuaberg, nec L'Heritier) in Staunton, Embassy to China, II (1797), 235 (nomen nudum).—Lambert, D. scrip. Pinus, I (1803), 97, t. 43.

Cupressus funebris gracilis Carrlere, Traite Conif. (1867), 162.

Tree, usually 15, rarely up to 25, metres high; bark brown, smooth or peeling off in shred-shaped pieces; branches ascending or horizontal, branchlets slender, yellowish-brown, terete, vertically pendulous, those of the current year green, 4-angled with minutely denticulate leaves. Leaves opposite, green, scale-like, 2 mm. long, tapering to a fine point, in 4-rows, the points of the lateral leaves free, spreading, and the points of upper and lower leaves closely appressed, flat. Flowers unisexual, monoecious, terminating on short branchlets; staminate flowers erect, oblong, 5-7 mm. long, 2 mm. in diameter, stamens 4-8, pendulous from the peltate connective, anther-cells yellow, globose; pistillate flowers green, subglobose, scales acute, with numerous ovules inside. Fruits globose cones, 1.5 cm. in diameter, with 8-9 peltate scales, usually mucronulate at the flat apex, each scale with numerous narrowly winged seeds.

MOUNT OMEI: Pao-ning-ssu, alt. 470 m., on grassy slopes, tree 15 metres high, bark purplish-brown, peeling off in shred-shaped pieces, staminate flowers yellow, pistillate flowers not open, fruits subovoid, greenish, common, *W. P. Fang*, No. 13740, December 19, 1939; near Fu-hu-ssu, *T. H. Tu*, No. 411, in 1935; near Shun-yang-tien, alt. 1095 m., tree 15 metres high, *C. L. Chow*, No. 6184, May 3, 1942; Hung-chun-ping, alt. 1147 m., *H. C. Chow*, No. 8051, August 9, 1938.

SZECHUAN: Wu-shan-hsien, *K. L. Chu*, Nos. 1480, 1939 & 1953, without date; Nauchuan-hsien, *Y. C. Yang*, No. 3055, May 1939; Chien-yang-hsien, *S. S. Chien*, No. 5211, April 21, 1936; Kuan-hsien, *S. S. Chien*, No. 5847, February 23, 1937.

SIKANG: Tien-chuan-hsien, *K. L. Chu*, No. 3995, in 1936.

CHEKIANG: Tunglu-hsien, *S. Chen*, No. 1930, September 1, 1933.

Distribution: Kiangsu, Chekiang, Kiangsi, Hupeh, Hunan, Szechuan, Kweichow, Sikang, Yunnan.

This species is commonly cultivated around the temples and tombs on the lower slopes of Mount Omei. It is colloquially called as "Peh-shu.".....*W. P. Fang*.

Fig. 1, a Pistillate flowering and fruiting branch (natural size); 2, a staminate flowering branch (natural size); 3, a staminate flower (enlarged 5 times); 4, a pistillate flower (enlarged 5 times); 5, a stamen showing its connective and anthers (enlarged 20 times); 6, the inner side of scale with ovules (enlarged 10 times); 7, a winged seed (enlarged 10 times).

圖版一百八十四

柏 樹

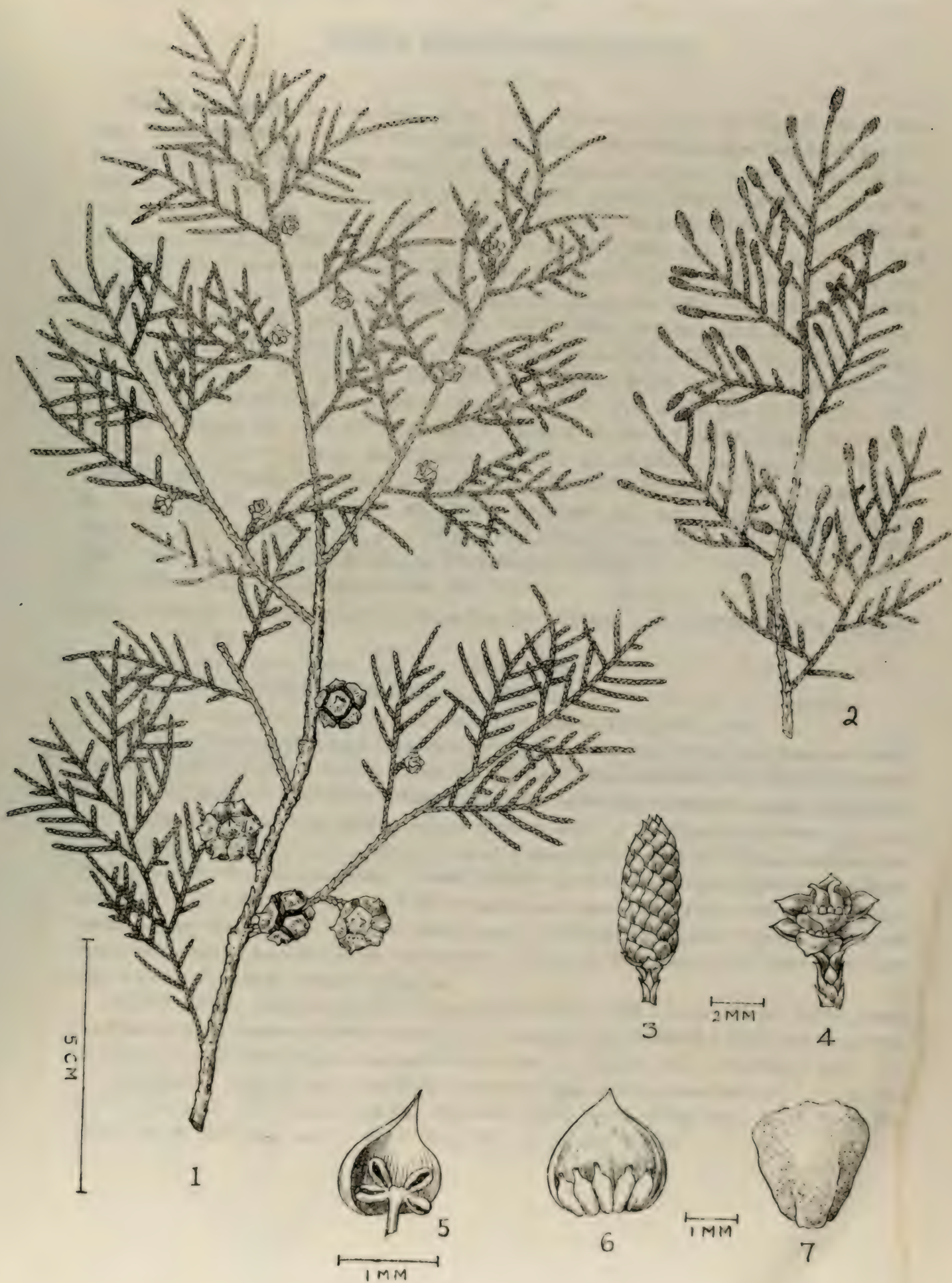
柏 科

常綠喬木高十五公尺，稀達二十五公尺；樹皮深褐色，平滑或成長帶狀之薄片而脫落；枝向上或平斜伸展，小枝纖細，圓筒形，黃褐色，垂直下垂，當年之枝綠色，四稜形，具齒狀之小葉。葉對生，成四行，綠色，鱗片形，長二公厘，先端銳尖成針狀，在枝兩側之葉上部離枝向外伸展，在枝腹面與背面之葉扁形且緊貼於枝。花單性，大小蕊花同株，着生於小枝之先端；小蕊花直立，長圓形，長五至七公厘，直徑二公厘，小蕊四至八本，下垂於盾狀之藥隔，花藥黃色，圓球形；大蕊花綠色，亞圓球形，鱗片銳形，具多數之胚珠位於鱗片之內側。球果圓球形，直徑十五公厘，具盾狀之鱗片六至九枚，扁形鱗片之先端具小尖頭，每鱗片之內側着生多數窄而具翅之種子。

此種產於峨眉山之保寧寺，報國寺，伏虎寺，純陽殿及洪椿坪等處，在海拔四百七十至一千二百公尺間極為習見。在寺廟及墳園旁邊栽培甚多。

此種分佈於江蘇，浙江，江西，湖北，湖南，四川，貴州，西康，雲南等省。

- 圖解： 1. 着大蕊花及果實之枝（原大）； 2. 小蕊花枝（原大）； 3. 小蕊花（放大五倍）； 4. 大蕊花（放大五倍）； 5. 小蕊與其藥隔及花藥（放大二十倍）； 6. 鱗片之內側及胚珠（放大十倍）； 7. 具翅之種子（放大十倍）。



184. *Cupressus funebris* Endlicher



THUJA ORIENTALIS Linnaeus

Cupressaceae.

Thuja orientalis Linnaeus, Spec. (1753), 1002.- Thunberg, Fl. Jap. (1784), 226.- Abel, Narr. Journ. China, (1818), 145.- Wallfisch, Cat. (1828), No. 6047.- Bunge in Mem. Div. Sav. Acad. Sci. St.-Petersb. II (1833), 137 (Enum. Pl. Chin. Bor. 63).- Turczaninow in Bull. Soc. Nat. Moscou, X. No. VII (1837), 157.- Siebold & Zuccarini, Fl. Jap. II (1844), 31, t. 118; in Abh. Acad. Munch. IV. pt. III (1846) 234 (Fl. Jap. Fam. Nat. II. 110).- Ledebour, Fl. Ross. III. pt. II. (1849-51), 680.- Masters in Journ. Linn. Soc. XVIII (1881), 488; XXVI (1902), 640; XXXVII (1906), 412.- Hooker f., Fl. Brit. India V. (1890), 644.- Franchet in Journ. de Bot. XIII (1899), 106.- Faber in Denkschr. Entwickel. Kiautschou, (1898), 27.- Pritzl in Enger, Bot. Jahrb. XXIX (1900), 219.- Matsumura in Bot. Mag. Tokyo, XV (1901), 137.- Gilg in Engler, Bot. Jahrb. XXXIV. beibl. LXXV (1904), 16.- Matsumura & Hayata in Journ. Coll. Sci. Tokyo, XXII (1906), 401 (Enum. Pl. Formosa).- Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. VII. 60 (1907), No. 17926.- Diels in Wiss. Ergeb. Exped. Filchner China Tibet, X (1908), 247.- Pampanini in Nuov. Giorn. Bot. Ital. n. ser. XVII (1910), 232; XVIII (1911), 106.- Patschke in Engler, Bot. Jahrb. XLVIII (1913), 675, t. 8, fig. 5.- Rehder & Wilson in Sargent, Pl. Wilson. II (1914), 53.- Loesener in Beih. Bot. Centralbl. XXXVII. abt. II (1919), 84.- Bailey, Gent. Herb. I (1920), 10.- Hers in Journ. N. China Branch R. As. Soc. LIII (1922), 116; Liste Ess. Lign. Honan (1922), 31.- Chun, Chin. Econ. Trees, (1921), 38.- Rehder in Journal Arn. Arb. IV (1923), 125.- Wilson in Journ. Arn. Arb. VII (1926), 62, 71, pl. 1.- Bean, Trees & Shrubs, Hard. Brit. Isl. II, (1929), 587.- (5th edit.).- Handel-Mazzetti, Symbolae Sinicae, VII, Lieferung 1 (1929), 4.

Thuja acuta Mbench, Meth. (1974), 692.

Cupressus Thuia Targioni-Tozzetti, in Ann. Mus. Firenze, I. pt. II (1808), 62 (Obs. Bot. Dec. II. 52).

Platyclusus stricta Spach, Hist. Veg. XI (1842), 335.

Biota orientalis Endlicher, Syn. Conif. (1847), 47.

Thuja orientalis f. *Kawaii* Hayata in Bot. Mag. Tokyo, XXXI (1917), 118.

Tree about 15 metres high; bark brown or reddish brown, thinly fissured and scaly; branches widely spreading and curving upward, forming a pyramidal crown, branchlets brownish-grey, flattened disposed in one vertical plane. Leaves green, decussate, scale-like, glandular on the back, those of the middle side closely appressed and overlapping, usually grooved; those of the lateral side ending in a free, rather spreading point. Flowers monoecious, terminal, staminate flowers yellow, in oblong-ovoid catkins, with 12 decussate orbicular connectives, each with 2 anthers; pistillate flowers green, in subglobose head, composed 3 pairs of fleshy scales, each with 2-3 ovules at the inner side. Fruits erect, at first fleshy, bluish, then becoming woody, ellipsoid, woody cones, 12-25 mm. long; scales 6, rarely 8, thick and woody with a hooked horn-like spines near the apex, the upper scales sterile, the lower scales each bears 2 seeds; seeds large, rounded, wingless.

MOUNT OMEI: Omei-hsien, H. C. Chow, No. 9377, in 1938; Tu-chu-chih, alt. 450 m., small tree 5 metres high, staminate flowers yellow, W. P. Fang, No. 18138, March 2, 1942; Shun-yang-tien, alt. 1096 m., tree 14 metres high, staminate flowers yellow, C. L. Chow, No. 6184, May 3, 1940.

SZETCHUAN: Chengtu, cultivated in the University, small tree 5 metres high, W. P. Fang, No. 12036, March 22, 1938; Wang-kiang-lau, cultivated, small tree 7 metres high, W. P. Fang, No. 12036, May 5, 1943; same locality, W. P. Fang, No. 19226, May 6, 1944.

Distribution: Manchuria, Hopeh, Shantung, Honan, Shensi, Kansu, Hupeh, Szechuan, Korea, Japan.

This species is a native of north-eastern China and has been commonly cultivated as a very beautiful garden and tomb tree in various provinces of China. It is colloquially named as "Chieh-peh." W. P. Fang.

Fig. 1, a flowering and fruiting branch (natural size); 2, a young branchlet with staminate flower (enlarged 8 times); 3, staminate flowers (enlarged 10 times); 4, a connective with 2 anthers (enlarged 15 times); 5, a longitudinal section of pistillate flower (enlarged 4 times); 6, a cross section of pistillate flower (enlarged 4 times).

圖版一百八十五

側柏

柏科

常綠喬木高十五公尺；樹皮深褐色或紅褐色，淺縱裂而成薄片脫落；枝平斜伸展，略向上彎曲，成塔形樹冠，小枝灰褐色，扁形，常伸展成垂直之平面，葉綠色，成對互生，鱗片狀，背面具腺點，大小蕊花異株，頂生，小蕊花序長方卵形，黃色，上具十二本相互對生之圓形藥隔，每隔有花藥兩個，大蕊花序綠色，略呈圓形，具三對肉質鱗片，每鱗內側有二至三枚胚珠，球果直立，初時肉質，帶藍色，漸熟則變木質，橢圓形，長十二至二十五公厘，果鱗六枚，間或八枚，肥厚成木質，先端具帶鈎之角狀刺，上部果鱗不具種子，下部者各有種子二枚；種子大而圓，無翅。

此種產峨眉山，由平地至一千公尺左右皆有之，花期在三月至五月之間。成都平原多栽培為觀賞樹。

此種分佈省區遍歷東三省，河北，山東，河南，陝西，甘肅，湖北，四川以及朝鮮日本等處。

此種本為我國東北部所產，現已遍植全國各省，用作庭園植物或墓地蔭樹，俗名側柏。

圖解： 1.着花果之枝（原大）； 2.着小蕊花之幼枝（放大八倍）； 3.小蕊花（放大十倍）； 4.藥隔及其二枚花藥（放大十五倍）； 5.大蕊花之縱剖面（放大四倍）； 6.大蕊花之橫剖面（放大四倍）。



185. *Thuja orientalis* Linnaeus

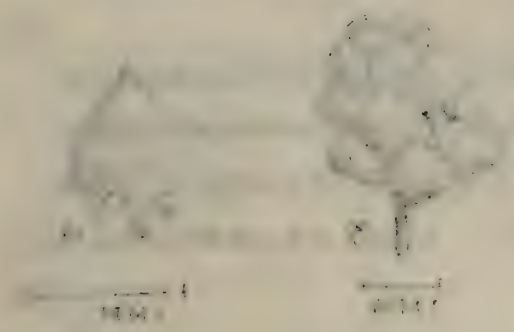


Plate 186.

JUNIPERUS CLINENSIS Linnaeus.

Cupressaceae.

Juniperus chinensis Linnaeus, Mant. (1767), 127.- Roxburgh, Fl. Ind. III (1832), 839 (2nd edit.).- Bunge in Mem. Sav. Etr. Acad. Sci. St. Petersburg, II (1823), 137 (Enum. Pl. Chin. Bot. 63).- Stebold & Zuccarini in Abh. Akad. Munch. IV. pt. III. (1846), 233 (Fl. Jap. Fam. Nat. II 109).- Miquel in Ann. Mus. Lugd.-Bat. III. (1867), 167; Profl. Fl. Jap. (1867), 331; in Stebold & Zuccarini, Fl. Jap. II, (1870), 58, t. 126, 127, fig. 1, 2, 4.- Parlatore in De Candolle, Prodr. XVI, pt. II (1868), 487, excludendis specimenibus indicis.- Franchet & Savatier, Enum. Pl. Jap. I (1875), 472.- Masters in Journ. Linn. Soc. XVIII (1881), 497; XXVI (1902), 641; XXXVII (1906), 412; in Journ. Bot. XLI (1903), 268.- Franchet in Nouv. Arch. Mus. Paris, ser. 2, VII (1884), 101 (Pl. David. I. 291).- Sargent in Garden & Forest, VI (1893), 493; For. Fl. Jap. (1894), 78.- Beissner in Nuov. Giorn. Bot. Ital. n. ser. IV (1897), 186.- Pritzl in Engler, Bot. Jahrb. XXIX (1900), 220.- Shirayawa, Icon. Ess. For. Jap. I (1900), 29, t. 12, fig. 14-27.- Palibin in Act. Hort. Petrop. XIX (1901), 137 (Consp. Fl. Kor.).- Matsumura in Bot. Mag. Tokyo, XV (1901), 138.- Matsumura & Hayata in Journ. Coll. Sci. Tokyo, XXII (1906), 402 (Enum. Pl. Formos.).- Pavollini in Nuov. Giorn. Bot. Ital. n. ser. XV (1908), 439.- Pampanini in Nuov. Giorn. Bot. Ital. n. ser. XVII (1910), 232; XVIII (1911), 108.- Patschke in Engler, Bot. Jahrb. XLVIII (1913), 678.- Rehder & Wilson in Sargent, Pl. Wilson. II (1914), 60.- Hayata in Bot. Mag. Tokyo, XXXI (1917), 115.- Chun, Chin. Econ. Trees, (1931), 40.- Rehder in Journ. Arn. Arb. IV (1923), 127; in Bailey, Cult. Evergreens, (1923), 203; Manual, Cult. Trees & Shrubs (1927), 13.- Dallimore & Jackson, Handb. Conif. (1923), 237, fig. 51 (1st edit.); (1931), 236, fig. 51 (2nd edit.).- Wilson in Journ. Arn. Arb. VII (1926), 67.- Bean, Trees & Shrubs Hard. Brit. Isl. I (1929), 669 (5th edit.).- Handel-Mazzetti, Symb. Sinicae, VII, Lieferung I (1929), 7.

Juniperus barbadensis Thunberg (non Linnaeus), Fl. Jap. (1784), 264.

Juniperus virginica Thunberg (non Linnaeus), Fl. Jap. (1784), 264.

Juniperus cernua Roxburgh, Fl. Ind. III (1832), 839 (2nd edit.).

Juniperus dimorpha Roxburgh, Fl. Ind. III (1832), 839 (2nd edit.).

Juniperus Thunbergii Hooker & Arnott, Bot. Vog. Beechey, (1838) 271.

Juniperus foetida, var. *sabina* Spach, Hlst. Veg. XI (1842), 315, quoad synonym. *Juniperus chinensis* Hort.

Juniperus flagelliformis Hort. apud London, Encycl. Trees & Shrubs, (1842), 1090.

Juniperus nepalensis Hort. ex Endlicher, Syn. Conif. (1847), 21 (quasi-synon.).

Juniperus Reevesiana Hart. ex Endlicher, Syn. Conif. (1847), 31 (quasi-synon. *Juniperus cernuae*).

Juniperus struthiacea Knight & Perry, Syn. Conif. (1850), 13 (nomen nudum).

Juniperus sphaerica Lindley & Paxton Fl. Gard. I (1850-51), 58, fig. 35.- Pampanini in Nuov. Bot. Ital. n. ser. XVII (1910), 214.

Juniperus Cabiancae Visiana in Mem. Istit. Venet. Sci, VI (1856), 246, t. 1 ?.- Gard, Chron. (1857), 548.

Sabina sphaerica Antoine, Cupress. (1857), 52, t. 72 (pro parte).

Sabina chinensis Antoine, Cupress. (1857), 54, t. 76, 76, fig. a, t. 78, fig. 1, u.

Sabina struthiacea Antoine, Cupress. (1857), 69.

Sabina dimorpha Antoine, Cupress. (1857), 70.

Juniperus Fortunei Van Houtte ex Gordon, Pinetum (1858), 119 (quasi-synon.).

Juniperus chinensis, var. *pendula* Franchet in Nouv. Arch. Mus. Paris, ser. 2, VII (1884), 101 (Pl. David. I. 291).

Evergreen, pyramidal tree, 8-10, rarely up to 20, metres high; bark dark brown or dark grey, peeling off in long, narrow strips; branchlets terete, glabrous, ascending, those of the current year green, those of the more than one year old brownish-grey or yellowish-grey. Leaves green, dimorphic; those on the vigorous branchlets or young plants awl-shaped, 6-12 mm. long, sharply pointed at the apex, upper surface with a green prominent midrib and two glaucous bands, lower surface convex, with grooved midrib and without stomata, spreading in whorls of 3, or rarely in opposite pairs; those on the less vigorous branchlets or adult plants scale-like, 2 mm. long, obtuse at the apex, outer surface convex, in alternating pairs, closely pressed, overlapping. Flowers dioecious; staminate flowers bright

yellow, numerous, usually terminal on adult branchlets; pistillate flowers small, green, ovoid, composed of 4 to 6 pointed, fleshy scales, on the vigorous or less vigorous branchlets. Fruit a brown, glaucous, subglobose berry, 8 mm. in diameter, seeds 2-5, brown, ovoid.

MOUNT OMEI: Wan-hsing-chuang, alt. 470 m., *H. C. Chow*, No. 8473, October 1, 1938; same locality, in forests, tree 10 metres high, staminate flower yellow, pistillate flowers pale green, common, *W. P. Fang*, No. 13962, April 1, 1940.

SZECHUAN: Chengtu, cultivated in the inner city, small tree 8 metres high, leaves scale-like or acicular, pistillate flowers green, *W. P. Fang*, No. 12077, March 23, 1938; same locality, *W. P. Fang*, No. 13205, February 3, 1939; Kuan-hsien, Mt. Tsing-cheng; small tree 5 metres high, *W. P. Fang*, No. 12196, April 10, 1938.

Distribution: Manchuria, Mongolia, Hopei, Shantung, Honan, Shensi, Kansu, Kiangsu, Chekiang, Hupeh, Hunan, Szechuan, Yunnan, Corea, Japan.

This species is commonly cultivated around the tombs and temples at the foot of Mount Omei on account of its very beautiful pyramidal tree-crown and evergreen leaves all the year.....*W. P. Fang*.

Fig. 1, a fruiting branch (natural size); 2, scale-like leaf (enlarged 5 times); 3, awl-shaped leaves (enlarged 5 times); 4, staminate flower (enlarged 10 times); 5, pistillate flower (enlarged 5 times).

圖版一百八十六

刺 柏 別名：檜，圓柏。

柏 科

常綠喬木，塔形，高八至十公尺，稀達二十公尺；樹皮深褐色或深灰色，常成長帶狀之薄片而脫落；小枝圓柱形，光滑無毛，上升，當年者綠色，多年者灰褐色或灰黃色。葉綠色；着生於生長旺盛之枝或嫩苗者成錐形，長六至十二公厘，先端尖銳，葉表面具綠色而突出之中肋，其側各具一白粉帶，葉背面凸形，中肋凹下且兩側無氣孔，常三葉成一輪，稀二葉成一輪，均離枝斜向伸展；如在生長不甚旺盛或老幹上之葉則成鱗片形，長二公厘，先端鈍形，表面凸形，對生，緊貼於枝，且彼此覆蓋。花單性，大小蕊花異株；小蕊花黃色，多數着生於生長力量較弱之枝之先端；大蕊花小形，綠色，卵圓形，具尖形之肉質鱗片四至六枚，常生於生長旺盛之枝。果為褐色而被白粉之亞圓球形漿果，直徑八公厘，種子二至五枚，褐色，卵圓形。

此種產於峨眉山麓之萬行莊等處墳園及廟側，多因其具常綠之葉及美麗之樹冠，栽培以點綴風景。

此種分佈於東三省，蒙古，河北，山東，河南，陝西，甘肅，江蘇，浙江，湖北，湖南，四川，雲南，朝鮮，日本。

圖解： 1. 着果之枝（原大）； 2. 鱗片形之葉（放大五倍）； 3. 錐形之葉（放大五倍）； 4. 小蕊花（放大十倍）； 5. 大蕊花（放大五倍）。



120. *Juniperus chinensis* Linnaeus



FIG. 1

Handwritten text, possibly a name or number, located to the right of the detailed drawings.

Plate 187. (part) Howard visit to Mt Omei, I. 517

JUNIPERUS SQUAMATA Buchanan-Hamilton.

Cupressaceae. (part) Howard visit to Mt Omei, I. 517

Juniperus squamata Buchanan-Hamilton apud Lambert, Deser. Gen. Pinus II (1842), 17. - D. Dou, Prodr. Fl. Nepal. (1825), 85. - Spach in Ann. Sci. Nat. ser. 2, XVI (1841), 293. - Endlicher, Syn. Conif. (1847), 18. - Brandis For. Fl. Brit. Ind. (1874), 537. - Henry in Elwes & Henry, Trees Great Brit. & Irel. VI (1912), 1420. - Rehder & Wilson in Sargent, Pl. Wilson. II (1914), 57. - Rehder in Bailey, Cult. Evergreens, (1923), 199; Manual Cult. Trees & Shrubs (1927), 11. - Dallimore & Jackson, Handb. Conif. (1923), 199. - Wilson in Journ. Arn. Arb. VII (1926), 64. - Bean, Trees & Shrubs Hard. Brit. Isl. I (1929), 676 (8th Edit.). - Handel-Mazzett, Symb. Sincae, VII, Lieferung I (1929), 8.

Juniperus religiosa Royle, III. I (1839), 351 (nomen nudum).

Juniperus Lambertiana Wallich mss. ex Endlicher, Syn. Conif. (1847), 19, (quasi synonym. *J. squamatae*).

Juniperus rigida Wallich mss. ex Endlicher, Syn. Conif. (1847), 19, quasi synonym. *J. squamatae*.

Sabina squamata Antolne, Cupress. (1857), 66, t. 90, pro parte.

Juniperus recurva B. *squamata* Parlatores in De Candolle Prodr. XVI, pt. II (1869), 432. - Hockley l., Fl. Brit. Ind. V (1888), 647. - Masters in Journ. Linn. Soc. XXVI (1902), 543; XXVII (1906), 413; in Journ. Bot. XLI (1903), 268. - Patschke in Bot. Jahrb. XLVIII (1913), 678.

Juniperus recurva Franchet (non Buchanan-Hamilton) in Nouv. Arch. Mus. Paris, ser. 2, VII (1884), 102 (Fl. David. 1. 292); in Journ. de Bot. XIII (1899), 263. - Belssner in Nouv. Glorn. Bot. Ital. n. ser. IV (1907), 186. - Pritzels in Engler, Bot. Jahrb. XXIX (1900), 219. - Patschke in Bot. Jahrb. XLVIII (1913), 678, pro parte.

Juniperus recurva var. *densa* Hort. Kew, 1880 (in Herb. Arnold Arb.).

Juniperus morrisonicola Hayata in Gard. Chron. ser. 3, XLIII (1908), 194; in Journ. Coll. Sci. Tokyo, XXV, art. 19, (1908), 211, fig. 7 (Fl. Mont. Formos.); XXX, art. 1, (1911), 307; in Journ. Linn. Soc. XXXVIII (1908), 298.

Juniperus Franchetiana Leveille ex Komarow in Not. Syst. Herb. Ross. V (1924), 30.

Evergreen, prostrate shrub, 1 to 2 metres high; bark brown or dark brown, peeling off in very thin flakes; branches decumbent, terete, dark-green; branchlets ascending, green, grooved, glabrous. Leaves ternate crowded and loosely appressed on the vigorous young branchlets, spreading and more remotely on the leading branches, green, awl-shaped, 4-8 mm. long, sharply pointed at the apex, upper surface concave, whitened, glaucescent, lower surface convex and furrowed. Staminate flowers yellow, consisting of numerous stamens forming an ovoid catkin. Pistillate flowers green, subglobose, consisting of a few scales. Fruit an ellipsoid berry, 6-8 mm. long, 4 mm. in diameter, reddish-brown when young and changing to purplish black when matured in the second year; seeds solitary, ovoid, ridged.

MOUNT OMEI: Chin-ting, alt. 3135 m., *T. H. Tu*, Nos. 313 & 620, in 1935; same locality, on grassy slopes, shrub 2 metres high, occasionally, *W. P. Fang*, No. 14778, May 20, 1940; Chien-fu-ting, alt. 3150 m., in thickets, shrub 2 metres high, bark dark grey, leaves green, *C. L. Sun*, No. 273, May 17, 1939; southwest of Mount Omei, Opien-hsieu, Shaw-ping-shan, in forests, shrub 2 metres high, bark grey, leaves green, fruits green, *C. L. Sun*, No. 1059, August 25, 1939; without precise locality, *C. W. Yao*, Nos. 3122, 4229 & 5182, from 1938 to 1939.

Distribution: Formosa, Szechuan, Yunnan, Himalaya.

This species is very common on the summit of Mount Omei. It is usually a low shrub and forms a dense scrub spreading along the cliffs or grassy slopes..... *W. P. Fang*.

Fig. 1, a fruiting and leafy branch (natural size); 2, a staminate flowering branch (natural size); 3, a staminate flowering inflorescence (enlarged 10 times); 4, a stamen (enlarged 10 times); 5 a fruit (enlarged 2 times); 6, a seed (enlarged 2 times).

Juniperus squamata var. *Fargesii* Rehder & Wilson in Sargent, Pl. Wilson. II (1914), 159. Rehder in Journ. Arn. Arb. IV (1923), 126; in Bailey, Cult. Evergreens, (1923), 199; Manual Cult. Trees, & Shrubs, (1927), 11. - Dallimore & Jackson, Handb. Conif, (1823) 260. - Wilson in Journ. Arn. Arb. VII (1926), 65.

Juniperus Lemceana Leveille & Blin in Leveille, Fl. Kouy-tcheou, (1915), 111.

Juniperus Fargesii Komarow in Not. Syst. Herb. Ross. V. (1924), 30, 6891.

SOUTHWEST OF MOUNT OMEI: Opien-hsien, Yen-ching-chi, tree 15 metres high, bark brownish-grey, fruit with one seed, W. C. Cheng, Nos. 6339 & 6480, July 1936.

Distribution: Shansi, Kansu, Hupeh, Szechuan, Sikang, Yunnan.

This variety represents a tree form of the type species. It has been found not uncommon at Opien-hsien, southwest of Mount Omei.....W. P. Fang.

圖版一百八十七

巖刺柏

俗名：岩柏，香杉。

柏科

常綠小灌木，常匍匐於岩石或草地之上，高一至二公尺；樹皮褐色或深褐色，常成薄片脫落；枝下垂，圓柱形，深綠色；嫩枝向上直升，綠色，現溝紋，光滑無毛。葉三枚輪生，在生長旺盛之嫩枝上常密集，在主枝上則較稀疏，綠色，錐形，長六至八公厘，先端甚尖銳，表面凹形，微帶白色，略被白粉，背面凸形，略現溝紋。小蕊花黃色，多數密集成卵圓形之葉叢花序。大蕊花綠色，亞圓珠形，具數鱗片。果為卵圓形的漿果，長六至八公厘，直徑四公厘，嫩時紅褐色，次年成熟時則現深紫色；每果實僅具一種子，卵圓形，現脊紋。

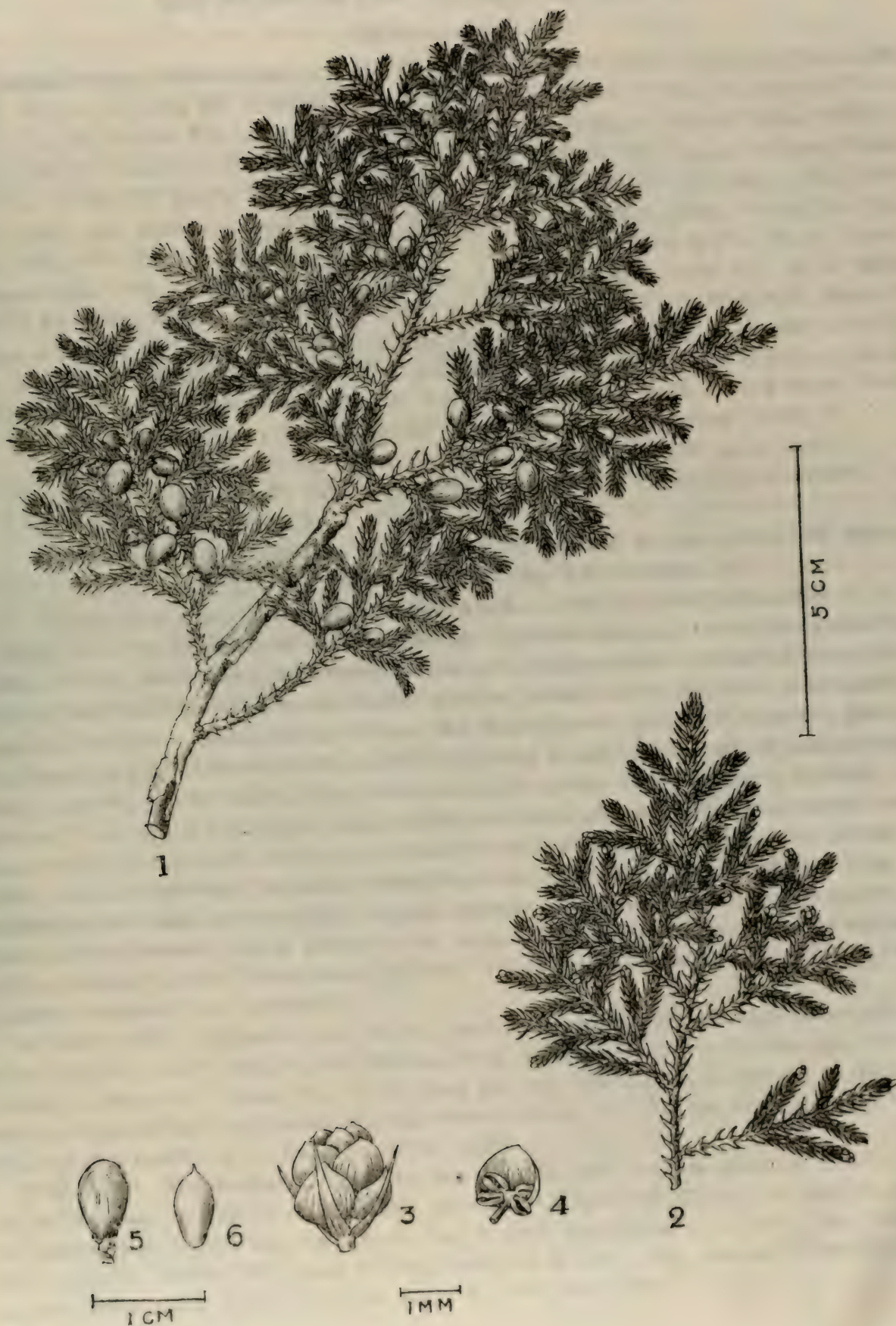
本種產於峨眉山頂之金頂及千佛頂附近，峨邊之壽屏山亦產之。因常生於岩上成匍匐狀，故俗名岩柏。

本種分部於台灣，四川，雲南及印度之喜馬拉雅山。

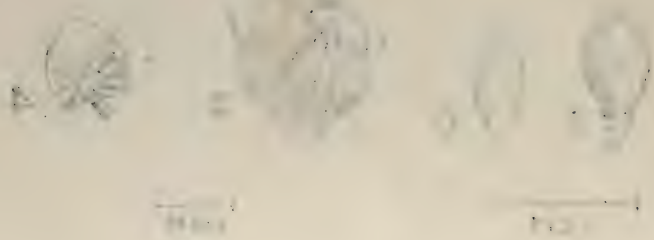
圖解： 1. 着果及葉之枝（原大）； 2. 小蕊花枝（原大）； 3. 小蕊花序（放大十倍）； 4. 小蕊（放大十倍）； 5. 果實（放大二倍）； 6. 種子（放大二倍）。

法氏巖刺柏 變種

此變種產於峨邊縣之鹽井溪，常成高十五公尺喬木。原種係灌木，而此變種則成高大喬木，故其區別甚微。當地人將原種及變種之枝葉採後曬乾，磨成粉末，製成香，以作拜佛祈禱時焚獻之用。故又俗名香杉。



187. *Juniperus squamata* Buchanan-Familton.



CEPHALOTAXUS FORTUNEI Hooker.

Cephalotaxus Fortunei Hooker in Bot. Mag. LXXVI (1860), t. 4469. - Parlatores in De Candolle, Prodr. XVI, pt. II (1838), 503. - Franchet in Nouv. Arch. Mus. Paris, ser. 2, VII (1834), 102 (Pl. David, I. 292); in Journ. de Bot. XIII (1899), 265. - Kanitz in Szechenyi, Keletaza. Utajam. Tudom. Ercs. II. (1791), 849 (Pl. Enum. C.); in Wiss. Ergeb. Reise Szechenyi, II (1898), 723. - Beissner in Nuov. Giorn. Bot. Ital. n. ser. IV. (1897), 180; in Bull. Soc. Bot. Ital. (1901), 358. - Pritzl in Engler, Bot. Jahrb. XXIX (1900), 213. - Masters in Journ. Linn. Soc. XXVI (1902), 545; XXXVII (1906), 413; in Journ. Bot. XLI (1903), 209. - Pilger in Engler, Pflanzenr. IV.- 5, (1903), 103. - Diels in Wiss. Ergeb. Exped. Eichner China Tibet, X (1908), 247. - Dunn & Tutcher in Kew Bull. Misc. Inform. add. ser. X (1912), 286 (Fl. Kwangtung & Hongkong). - Patschke in Engler, Bot. Jahrb. XLVIII (1913), 629. - Rehder & Wilson in Sargent, Pl. Wilson. II (1914), 5. - Chun, Chin. Econ. Trees, (1921), 45. - Rehder in Bailey, Cult. Evergreens, (1923), 183; Manual Cult. Trees & Shrubs, (1927), 4. - Dallimore & Jackson, Handb. Conif. (1923), 23, fig. 3. - Wilson in Journ. Arn. Arb. VII (1926) n. 39. - Bean, Trees & Shrubs, Hard. Brit. Isl. I (1929), 331 (5th Edit.). - Handel-Mazzetti, Symb. Sinicae, VII, Lieferung I (1929), 1.

Cephalotaxus filiformis Kniggt & Perry ex Gordon, Pinetum (1858), 46 (quasi synonym.).

Cephalotaxus drupacea K. Koch (non Siebold & Zuccarini), Dendrol. II. pt. II (1873), 104 (quoad synonym. *C. Fortunei*).

Cephalotaxus Griffithii Beissner (non Hooker f.) in Bull. Soc. Bot. Ital. (1901), 358. - Masters in Journ. Bot. XLI (1903), 209; in Journ. Linn. Soc. XXXVII (1906), 414.

Cephalotaxus Manni Masters (non Hooker f.) in Journ. Linn. Soc. XXVI (1902), 545.

Small tree 5 to 10, rarely up to 20, metres high, usually dividing into several stems about the middle of trunks; bark brown or dark-brown, peeling off in large flakes and leaving pale markings on the inner bark; branches forked, terete, slender, glabrous, green or yellowish-green. Buds usually 3, terminal on branchlets, conical-oblong, 6-8 mm. long, with numerous, persistent, imbricate, glabrous triangular-acute scales. Leaves spirally arranged, decurrent at base, usually twisted into two-ranks, widely spreading, usually horizontally, linear, gradually tapering to a fine point at the apex, 6-9, rarely to 11, cm. long, 3-4 mm. broad, upper surface deep green, glabrous, with distinct midrib, lower surface with a glaucous band containing more than 20 rows of stomata at either side of the prominent midrib. Flowers dioecious: staminate flowers numerous, yellow, in a short-stalked head; 7 mm. in diameter, at the axils of leaves, bracts obovate or ovate, yellowish, glabrous, anthers yellow, 3-celled; pistillate flowers green, in axils of scales, on or at the base of current year branchlets, each scale containing 2 ovules, scales acute, glabrous. Fruit ellipsoid, drupaceous, about 2.5 cm. long, greenish or purplish, 1 or 2 on a stalk.

MOUNT OMEI: Shih-sun-ku, alt. 950 m., small tree 2 metres high, staminate flowers yellow, *W. P. Fang*, No. 18187, March 6, 1942; Hei-lung-kiang, alt. 950 m., small tree 5 metres high, staminate flowers yellow, *W. P. Fang*, No. 16187, April 12, 1941; Niu-hsin-ssu, alt. 980 m., in thickets, small tree 5 metres high, bark brown, staminate flowers yellow, *C. L. Sun*, No. 1434, March 20, 1940; without precise locality, *H. C. Chow*, No. 9025, in 1938.

SZECHUAN: Wu-shan-hsien, *K. L. Chu*, No. 1951, in 1938; Nanchuan-hsien, *K. L. Chu*, No. 866, in 1935; same locality, *H. C. Yang*, Nos. 3038 & 3187, April 1936; Chengtu, at roadside, small tree 3 metres high, *W. P. Fang*, No. 13426, May 6, 1939; Kuan-hsien, *S. S. Chien*, Nos. 5130 & 5379, April to October 1936; same locality, small tree 8 metres high, staminate flowers yellow, pistillate flowers green, *W. P. Fang*, Nos. 12090 & 12107, April 1938.

SIKANG: Tien-chuan-hsien, *K. L. Chu*, Nos. 2253, 2381, 6519 & 5520, in 1936; same locality, *F. C. Tai & C. M. Teng*, No. 5181, September 12, 1939.

Distribution: Shensi, Chekiang, Kiangsi, Hupeh, Szechuan, Sikang, Hunan, Kweichow, Yunnan.

This species is characterized by its long and gradually tapering leaves which are grey in colour and with two bands of distinct stomata at the lower surface.....W. P. Fang.

Fig. 1, a staminate flowering branch (natural size); 2, a pistillate flowering branch (natural size); 3, a fruiting branch (natural size); 4, a staminate flower (enlarged 5 times); 5, a pistillate flower (enlarged 5 times). 6, pistillate flowering inflorescence (enlarged 3 times); 7, pistillate flower without scale to show the ovules (enlarged 5 times); 8, upper and lower surfaces of leaves (enlarged 4 times).

圖版一百八十八

長葉圓頭杉 別名：福穹粗，三尖杉。

圓頭杉科

喬木高五至十公尺，稀達二十公尺，常於主幹之中部分為數幹；樹皮褐色或深褐色，常成大薄片脫落，且脫落後內面現淺色之花紋；枝對生，圓柱形，光滑無毛，綠色或黃綠色。冬芽常三枚生於枝之頂端，長圓錐形，長六至八公厘，鱗片多數，宿存，覆瓦狀排列，銳尖三角形，兩面均光滑無毛。葉之基部向下延伸成鱗狀，常左右扭折成兩行，平斜向伸展，綫形，先端漸尖，長六至八公分，稀達十二公分，寬三至四公厘，表面深綠色，光滑無毛，具顯著之中肋，背面灰色，在突出中肋之兩側各具二十行以上之氣孔，花單生，大小蕊花異株：小蕊花黃色，多數聚集成一短梗之圓頭形花序，直徑七公厘，着生於葉腋，苞片倒卵形或卵形，黃色，光滑無毛，花藥黃色，具三花粉囊；大蕊花綠色，自當年生枝之基部或上端發出，着生於鱗片之內側，每鱗片具二胚珠，鱗片銳尖形，光滑無毛。果實成卵圓形，核果狀，長二公分半，淡綠色或紅淡色，每一果梗上具果實一或二枚。

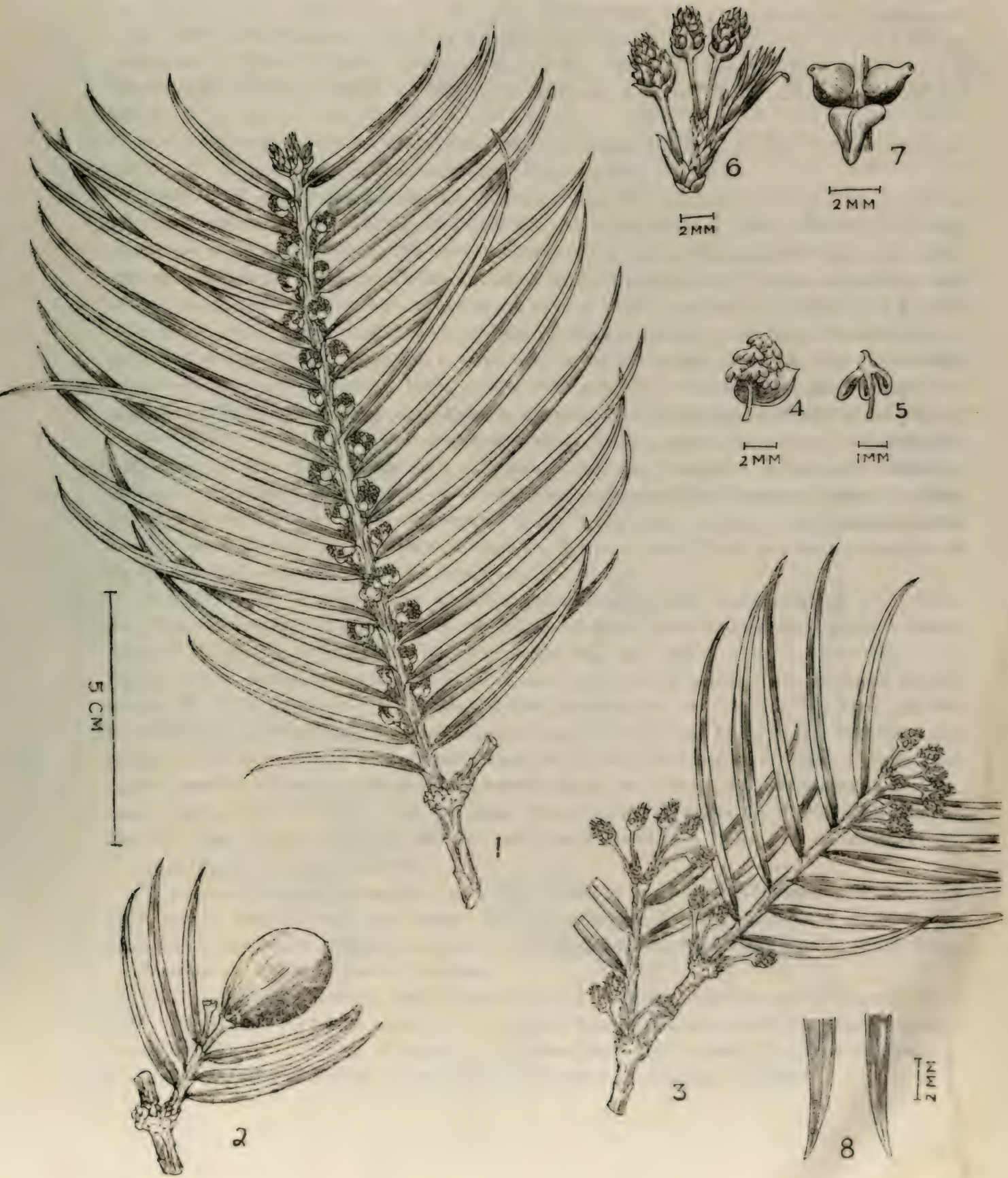
此種產於峨眉山之石筍溝，黑龍江及牛心寺等處叢林中。三四月開花，八月果可成熟。

此種分佈於陝西，浙江，江西，湖北，四川，西康，湖南，貴州及雲南等省。

此種之長而成漸尖形之葉，且其背面灰色具多數顯明之氣孔，為其特徵。

此屬之小蕊花均聚集成圓球形之頭狀花序，故名圓頭杉。

圖解： 1. 着小蕊花及葉之枝（原大）； 2. 果枝（原大）； 3. 大蕊花枝（原大）； 4. 小蕊花（放大三倍）； 5. 小蕊（放大五倍）； 6. 大蕊花序（放大三倍）； 7. 大蕊花折去鱗片示胚珠（放大五倍）； 8. 葉之表面及背面（放大四倍）。



188. *Cephalotaxus Fortunei* Hooker



CEPHALOTAXUS OLIVERI Masters.

Taxaceae.

Cephalotaxus Oliveri Masters in Bull. Herb. Boissier, VI (1908), 270; in Journ. Linn. Soc. Bot. XXVI (1902), 545; XXVII (1903), 413; in Gard. Chron. ser. 3, XXXIII (1903), 227, fig. 93; in Journ. Bot. XLI (1903), 269.- Pritzl in Engler, Bot. Jahrb. XXIX (1900), 214.- Pilger in Engler, Pflanzenreich, IV.-5. (1903), 104 (Taxaceae).- Patschke in Engler, Bot. Jahrb. XI VIII (1913), 629.- Rehder & Wilson in Sargent, Pl. Wilson. II (1914), 6.- Rehder, Manual Cult. Trees & Shrubs (1927), 4.- Bean, Trees & Shrubs, Hard. Brit. Isl. I (1929), 332 (5th edit.).- Dallimore & Jackson, Handb. Cult. (1921), 67 (2nd edit.).

Cephalotaxus Griffithii Oliver (non Hooker f.) in Hooker's Icon. Pl. XX (1890), t. 1913, excludendis specimenibus a Griffith et Watt collectis.

Shrub 2 to 3 metres high, bark brown; branchlets opposite or whorled, terete, glabrous, those of the current year green, those of more than one year old yellowish-green, with persistent bud-scales at the base of each year growth. Buds usually 3 terminal on branchlets, conical, 5 mm. long, scales numerous, imbricate, lanceolate or triangular-acute, glabrous on both sides. Leaves twisted into very closely two opposite ranks, widely spreading and curving slightly upward, stiff, linear, 2.1-2.5, rarely up to 3.5, cm. long, 3 mm. broad, truncate at base, attached to and decurrent on the branchlets by a very short petiole, abruptly acuminate to a fine point on the apex, upper surface deep green, glabrous, slightly convex, midrib distinct, lower surface pale green or yellowish-green at the centre and margins, slightly concave, with more than 15 glaucous rows of stomata at each side of the slightly grooved midrib. Flowers dioecious: staminate flowers 5 to 7 in a globose head 6 mm. in diameter, on a peduncle 2-3 mm. long, in the axils of leaves of last year branchlets, scales acute, imbricate, glabrous, each flower subtended by a obovate bract and containing 7 stamens, anthers 3-celled; pistillate flowers in a green, oblong-ellipsoid spike, 5 mm. long, ovules 2 at the inner side of the triangular-acute scales. Fruit ellipsoid, drupaceous, 2.5-3 cm. long, 1.5 cm. in diameter, apiculate on the apex, solitary on a stout stalk, 1-1.2 cm. long.

MOUNT OMEI: Lung-men-tung, alt. 546 m., shrub 3 metres high, fruits ellipsoid, *C. L. Chow*, No. 4714, October 6, 1941; Ching-yin-ko, alt. 950 m., on slopes, shrub 3 metres high, pistillate flowers green, *T. C. Lee*, No. 4486, April 1, 1940; Hung-chun-ping, alt. 1147 m., *W. C. Cheng*, No. 6712, October 1936; same locality, at the side of the forests, small tree 3 metres high, staminate flowers yellow, *W. P. Fang*, No. 13838, February 27, 1940; same locality, *H. C. Chow*, No. 8668, October 16, 1938; same locality, in forests, shrub 3 metres high, *T. C. Lee*, No. 3367, August 20, 1940; same locality, shrub 3 metres high with ellipsoid drupe, *W. P. Fang*, No. 14932, October, 3, 1940; same locality, small tree 5 metres high, staminate flowers yellow, *W. P. Fang*, No. 15786, March 19, 1941; same locality, shrub 2 metres high, staminate flowers yellowish brown, *W. P. Fang*, No. 18192; March 16, 1942; Chang-lao-ping, alt. 1600 m., small tree 6 metres high, staminate flowers yellow, *W. P. Fang*, No. 15886, March 19, 1941.

This species is easily distinguished from other species by its closely two flat horizontally arranged leaves whose margins touch each other. The closely arranged leaves resemble a comb. It was discovered by Mr. Faber at Mount Omei and is very limited in distribution in China.....*W. P. Fang*.

Distribution: Western Hupeh, Szechuan.

Fig. 1, a staminate flowering branch (natural size); 2, a pistillate flowering branch (natural size); 3, a fruiting branch (natural size); 4, a staminate flowering inflorescence (enlarged 10 times); 5, staminate flower (enlarged 10 times); 6, 2 stamens (enlarged 10 times); 7, a pistillate flowering inflorescence (enlarged 5 times); 8, the a leaf lower surface of (enlarged 1.5 times).

圖版一百八十九

梳葉圓頭杉

別名：花枝杉，阿氏杉。

圓頭杉科

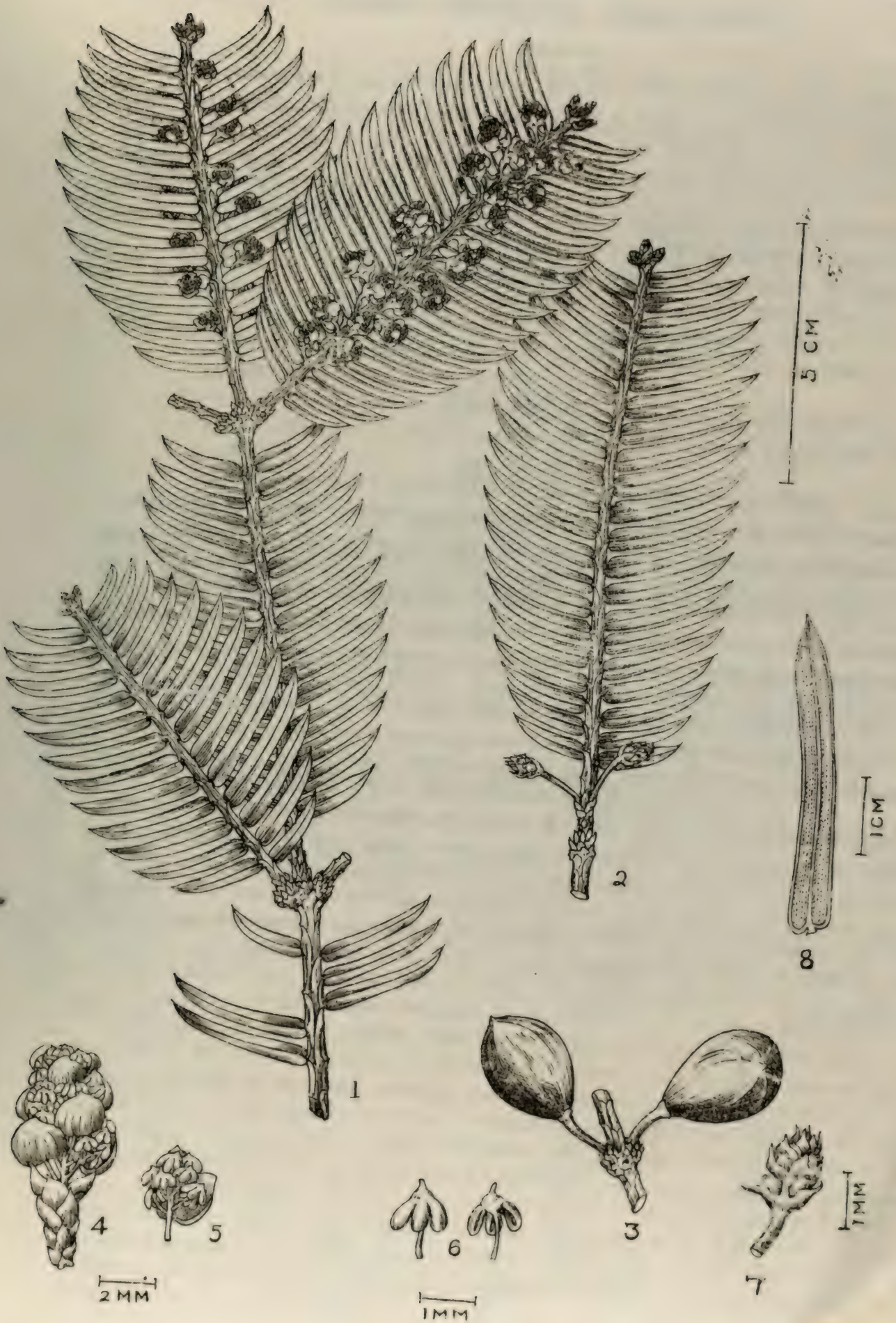
灌木高二至三公尺，樹皮深褐色；枝對生或輪生，圓柱形，光滑無毛，當年者綠色，多年者則現黃綠色，在每年生者之基部具宿存之鱗片。芽常三枚着生於小嫩枝之先端，圓錐形，長五公厘，鱗片多數，覆瓦狀排列，披針形或三角銳尖形，表裏兩面均光滑無毛。葉扭折成密接相對之兩行，平斜向伸展而上部略向枝之先端彎曲，堅硬，線形，長二十一至二十五公厘，稀達三十五公厘，寬三公厘，基部較寬成截形，以圓形之短葉柄着生於枝常成鱗狀之花紋，先端突尖成銳利之尖頭，表面深綠色，光滑無毛，略凸，且具顯著之中肋，背面略成凹形，下陷之中肋及邊緣現綠色或黃綠色，中肋兩側具白粉帶成熟時常現褐色，各具十五條以上之氣孔。大小蕊花異株：小蕊花五至七枚成圓頭形之花序，直徑六公厘，花梗長二至三公厘，由前年枝之葉腋生出，鱗片銳尖，排列成覆瓦狀，每花外被倒卵形之苞片，具七小蕊，花藥三室；大蕊花綠色成長卵圓形之穗狀花序，長五公厘，每三角銳尖形之鱗片內具二胚珠。果實卵圓形，核果狀，長二十五至三十五公厘，直徑十公厘，先端具一銳尖頭，粗壯之果梗上具果實一枚，果梗長十至十二公厘。

此種產於峨眉山之龍門洞，清音閣，洪椿坪及長老坪等處，由海拔五百餘公尺至一千六百公尺之森林旁邊或岩石上，二三月開花，十月果可成熟。

此種分佈於湖北西部及四川。

此種亦係首先在峨眉山發現者。密集成兩行之硬葉邊緣彼此相接，其狀如梳為其特徵。命名為梳葉圓頭杉。

圖解：1.小蕊花枝（原大）；2.大蕊花枝（原大）；3.果枝（原大）；4.小蕊花序（放大十倍）；5.小蕊花（放大十倍）；6.小蕊（放大十倍）；7.大蕊花序（放大五倍）；8.葉之背面（放大一倍半）。



189. *Cephalotaxus Oliveri* Masters



Plate 190. Kuan-hsien Mountain, Szechuan

TAXUS CHINENSIS (Pilger) Rehder.

Taxaceae.

September to December 1938.

Taxus chinensis (Pilger) Rehder in Journ. Arn. Arb. I (1919), 51; IV (1923), 119; in Bailey, Cult. Evergreens, (1923), 187; Rehder, Manual Cult. Trees & Shrubs (1927), 6.- Dallimore & Jackson Handb. Conifer. (1923), 71.- Silva Tarouca & Schneider, Uns. Freiland. Nad. Holz. (1923), 34, fig.- Wilson in Journ. Arn. Arb. VII (1926), 41.- Handel-Mazzetti, Symb. Sinicae, VII, Lieferung 1 (1929), 2.- Chien, Icon. Chin. Forest. Trees, I (1937), pl. 3.

Taxus baccata Franchet (non Linnaeus) in Nouv. Arch. Mus. Paris, ser. 2, VII (1894), 103 (Pl. David. I. 293).- Pritzl in Engler, Bot. Jahrb. XXIX (1900), 214.- Masters in Journ. Linn. Soc. Bot. XXVI (1902), 546; XXXVII (1906), 414; in Journ. Bot. XLI (1903), 269.

Cephalotaxus Mannii Diels (non Hooker f.) in Engler, Bot. Jahrb. XXIX (1900), 214.

Taxus baccata, subsp. 2, *cuspidata* var. b, *chinensis* Pilger in Engler, Pflanzenr. IV.-5, (1903), 112 (Taxaceae).- Patschke in Engler, Bot. Jahrb. XLVIII (1913), 630.- Henry in Elwes & Henry, Trees Gr. Brit. & Irel. I (1906), 108

Taxus cuspidata var. *chinensis* Rehder & Wilson in Sargent, Pl. Wilson. II (1914), 8.

Taxus baccata, subsp. 1, *Wallichiana* var. b, *chinensis* Pilger in Engler, Bot. Jahrb. LIV (1916), 43.

Taxus cuspidata Chun (non Siebold & Zuccarini), Chin. Econ. Trees, (1921), 43, fig. 13.

Evergreen tree, 8 to 10, rarely up to 15, metres high, bark fissured, brownish-red or brownish-grey; branches widely spreading; branchlets slender, subterete, those of the current year reddish-green, those of the more than one year old yellowish-green. Buds ovoid, with imbricate, rounded scales. Leaves alternate or spirally arranged, twisted at the base into 2-ranks, horizontally spreading, straight or falcate, linear, 2-3.8 cm. long, 4 mm. broad, abruptly pointed at apex, very shortly stalked at base, deep green above with slightly prominent midrib, pale green below with prominent midrib and 2 broad yellowish bands. Flowers dioecious; staminate flowers consist of 13-14 stamens forming a globose head on a short stalk with imbricate scales, stamens composed of 6-7 pendent anther-cells; pistillate flowers composed of several imbricate scales, the uppermost fertile scale bearing an ovule with a disk at base. Fruit a bony, broadly ovoid nut 5-7 mm. long, 4-5 mm. broad, slightly 2-angled, surrounded by a scarlet campanulate fleshy cup at base.

MOUNT OMEI: Hung-chun-ping, alt. 1147 m., in forests, small tree 6 metres high, *W. P. Fang*, No. 15087, November 2, 1940; same locality, small tree 7 metres high, fruits with red, fleshy cups, *W. P. Fang*, No. 15128, November 3, 1940; same locality, small tree 5 metres high, staminate flowers yellowish, *W. P. Fang*, No. 15940, March 27, 1941; Hou-tzu-po, alt. 1000 m., in thickets, small tree 3 metres high, staminate flowers yellow, *T. C. Lee*, No. 4500, April 2, 1940; She-tao-tuf, alt. 1300 m., in forests, small tree 4 metres high, *T. C. Lee*, No. 3347, August 19, 1940; Ta-ping, alt. 1400 m., small tree 5 metres high, staminate flowers yellow, *W. P. Fang*, No. 16082, April 3, 1941; same locality, small tree 3 metres high, staminate flowers yellowish, *W. P. Fang*, No. 18310, April 8, 1942; Pian-tan-ai, alt. 1400 m., on cliffs, shrub 1 metre high, staminate flowers yellow, *T. C. Lee*, No. 4445, March 30, 1940; Hsi-hsiang-chi, alt. 2100 m., *H. C. Chow*, No. 8335, September 9, 1938; Ta-cheng-ssu, alt. 2300 m., in forests, small tree 10 metres high, staminate flowers yellowish, *C. L. Sun*, No. 244, May 14, 1939; same locality, tree 10 metres high, staminate flowers yellow, *C. L. Sun*, No. 1887, May 5, 1940; same locality, small tree 5 metres high, staminate flowers yellow, *W. P. Fang*, No. 14775, May 20, 1940; same locality, tree 6 metres high, young fruits green with red bracts, *T. C. Lee*, No. 3237, August 10, 1940; same locality, *T. C. Lee*, No. 3945, October 11, 1940; same locality, in forests, small tree 8 metres high, staminate flowers yellow, *W. P. Fang*, No. 18420, April 21, 1942; Yen-wang-po, alt. 2400 m., small tree 3 metres high, *T. C. Lee*, No. 4465, March 31, 1940; without precise locality, *C. W. Yao*, No. 4730, southwest of Mount Omei, Opien-hsien, *W. C. Cheng*, Nos. 6246, 6820 & 6875, in 1936.

SZECHUAN: Kuan—hsien, Mount Tsing-cheng, S. S. Chien, No. 5806, January 6, 1937; same locality, in forests, small tree 8 metres high, W. P. Fang, Nos. 12178 & 12205, April 1938.

SIKANG: Tien-chuan-hsien, small tree 5 metres high, F. C. Tai & C. M. Teng, Nos. 5208 & 5325, September to December 1939.

Distribution: India, Philippine, China—Shensi, Kansu, Chekiang, Kiangsi, Hupeh, Szechuan, Sikang, Kweichow, Yunnan.

This species grows on Mount Omei usually in forests from 1200 to 2300 metres above the sea-level. W. P. Fang.

Fig. 1, a fruiting branch (natural size); 2, a staminate flowering branch (natural size); 3, staminate flowers (enlarged 5 times); 4, stamens (enlarged 15 times); 5, seed (enlarged 5 times); 6, the base of the seed (enlarged 2 times); 7, upper surface of leaf (enlarged 2 times); 8, under surface of leaf (enlarged 2 times).

圖版一百九十

紅豆杉

紅豆杉科

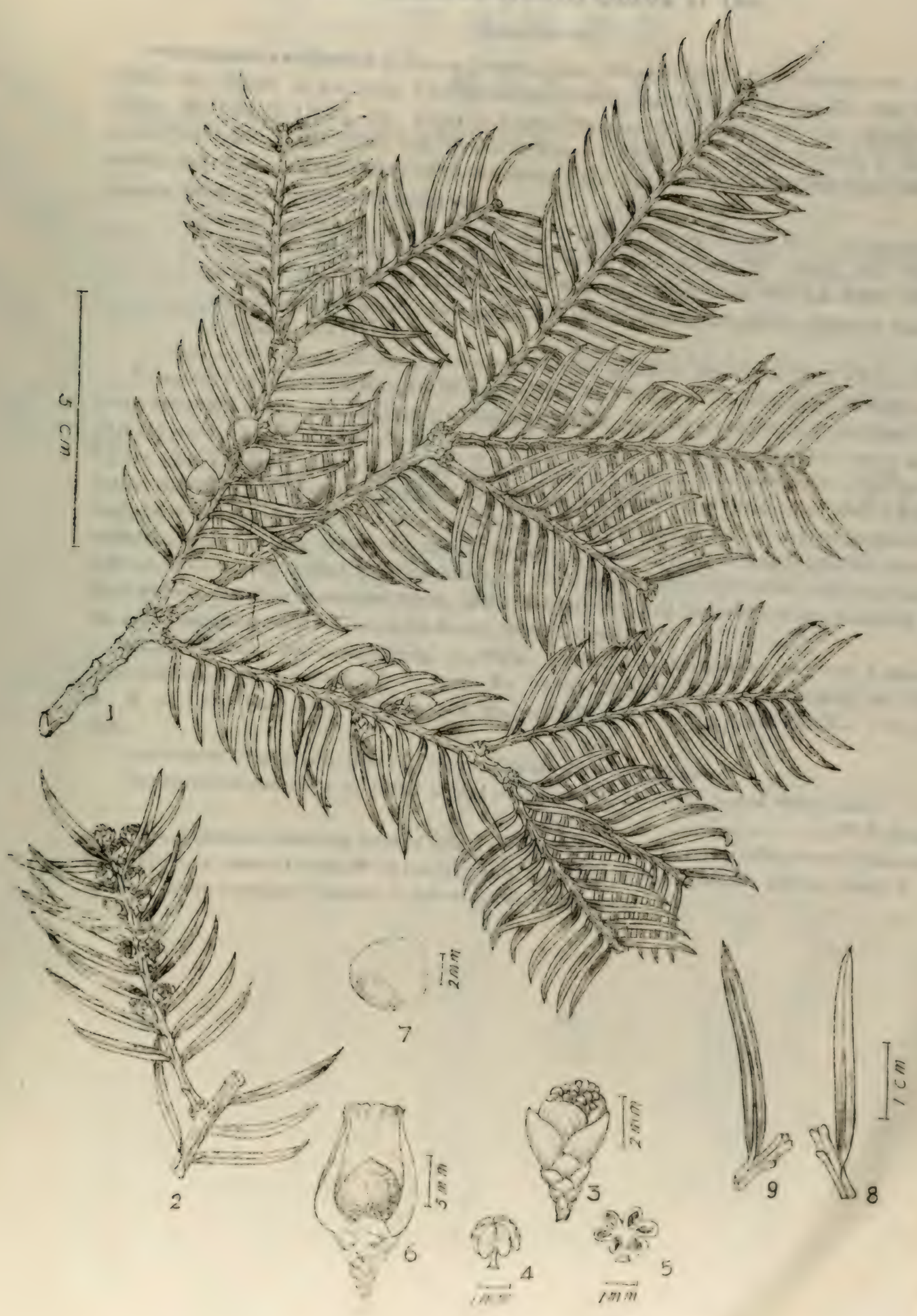
常綠喬木，高八至十公尺，稀達十五公尺，樹皮縱裂，灰色或紅褐色；枝纖細，亞圓柱形，當年者紅綠色，多年者黃綠色。冬芽卵圓形，具覆瓦狀排列之鈍形鱗片。葉互生或螺旋生長，基部扭折使排列成兩行，平斜向伸展或彎曲似鐮刀，綫形，長二至三公分半，寬四公厘，先端突尖，基部具短柄，表面深綠色並具略凸之中肋，背面淡綠色，具顯著之中肋及二黃色帶。大小蕊花異株；小蕊花具十三至十四小蕊聚集成圓頭形，花梗上具覆瓦狀排列之鱗片，每小蕊具下垂之花粉囊六七個；大蕊花具數覆瓦狀排列之鱗片，最上之鱗片具胚珠，其基部具花盤。果為闊卵圓形之骨質堅果，外被珠紅色鐘形肉質之杯狀物。

此種產於峨眉山之洪椿坪，扁担岩，猴子坡，蛇倒退，大坪，洗象池，大乘寺及閻王坡等處。四川之峨邊與灌縣及西康之天全縣均產之。在低山三四月開花，在高山則五月開花，七月果可成熟。

此種分佈於陝西，甘肅，浙江，江西，湖北，四川，西康，貴州，雲南等省。印度與南洋菲律賓亦產之。

圖解：1, 果枝 (原大)；2, 小蕊花枝 (原大)；3, 小蕊花 (放大五倍)；4, 小蕊 (放大十五倍)；5, 種子 (放大五倍)；6, 種子之基部 (放大二倍)；7, 葉之表面 (放大二倍)；8, 葉之背面 (放大二倍)。

Taxus chinensis Rehder



190. *Taxus chinensis* Rehder



Plate 191.

PODOCARPUS NERIIFOLIUS D. Don.

Podocarpaceae.

Podocarpus neriifolius D. Don in Lambert, Descr. Pinus, II (1824), 21 (pro parte); edit. minor (1832), 142.- Hooker in Bot. Mag. XXXVIII (1852), t. 4655.- Masters in Journ. Linn. Soc. Bot. XXVI (1902), 548; LXXVII (1906), 414.- Pilger in Engler, Pflanzenr. IV.-6 (1903), 80, 1127.- Patschke in Engler, Bot. Jahrb. XLVIII (1913), 629.- Rehder & Wilson in Sargent, Pl. Wilson. II (1914), 9.- Hayata in Bot. Mag. Tokyo, XXXI (1917), 119.- Wilson in Journ. Arn. Arb. VII (1925), 42.- Dallimore & Jasonck, Handb. Conif. (1931), 52.- (2nd edit.).

Podocarpus macrophylla (non D. Don) Wallich, Tent. Fl. Nepal. (1824), 53, t. 43 (excluding synonyms); Cat. No. 6052a (1830).- Franchet in Journ. de Bot. XIII (1899), 265.- Pritzel in Engler, Bot. Jahrb. XXIX (1900), 213.- Masters in Journ. Linn. Soc. Bot. XXVI (1902), 548.- Patschke in Engler, Bot. Jahrb. XLVIII (1913), 629 (pro parte).- Pilger in Engler, Bot. Jahrb. LIV (1915), 38.

Podocarpus macrophylla var. *acuminatissima* Pritzel in Engler, Bot. Jahrb. XXIX (1900), 213.

Evergreen tree, 5 to 10, rarely up to 15, metres high, bark brown or brownish-grey, fissured and scaly; branchlets terete, glabrous, those of the current year purplish-green, those of more than one year old green. Leaves alternate, scattered, coriaceous, straight or falcate, linear, 5-11, rarely up to 14, cm. long, acuminate at apex, gradually narrowed at base, glabrous, deep green above, pale green below, midrib prominent on both surfaces, primary and secondary veins obsolete; petioles 3-5 mm. long, flat above, rounded below. Flowers dioecious; staminate catkins clustered, axillary, sessile, cylindrical, 3-3.5 cm. long, with acute bracts at the base, anthers yellow, 2-celled, pistillate flowers solitary, axillary, long stalked, with few scales, of which one is fertile and bear an ovule in its axil. Seed globose, seated on an enlarged fleshy, edible, brightly coloured receptacle which is formed by the stalk fusing with sterile scales; testa fleshy, inner shell woody.

MOUNT OMEI: Wan-hsing-chuang, alt. 450 m., cultivated in the temple, small tree 4 metres high, staminate flowers yellow, *W. P. Fang*, No. 14261, May 10, 1940; Hung-chun-ping, alt. 1200 m., *H. G. Chow*, Nos. 8254, 9160 & 9678, August 1938; same locality, *C. W. Yao*, No. 5066, in 1939.

Distribution: India, Java, Sumatra, Borneo, China—Szechuan, Yunnan,

This species is commonly cultivated around temples and tombs at the foot of Mount Omei.

.....W. P. Fang.

Fig. 1, a staminate flowering branch (natural size); 2, a staminate flowering inflorescence (enlarged 5 times); 3, a stamen (enlarged 20 times); 4, a pistillate flowering branch (natural size); 5, a pistillate flower (enlarged 5 times); 6, a fruit (enlarged 2 times).

圖 牌 一 百 九 十 一

脈 葉 羅 漢 松

別名：百日青

羅 漢 松 科

常綠喬木，高五至十公尺，稀達十五公尺，樹皮褐色或灰褐色，縱裂且成薄片脫落；幼枝圓柱形，光滑無毛，當年者紫綠色，多年者綠色。葉互生，稀疎，厚革質，挺直或彎如鎌刀，線形，長九至十一公分，稀達十四公分，先端漸尖，基部漸狹，光滑無毛，表面深綠色，背面淺綠色，中肋在表背兩面均顯著，側脈則在表背兩面均不發育；葉柄長三至五公厘，上面扁形，下面圓形。大小蕊花異株；小蕊花成叢生於葉腋之莖花序，長三至三公分半，基部具銳尖之苞片，花藥黃色，二室；大蕊花常單生於葉腋，具長梗，梗上具數鱗片，僅一鱗片發育良好且其腋間具胚珠。種子圓球形，着生於果梗與不發育之鱗片所成之肥大花托上；外果皮肉質，內果皮木質。

此種產於峨眉山洪椿坪寺前林中及其他寺側與墳園。五月開花，六月果可成熟。

此種分佈於印度，尼泊爾，爪哇，蘇門答拉，婆羅洲，在我國則僅產於四川雲南兩省。

圖解：1, 小蕊花枝（原大）；2, 小蕊花序（放大五倍）；3, 小蕊（放大二十倍）；4, 大蕊花枝（原大）；5, 大蕊花（放大五倍）；6, 果實（放大二倍）。



191. *Podocarpus neriifolius* D. Don.



Plate 192.

HETEROSTEMMA ALATUM (Wallich) Wight.

Asclepiadaceae.

Heterostemma alatum (Wallich) Wight, Contrib. Bot. Ind. (1834), 42.- Decaisne in DC. Prodr. VIII (1844), 630.- Hooker f. Fl. Brit. Ind. IV (1883), 47.- Chung in Mem. Sci. Soc. China, 1 (1924), 223.- Tsiang in Sunyatsenia, III (1936), 191; IV (1939), 128.

Hoya alata Wallich Cat. (1832), No. 8180 (nomen nudum).

Slender scandent shrub, up to 4 m. tall; stem stramineous, striolate, bifarious-pubescent, glabrate at length, 2-3 mm. in diameter, internodes 5-10 cm., sometimes up to 15 cm. long. Leaves chartaceous, puberulous on both surfaces and densely as on veins beneath when young, glabrate at length, broadly ovate to oblong-ovate, shortly acuminate, base rotundate or broadly cuneate, rarely subcordate, 8-10 cm. long, 5-6 cm. wide, the largest adult ones sometimes 15 x 8 cm.; main veins 3 arising from the base, distinctly winged beneath becoming flattened at length, lateral nerves 3-4 pairs, slender, arcuate-ascending; basal glandules erect, 10-20 in a group above the petiole; petioles puberulous, flattened, 2-5 cm. long. Cymes umbelliform, 10-15-flowered, much shorter than the leaves, 2-6 cm. long; peduncles stout, puberulous; bracts and bracteoles ovate, 5 mm. long and wide; pedicels slender, puberulous, 1-1.5 cm. long. Buds ovoid, obtuse. Flowers to 1 cm. across; calyx-segments 5, valvate after anthesis, puberulous without, ovate, acute, 1 mm. long and wide, with 5 calycular squamellae at the base inside. Corolla yellow, rotate, puberulous without and glabrous within, tube spreading, 4-5 mm. high, lobes adherent altogether at the apex in aestivation and valvate after anthesis, triangular-ovate, 4-5 mm. long and wide; coronal-lobes 5, stellate, spreading horizontally from the depressed central column and lying flat on the corolla, linear-ligulate, much constricted at the base, tips reaching to the sinus of the corolla-lobes, obtuse; anthers quadrate, each with a hyaline connective at the apex; pollinia suborbicular-quadrate, each with a triangular membrane at the interior angle; caudicles short, ascendent; retinaculum purplish, rhomboid; ovary oblong, glabrous, ovules many, stigmatic head depressed, 5-angulate. Follicles geminate, continuous, the lower parts usually contiguous and the upper widely divaricated, linear-lanceolate, slightly attenuate toward the apex, 10-15 cm. long, 0.5 cm. across, epicarp greyish, smooth or striolate upon drying; seeds folded, broadly ovate, marginate, dark brown, glabrous, about 1.5 cm. long, 1 cm. wide; coma white-sericeous, verticillate, 3 cm. long; cotyledons oblong, radicle cylindrical, shorter than the cotyledons.

MOUNT OMEI: San-tao-ho, alt. 1300 m., a scandent shrub 5 metres high, *W. P. Fang*, No. 17254, July 10, 1941; Chiu-lao-tung, alt. 1800 m., a scandent shrub 4 metres high, *W. P. Fang*, No. 17488, August 9, 1941.

Distribution: India; Nepal; China—Yunnan, Kwangtung, Kwangsi, new to Szechuan.

The genus *Heterostemma* Wight, especially in so far as to the species of Indo-China is concerned, is in need of a critical revision. Costantin in Lecomte Fl. Gen. Indo-Chine, IV (1912), 119, admits seven species indigenous to that region which is floristically closely associated with South China. Among them some have been described as new based on fruiting specimens or even on sterile specimens. Dr. Fang's 17488 is an excellent specimen with good flowers which render identification easy and positive; no. 17254, however, is sterile. The present plant, as the specific epithet suggested, is characterized by the main veins which arise from the base of the leaves being alate. This distinguishing character, however, is not infallible judging by the copious material now before me. On young leaves the nerves appear very delicate and feeble, giving no indication that they would become winged later. On adult leaves, the principal veins are distinctly winged, but the wings undergo a gradational flattening as the blade broadens out towards maturity. Hitherto this species had been recorded from China in Yunnan and Kwangtung only. Its range of distribution is now extended westward to Szechuan, eastward to Kwangsi (Tsang 23180 from Waitsap, Wang 39938 & 40773 from Pingnan), and southward to Hainan (Lau 25443 from Pai-sha).....*Y. Tsiang*.

Fig. 1, habit (natural size); 2, a flower-bud (enlarged 8 times); 3, a flower (enlarged 4 times); 4, calyx, viewed from above (enlarged 8 times); 5, corona (enlarged 7 times); 6, a corona-tube (enlarged 8 times); 7, pollinia (much enlarged); 8, a pistil (enlarged 15 times); 9, a cross section of pistil (enlarged 20 times); 10, follicles (natural size); 11, seed (natural size); 12, embryo (enlarged 2.5 times).

藤 魂 醉

蘿 藦 科

纖細攀緣灌木，高達四公尺；莖狀莖具縱紋及二縱列之柔毛，老時則漸光滑，直徑二至三公厘，節間長約五至十公分，稀達十五公分。葉紙質，上下兩面均被絨毛，尤以嫩時背面葉脈上為密，漸老則光滑無毛，寬卵形或長方卵形，先端漸尖而短，基部圓形或闊楔形，稀呈亞心臟形，長八至十公分，闊五至六公分，老而大者有時長可達十五公分，闊可達八公分，主脈三由基部發出，初成翅形，在葉背清晰可見，後漸變扁平而隱沒，側脈三至四對，纖細，先端彎曲，基部小增體十至二十成羣豎立葉柄之上；扁形葉柄被柔毛，長二至五公分。聚繖花序繖形，其花十至十五朵，長二至六公分；較葉為短；花梗粗壯，密被絨毛；苞片和小苞片卵形，長寬均各約五公厘；小花梗細長，密生絨毛，長一至一公分半。芽卵圓形，具鈍頭。花之直徑一公分；花萼裂成五片，為攝合狀，表面被柔毛，呈卵形，先端銳尖，長闊相等，均約一公厘，基部內面具五個壟狀鱗片物。花冠黃色輪形，外面被毛，內面光滑無毛，冠筒伸直，長四至五公厘，花瓣在未開時頂端彼此連合，開後則成攝合狀，呈三角卵形，長及闊約為四至五公厘；副花冠五片星芒形，從花筒之中柱伸出平展，花冠之上，呈長舌形，基部窄小，尖端鈍形可達七瓣相連之凹處；花藥方形，頂端各具一透明藥隔；花粉團亞圓方形，在內面角上具有一三角形之膜；腺柄短粗；黏腺紫色，菱形；子房長圓形，光滑無毛，胚珠多數，柱頭扁平而具五稜。莢脣相連成對，通常下部聯合，上部則分歧甚寬，呈線狀披針形，頂端漸狹，長十至十五公分，闊五公厘，果皮灰色，光滑，乾時則現平行花紋；種子呈褶疊狀寬卵形，深褐色，光滑無毛，長約一公分半，寬約一公分；種毛絲狀，白色，輪生，長三公分；子葉長圓形，胚根柱狀較子葉為短。

此種產於峨嵋山海拔一千三百公尺至一千八百公尺間之三道河及九老洞森林中。七月開花，八月果可成熟。

本種分佈於印度，尼泊爾，及中國之雲南，廣西，廣東，四川尚為初次發現。

本屬種類，尤以安南產者，應有修正之必要。西曆一九一二年 Constantin 在安南植物誌中所發表之七種，與華南種類有密切關係，但此著作僅根據果實或不完全標本，即已定為新種。方文培博士在峨嵋山所採之是種標本，第一七四八八號係着花之標本，極易鑑定，其一七二五四號標本，則無花果。本種特點，為其數條由基部發出之葉脈具翅，但觀察多數標本之結果，此種特性，甚不可靠。幼葉之葉脈柔細，初無變翅之象徵，及長成後其主脈則漸成扁平之翅，但葉老時則翅復變扁平之狀。本種在中國原僅知產於雲南，廣東兩省，今則知其分佈已西及四川，東及廣西，南及安南矣。

圖解： 1. 着花葉之原形（原大）； 2. 花芽（放大八倍）； 3. 花（放大四倍）； 4. 花萼自上面俯視之形狀（放大八倍）； 5. 副花冠（放大七倍）； 6. 冠筒（放大八倍）； 7. 花粉團（高倍放大）； 8. 大蕊（放大十五倍）； 9. 大蕊橫切面（放大二十倍）； 10. 蓇葖（原大）； 11. 種子（原大）； 12. 胚（放大二倍半）。

gradual flattening as the blade proceeds out towards maturity. Hitherto this species had been recorded from China in Yunnan and Kwangtung only. Its range of distribution is now extended westward to Szechuan, eastward to Kwangsi (Tchang 23120 from Waitang, Wang 29928 & 29773 from ... and southward to ...)



192. *Heterostemma alatum* (Wallich) Wight



Plate 193.

PERIPLOCA CALOPHYLLA (Wight) Falconer.

Asclepiadaceae.

Periploca calophylla (Wight) Falconer in Proc. Linn. Soc. I (1842), 115.- Decaisne in De Candolle, Prodr. VIII (1844), 498.- Hooker f. Fl. Brit. Ind. IV (1883), 12.- Hemsley in Journ. Linn. Soc. Bot. XXVI (1889), 101.- Schlechter & Diels in Engler, Bot. Jahrb. XXIX (1900), 541.- Schneider in Sargent, Pl. Wilson. III (1916), 343.- Chung in Mem. Sci. Soc. China, I (1924), 221.- Tsiang in Sunyatsenia, II (1931), 179; III (1936), 161.- Handel-Mazzetti, Symb. Sinicae, VII, Lieferung 4 (1936), 992.

Streptocaulon calophylla Wight, Contrib. Bot. Ind. (1834), 65; III. Bot. Ind. II (1850), 230, t. 182, fig. 1.

Slender scandent shrub, glabrous except the inside of the corolla. Young branchlets pale grey, striolate when dry, terete, older tawny, densely lenticellate, to 5 mm. in diameter; internodes 3-5 cm. long. Inter- and intra-petiole glandules dark purple, subulate, 1 mm. long, caducous. Leaves opposite, subcoriaceous, elliptic-lanceolate to oblong-lanceolate, acuminate, base acute, margin slightly revolute, 4.5-6 cm. long, 1.5 cm. wide; midrib impressed above and prominent beneath, lateral veins numerous, subparallel, anastomosing near the margin; petioles 1-2 mm. long. Cymes axillary, pleiochasial, many-flowered, 3-4 mm. long; bracteoles ovate, ciliolate, about 1 mm. long. Buds ovoid, obtuse. Calyx 5-partite, basal glandules 5, minute; segments quincuncial, ovate, ciliolate, 1.5 mm. long and 1 mm. wide; corolla dark purple, rotate, 1 cm. across, tube 1.5 mm. high; lobes slightly dextrorsely overlapping, glabrous without and densely white pilose within, oblong, obtusish, 5 mm. long, 2 mm. wide; corona annular, 5-lobed, lobes filiform, elongate, long-pilose, with an ascending lobule on each side at the base, 3-4 mm. long (described by some authors as 10-lobed); stamens 5, filaments very short, free from each other, ovate, acuminate, dorsally barbate, ciliolate, connivent around and adherent to the stigma; pollen-masses granular, solitary in 2 adjoining cells (a primitive type in the *Periplocoideae*), translator erect, dilated at the apex, spathulate, retinaculum triangular-ovate; ovary of 2 distinct carpels, ovoid, united by the very short style, stigmatic head disciform, pentagonal, apex obscurely bifid. Follicles geminate, elongate, cylindric, continuous, slightly divaricate, 12 cm. long and 5 mm. across; seeds oblong, about 3 mm. long, coma white-sericeous, about 3 cm. long, embryo narrow-oblong, cotyledons thin, 3 mm. long, radicle short, superior.

MOUNT OMEI: Fu-hu-ssu, alt. 600 m., scandent shrub, flowers greenish-white, *W. P. Fang*, Nos. 14104 & 14143, April 14, 1940; en route from Fu-hu-ssu to Hua-yen-ssu, alt. 780 m., scandent shrub, flowers greenish, hairy, *C. L. Chow*, No. 5747, April 3, 1942; Liang-fong-kang, scandent shrub, flowers green, *C. L. Chow*, No. 5760, April 6, 1942; Hei-lung-kiang, alt. 1000 m., in thickets, scandent shrub, flowers greenish, *W. P. Fang*, No. 18507, April 20, 1942; Chiang-shwei-chieh, scandent shrub, flowers greenish white, *W. P. Fang*, No. 18254, April 1, 1942; Pai-lung-ssu, alt. 950 m. in thickets, scandent shrub, flowers light yellow, *C. L. Sun*, No. 1453, April 10, 1940; near Ta-o-ssu, alt. 1100 m., among woods, scandent shrub, flowers whitish-green, *C. L. Sun*, No. 41, May 3, 1929; Kuang-fu-ssu, alt. 1000 m., scandent shrub, fruits green, *W. P. Fang*, No. 15522, November 25, 1940; Ni-hsin-ssu, alt. 980 m., scandent shrub, *W. P. Fang*, No. 17850, September 29, 1941; near Hung-chun-ping, alt. 1200 m., in thickets, scandent shrub, flowers greenish-yellow, *C. L. Sun*, No. 1417, March 18, 1940; near Taping, alt. 1400 m., in thickets, scandent shrub, flowers green, occasionally, *W. P. Fang*, No. 16080, April 3, 1941; Hsing-kai-ssu, alt. 1600 m., scandent shrub, fruits green, *W. P. Fang*, No. 15695; December 5, 1940; without precise locality, *K. L. Chu*, No. 6432, without date.

Distribution: Nepal; India; China—Hupei, Kweichow, Yunnan and new to Szechuan.

With ample material before me, I name them as this species with confidence. In 1924, in Notizblatt Bot. Gart. und Mus. Berlin-Dahlem, IX, 23-24, Dr. R. Schlechter proposed a new family, *Periplocaceae* to include plants having free filaments developing into a peculiar spathulate pollen-carrier, termed translator or caudicle in higher specialized forms, pollen-grains in tetrads, that is, germinate in each cell, and with the stigmatic head inflated into a flattened pentagonal club-shaped apex. All these characters constitute the subfamily, *Periplocoideae* in the sense of K. Schumann's in Engler's Pflanzenfamilien comprising altogether 37 genera of world wide distribution. Of this subfamily, only 6 genera, namely *Gymnanthera*, *Cryptolepis*, *Streptocaulon*, *Myriopterion*, *Periplaca* and *Stelmatocrypton* are attributed to the Chinese flora.

In the order *Apocynales* as circumscribed by Hutchinson, the *Asclepiadaceae* is fairly uniform in its family characters whereas the *Apocynaceae* strikes one as being more or less a heterogenous assemblage of which the subfamily *Plumeroideae* seems too foreign to be grouped with it. If Schlechter's segregation of *Periplocoideae* from the *Asclepiadaceae* is acceptable then it would be equally sound to eliminate *Plumeroideae* from the *Apocynaceae*. With the incorporation of a part of *Loganiaceae*, particularly the group of *Stachyros*, the elements entering into the *Plumeroideae* would constitute what appears to me, to be a more distinct natural family.

No subsequent authors has supported the proposal made by Schlechter 23 years ago, and the writer, pending further studies, is still inclined to retain the subordinate position of the subfamily *Periplocoideae* under *Asclepiadaceae*, regarding it as a transitional group to the *Apocynaceae*.

Y. Tsiang.

Fig. 1, habit (natural size); 2, a bud (enlarged 5 times); 3, a flower (enlarged 5 times); 4, calyx expanded to show the basal glandules (enlarged 10 times); 5, anthers, dorsal and ventral views (enlarged 15 times); 6, pollen-masses with translator and retinaculum (much enlarged); 7, a corolla-lobe with a coronal-lobe attached (enlarged 10 times); 8, the pistil (enlarged 12 times); 9, cross section of ovary (enlarged 30 times); 10, follicles (natural size); 11, seed (natural size); 12, embryo (enlarged 5 times).

圖版一百九十三

青蛇藤

蘿藦科

柔細攀緣灌木，除花冠內部而外，全部光滑。幼枝灰白色，乾時具裂紋，圓筒形，老枝黃褐色，密具皮孔，直徑約五公厘；節間長三至五公分，長於葉柄內外兩面之腺體深紫色，鑿形，長一公厘，早落。葉對生，半革質，橢圓狀披針形或長圓披針形，先端漸尖，基部銳形，邊緣略捲曲，長四公分半至六公分，寬一公分半；中肋上面隱沒，下面顯着，側脈甚多，略成平行排列，近邊緣處則相互交接成網狀；葉柄長一至二公厘。聚繖花序腋生，分枝不少，着花亦多，長三至四公厘；苞片卵圓形，具纖毛，長約一公厘。芽卵圓形，具鈍頭。花萼五裂，基部有細小腺體五個；萼片覆瓦狀排列，卵圓形，具纖毛，長一公厘半，闊一公厘；花冠深紫色，回旋形，徑長一公分，冠筒高一公厘半，花瓣略向右旋轉，互相疊合，外邊光滑，內面密具白色柔毛，長圓形，鈍頭，長五公厘，闊二公厘；副花冠環狀，五裂，裂瓣絲形，延伸，具長柔毛，基部兩側有小裂片呈上升形，長三至四公厘（亦有敘述副花冠為十裂者）；小蕊五枚，花絲甚短，彼此分離，花藥卵圓形，漸尖，背面具芒及纖毛，和聯圍列於柱頭外，並與柱頭密接；花粉團粒狀，兩兩相連成粒（在青蛇藤亞科 *Periplocoideae* 此為原始狀態），着生花粉之臂直立，頂端張大成匙形或三角狀卵圓形；子房為二個分離心皮組成，卵圓形，而短形花柱聯合，柱頭平圓，呈五角形，頂端略有分叉。骨莖成對，為長圓柱形，彼此連接，略呈歧狀，長十二公分，直徑五公厘；種子長圓形，長達三公厘，種毛白色，絲狀，長三公厘；胚呈狹長圓形，子葉較薄，長三公厘，幼根短而粗壯。

此種產於峨眉山之伏虎寺，黑龍江，涼風崗，白龍寺，大峨寺，廣福寺，牛心寺，洪椿坪，大坪，新開寺等處。四月開花，八月果可成熟。

本種分布於尼泊爾，印度，及中國之貴州，湖北，雲南，四川尚為新發現。

上面所引用之標本除兩號無花果外其餘均完全。著者自信其學名為正確無誤。在一九二四年時，R. Schlechter 博士曾為文發表青蛇藤科 *Periploceae* 為新科。其所屬植物之花絲分離，其着生花粉之節發育多成匙形；是項最高特化物名為粉團帶 translator 或 caudicle，花粉粒成對合生為四數體，柱頭頂端膨大成五角棒形。據上項特點，由 R. Schuman 之意列青蛇藤為一亞科 *Periplocoideae*，有三十七屬植物分布於全世界，其分布於中國者則僅有 *Gymnanthera*, *Cryptolepis*, *Streptocaulon* 擬梗藤，*Myrioperon* 婆婆針線包，*Periploca* 藤蛇青 及 *Stelmatoeryton* 等六屬植物。

哈欽松博士認為此類植物應屬於夾竹桃部之範圍以內，又蘿藦科植物及夾竹桃科植物之特點甚為類似，訂定之亦覺複雜，其山橙亞科 *Plumeroideae* 則極似有外來品性連合。如果 Schlechter 將此青蛇藤亞科從蘿藦科分出認為合理，則山橙亞科 *Plumeroideae* 之從夾竹桃科分出亦可承認矣。蓋此亞科與馬錢部相混，尤與馬錢子屬 *Stachyros* 植物為著，為其組成亞科之元素，自與夾竹桃科有別。

在 Schlechter 博士倡上說後二十三年間，無人維護其意，作者經多年研究，亦認為此青蛇藤亞科應仍屬於蘿藦科，其地位雖不能確定，而為夾竹桃科至蘿藦科之過程植物，可以無疑。

圖解：1. 枝葉（原大）； 2. 芽（放大五倍）； 3. 花（放大五倍）； 4. 展開之花萼以示基部之腺體（放大十倍）； 5. 花藥之背腹兩面（放大十五倍）； 6. 花粉團及粉團帶（特別放大）； 7. 花冠裂片及其相連之副冠裂片（放大十倍）； 8. 大蕊（放大十二倍）； 9. 子房橫剖面（放大三十



193. *Periploca calophylla* (Wight) Falconer



Plate 194.

PANAX WANGIANUM Sun.

Arallaceae.

Panax Wangianum Sun. sp. nov.

Herba, perennis, circiter 47 cm. alta, caulis glabra. Folia digitatim, petioli circiter 8-10 cm. longi, glabri. Foliola 7, petioluli circiter 5-15 mm. longi, glabri, ovati vel ovato-lanceolati vel lanceolati, 3.5-11 cm. longi, 1.5-3 cm. lati, supra glabri cum frequentibus setis in nervis, infra setae raras, apice acuminata, base rotundata vel cuneata, saepe unilateralis, margine serrulata. Umbellis 3, terminalis circiter 3 cm. diametris, ceteri minutuli, circiter 5-7 mm. diametris, pediculus circiter 25 cm. longus, glabrus vel pubescens, pedicellis circiter 1.2 cm. longus, pubescens, bracteolae minutae, angustae lanceolatae. Flores perfecti, calycis margo 5-dentata, petala 5, imbricata, stamina 5, ovarium 2-loculatum, styli 2 conjuncti una apicem. Fructus ignotus.

Herb, about 47 cm. or more high, stems glabrous, smooth. Leaves 5, digitate, terminal, verticillate, petiole 8-10 cm. long, glabrous. Leaflets 7, petiolule 5-15 mm. long, glabrous, blade ovate or ovate-lanceolate or lanceolate, 3.5-11 cm. long, 1.5-3 cm. broad, glabrous with scattered bristles along the veins numerous on the upper surface, but sparsely so beneath, apex acuminate, base rounded or tapering, often unilateral, margin serrate. Umbels 3, the terminal one about 3 cm. in diameter, the others very small, 5-7 mm. in diameter, peduncle about 25 cm. long, glabrous, pubescent on the upper portion, pedicels about 1.2 cm. long, pubescent, bracteoles minute narrow, lanceolate-linear. Flowers perfect or polygamous-monoecious, calyx-margin 5-toothed, petals 5, imbricate, stamens as many as petals, anthers 2, longitudinally dehiscent, introrse, ovary 2-celled, styles 2, united nearly to summit. Fruit unknown.

MOUNT OMEI: Hung-chun-ping (洪椿坪), alt. 1147 m., flower greenish, H. C. Chow, No. 12207 (type), June 19, 1940. Type in the Herbarium of Biological Department, National Wu-han University, Wu-chang, Hupeh.

This new species is most closely related to *P. pseudo-ginseng* Wallich but is easily distinguished by its 7 leaflets, and the blade often with a pronounced unilateral base. It is considered by monks to be a valuable medicine.

This new species is named in honour of President Hsin-Kung Wang of the National Wu-han University, for his unfailing interest and support in botanical research.....S. C. Sun.

Fig. 1, habit sketch ($\frac{1}{4}$ times natural size); 2, a flower bud (enlarged 30 times); 3, a single flower (enlarged 30 times); 4, a vertical section of flower (enlarged 80 times); 5, a cross-section of ovary (enlarged 80 times).



圖版一百九十四

王氏三七 新種

五加科

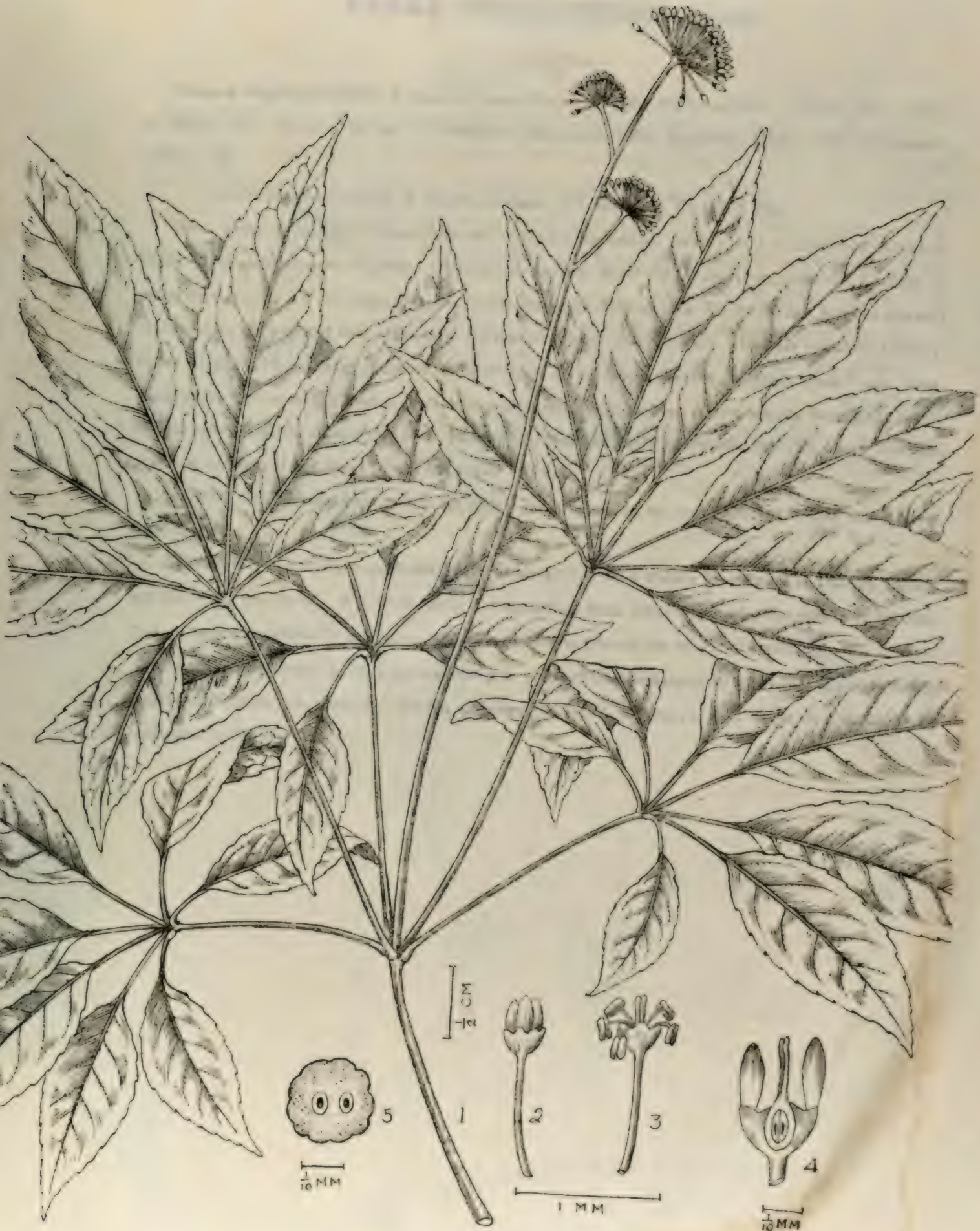
草本，高約四十七公分以上，莖平滑。葉五枚，指狀，頂端輪生，葉柄長約八至十公分，光滑。小葉七枚，小葉柄長約五至十五公厘，光滑，小葉片卵形或卵狀披針形或披針形，長約三公分半至十一公分，寬約一公分半至三公分，光滑，沿葉脈處有稀疏之剛毛，表面為數甚多，裏面則較少，尖端漸尖形，基部圓形或逐漸尖細；常為單一側生，邊緣鋸齒。繖形花序有三，頂端甚大，直徑約三公分，其他二枚則甚小，直徑約五至七公厘，花軸長約二十五公分，光滑，上部有短柔毛，小花梗長約十二公厘，有短柔毛，小苞狹小，披針線形。花兩性或單性花與兩性花共存，萼片五裂；花瓣五枚，覆瓦狀，小蕊與花瓣同數，藥胞二枚，縱裂，內向；子房二室，花柱二枚，相連及於頂端，果實不知。

產峨眉山洪椿海坪拔一千一百四十七公尺處，六月開花，花色綠，係周鶴昌先生所採集，模式標本存國立武漢大學生物學系標本室。

此新種之命名「王氏三七」係從國立武漢大學校長王星拱先生之姓，以誌王先生對提倡研究植物學之盛意。

圖解：1. 植物全形（原形四分之三）； 2. 花芽（放大三十倍）； 3. 花（放大三十倍）； 4. 花之縱剖面（放大八十倍）； 5. 子房之橫剖面（放大八十倍）。

(Type in the Herbarium of Biological Department, National Wuhan University, Wu-chang, Hsueh.)
 This new species is most closely related to *S. snow-gum* Wallich but is easily distinguished by its Y leaflets, and the blade often with a pronounced unilateral base. It is considered by monks to be a valuable medicine.
 This new species is named in honor of President Hsin-Kung Wang of the National Wuhan University for his valuable interest and support in botanical studies.
 Fig. 1. Habit sketch (1 times natural size); 2. a flower bud (enlarged 30 times); 3. a single flower (enlarged 30 times); 4. a section of flower bud (enlarged 80 times); 5. a section of ovary (enlarged 80 times).



194. *Panax wangianum* Sun



PANAX BIPINNATIFIDUS Seemen.

Arallaceae.

Panax bipinnatifidus Seemen in Journ. Bot. VI (1868), 54; Rev. Heder. (1869), 100.- Harms in Engler Nat. Pflanzfam. III, no. 3 (1898), 60.- Handel-Mazzetti, Symbolae Sinicae, VII, Lieferung 3, (1933), 706.

Aralia bipinnatifida C. B. Clarke in Hook., Fl. Brit. Ind. II (1879), 722.

Herb, about 72 cm. high; stems glabrous, rootstock horizontal, deeply and transversely wrinkled, about 17 cm. long. Leaves digitate, verticillate, petiole about 10-11 cm. long, glabrous. Leaflets 5, petiolule 3 mm. to 2.5 cm. long, glabrous, blade pinnatifid, 8-8 cm. long, 2-4 cm. broad, bristles sparsely scattered on the veins of both side, thin, deep green above, pale beneath. Umbels terminal, solitary, peduncle about 15 cm. long, glabrous or with hairs on the upper portion, pedicels about 5 mm. long, glabrous or with hairs. Flowers perfect or polygamous-monoecious, calyx-margin 5-toothed, petals 5, imbricate, stamens as many as petals, anthers 2, longitudinally dehiscent, introrse, ovary 2-celled, styles 2, connate at the base. Fruit not seen.

MOUNT OMEI: Hsi-hsiang-chih (洗象他), alt. 2100 m., in the woods, C. H. Chow, No. 12410. July 13, 1940.

This species is very rare on Mount Omei, although it is very widely distributed in Yunnan, SIKANG and Szechuan provinces. It is very easily distinguished from other species by the pinnatifid leaflets. The rootstock is generally used as a kind of medicine to promot the healing of wounds.....S. C. Sun.

Fig. 1, habit sketch ($\frac{1}{2}$ times natural size); 2, a flower bud (enlarged 30 times); 3, a, single flower (enlarged 30 times); 4, a vertical section of flower (enlarged 60 times); 5, a cross section of ovary (enlarged 70 times).

圖 一 百 九 十 五

羽 葉 三 七

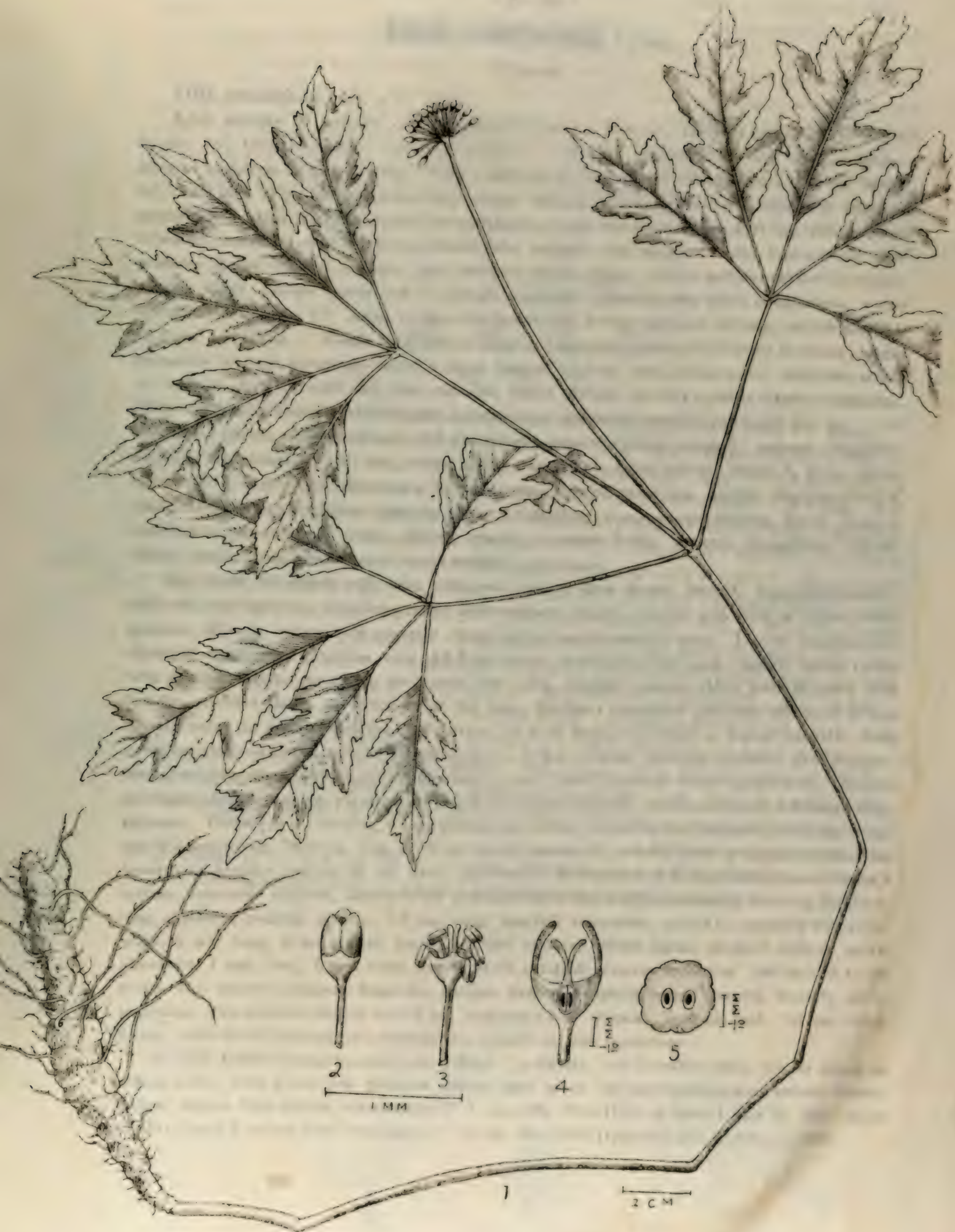
五 加 科

草本。高約七十二公分，莖平滑，根莖水平，有甚深之橫形綫紋，約長十七公分。葉指狀，輪生，葉柄長約十至十一公分，光滑。小葉五枚，小葉柄長約五公厘至二公分半，光滑，小葉片羽狀，長約五至八公分，寬約二至四公分，剛毛稀疏，分散於葉之兩面葉脈上，葉片薄，表面深綠，裏面較淡。繖形花序單一而頂生，花軸長約十五公分，光滑或上部有毛，小花梗長約五公厘，光滑或有毛。花兩性或單性花與兩性花共存，萼片五裂，花瓣五枚，覆瓦狀，小蕊與花瓣同數，藥胞二枚，縱裂，內向，子房二室，花柱二枚，基部相合，果實未見。

此種產峨眉山洗象池海拔二千一百公尺處森林中，七月開花。

本種分佈雲南，西康，四川各省，而峨眉山則甚少見，其別於他種之處，則為小葉羽狀。根莖可為治療創傷之用。

圖解： 1. 植物全形（原形四分之三）； 2. 花芽（放大三十倍）； 3. 花（放大三十倍）； 4. 花之縱剖面（放大六十倍）； 5. 子房之橫剖面（放大七十倍）。



195. *Panax bipinnatifidus* Seem



105. Panax bipinnatifidus Seem.

Plate 196

TILIA OMEIENSIS Fang.

Tiliaceae.

Tilia omeiensis Fang, spec. nov.

Arbor circiter 10 metralis, cortice fusco-cinereo vel brunneo, levi; ramuli graciles, glabri, flavido- vel brunneo-virides. Gemmae axillares, ovoidae, perulis acutis vel obtusis glabris margine ad apicem ciliatis obtectae. Folia membranacea, oblonga vel oblongo-ovata, 9-11 cm. longa, 4-5.5 cm. lata, apice breviter acuminata, margine integra, rarius apicem versus denticulis obsolete paucis mucronulatis instructa, leviter inaequaliterata, latere exteriori latiora, basi raro subauriculata rotundata, latere interiori paulo angustiore infra medium plus minusve excisa, basi angusto haud producto obtusa vel fere truncata, supra saturate viridia, glabra, subtus pallido- vel flavido-viridia, primum dense demum sparse cinereo-stellato-tomentosa, costa media supra canaliculata, nervis lateralibus utrinsecus 6-7, supra in sicco vix prominulis, subtus costaque elevatis; petioli graciles, 2-2.5 cm. longi, glabri. Flores 9-12, cymas longe pedunculatas, pedunculo incluso 14-16 cm. longas formantes; bracteae linear-oblongae, 14-16 cm. longae, 2-2.2 cm. latae, subsessiles, apice late acutae vel obtusae, basi cuneatae vel late cuneatae, supra glabrae vel pilis stellatis disperse instructae, subtus dense cinereo-stellato-tomentosae, infra medium pedunculo adnatae; pedunculi graciles, 11-12 cm. longi, glabri; pedicelli tenues, 1-2 cm. longi, sparse tomentosi; sepala 5, anguste triangulari-ovata, 5 mm. longa, 2 cm. lata, extus cinereo-tomentosa, intus villosa; petala 5, flava, ovato-lanceolata, 7 mm. longa; staminodia 5, petaloidea; stamina numerosa, petalis dimidio breviora, filamentis gracilibus, glabris; anthera flava, ellipsoidea; ovarium obovoideum dense cinereo-tomentosum, stylo 6 mm. longo, glabro, gracile, stigmate 5-fido. Fructus obovoidens, 1.2 cm. longus, 6 mm. latus, verruculosus, dense stellato-tomentosus.

Tree about 10 metres tall; bark yellowish-grey or dark brown, smooth; branchlets slender, glabrous, yellowish- to brownish-green. Buds axillary, ovoid, covered with acute or obtuse scales glabrous on both surfaces and sparsely ciliate on the margin near the apex. Leaves membranous, oblong or oblong-ovate, 9-11 cm. long, 4-5.5 cm. broad, acuminate at the apex, margin entire, rarely with a few obsolete mucronate teeth near the apex, slightly unequal-sided with the outer side broader, rounded rarely subauriculate at the base, the inner somewhat narrower side more or less excised below the middle, with the base narrow, not at all produced, obtuse or almost truncate, deep green and glabrous above, pale- or yellowish-green, at first densely, at length sparsely, grey stellate-tomentose beneath, midrib minutely grooved above, with 5-7 lateral veins on each side, scarcely prominent above when dry, elevated as well as the midrib beneath; petioles slender, 2-2.5 cm. long; glabrous. Flowers 9-12, forming a long-pedunculate cyme, including the peduncle, 14-16 cm. long, bracts linear-oblong, 14-16 cm. long, 2-2.2 cm. broad, subsessile, broadly acute or obtuse at the apex, cuneate or broadly cuneate at the base, glabrous or with scattered stellate hairs above, densely stellate tomentose beneath, adnate to the peduncle below the middle; peduncles slender, 11-12 cm. long, glabrous; pedicels slender, 1-2 cm. long, sparsely tomentose; sepals 5, narrowly triangular-ovate, 5 mm. long, 2 mm. broad, grey-tomentose outside, villose inside; petals 5, yellow, ovate-lanceolate, 7 mm. long, 5 mm. wide; staminodes 5, petaloid; stamens numerous, half as long as the petals with slender glabrous filaments; anthers yellow, ellipsoid; ovary obovoid, densely grey-tomentose with glabrous slender style 6 mm. long and a 5-fid stigma. Fruit obovoid, 1.2 cm. long, 6 mm. wide at the broadest part, verruculose, densely stellate tomentose.

MOUNT OMEI: Chang-lao-ping, alt. 1600 m., in forests, tree 10 metres high, leaves oblong or oblong-ovate, deep green and glabrous above, light green and greyish-tomentose below; flowers yellow; bracts light yellow; occasionally; *T. C. Lee*, No. 2936 (type of flower), July 22, 1940; same locality, tree 8-9 metres high, fruits grey, *T. C. Lee*, No. 3984 (type of fruit), October 17, 1940.

This new species is characterized by obovoid fruits, long bracts, glabrous petioles, and oblong leaves stellate-tomentose on the lower surface. It may be compared with *Tilia oblongifolia* Rehder, *T. lepidota* Rehder and *T. tuan* Szyszylowicz; but *T. oblongifolia* differs in glabrous leaves; *T. lepidota* in having bracts much shorter than the flowering inflorescence and adnate to the peduncle only at the base, and *T. tuan* to which the new species appears to be more nearly allied, is at once distinguished by tomentose petioles, ovate leaves and subglobose not obovoid fruits..... W. P. Fang

Fig. 1, a fruiting branch (natural size); 2, a portion of flowering branch (natural size); 3, a flower (enlarged 5 times); 4, a staminode with stamens (enlarged 5 times); 5, a portion of a leaf to show the tomentum on its lower surface (enlarged 10 times); 6, a portion of the undersurface of a bract to show the tomentum (enlarged 10 times).

圖版一百九十六

峨眉檫樹 新種

田麻科

落葉喬木，高約十公尺；樹皮黃灰色或暗棕色，平滑；小枝纖細光滑無毛，黃綠色或棕綠色。芽腋生，卵形；芽鱗銳形或較鈍，旋捲，兩面均光滑無毛，僅邊緣及近先端處略有纖毛。葉膜質，長方形或長方卵形，長九至十一公分，闊四公分至五公分半，先端漸尖形，基部一側鈍形或截形，另一側圓形或耳形，葉緣完整，先端處偶具隱約齒裂，葉面深綠色，光滑無毛，葉背灰綠色或黃綠色，幼時被濃密星狀灰色氈毛，漸長毛漸稀疏，中肋在表面成淺溝狀，在背面突起，側脈每側六七條，在表面隱沒，在背面清晰可見；葉柄細長，長二公分至二公分半，光滑無毛。花九至十二朵成聚繖花序，連同花梗共長十四至十六公分；苞片綫狀長方形，長十四至十六公分，闊二十至二十二公厘，近於無柄，先端銳尖形或鈍形，基部楔形或闊楔形，光滑無毛，亦或在表面生育稀疏灰色星狀氈毛，背面被濃密之星狀氈毛。花梗細長，長十一至十二公分，插生於苞片中部稍下處；小花梗長一至二公分，細長，被稀疏氈毛；花萼五片，狹三角卵形，長五公厘，闊二公厘，外側被灰色氈毛，內側被長柔毛；花瓣五瓣，黃色，卵狀披針形，長七公厘，無藥小蕊五本，花瓣狀；小蕊多數，長及花瓣之半，花絲細長，光滑無毛，花藥黃色，橢圓形，二室，子房倒卵形，被濃密灰色氈毛，花柱長六公厘，光滑無毛，柱頭五裂。果實倒卵形，長十二公厘，闊六公厘，具小點狀突起，被灰色星狀氈毛。

此種產峨眉山長老坪之森林中，海拔一千六百公尺處。七月開花，十月果成可熟。此新種之特性在其倒卵形果實，長方形大苞片，光滑無毛之葉柄及背面被星狀氈毛之長方形葉片。本種與矩圓葉檫樹，鱗毛樹及樹親緣相近。然矩圓葉檫樹之葉背光滑無毛；鱗毛樹之苞片短於花序，且與花梗於基部相貼合；檫樹與此種尤為相近，但檫樹之葉柄被氈毛，葉卵形，果近於圓球形，非倒卵形。均與此新種極易區別也。

圖解：1, 着果之枝 (原大)；2, 着花之枝 (原大)；3, 花 (放大五倍)；4, 小蕊及無藥小蕊 (放大五倍)；5, 葉之一部示背面之毛被 (放大十倍)；6, 苞片之一部示背面之毛被 (放大十倍)。



196. *Tilia omeiensis* Fang



Plate 197.

TILIA TUAN Szyszylowicz.

Tiliaceae.

Tilia tuan Szyszylowicz in Hooker Icon. Pl. XX (1890), t. 1926.- Diels in Engler, Bot. Jahrb. XXIX (1900), 468.- Schneider, III. Handb. Laubholz. II (1909), 389, fig. 289 f-g.- Rehder & Wilson in Sargent, Pl. Wilson. II (1915), 362.- Hu in Hu & Chun, Icon. Pl. Sin. IV (1935), 41, pl. 191.- Rehder, Manual Cult. Trees & Shrubs (1927), 617.

Tilia tuan var. *Cavaleriei*, V. Engler & Leveille in Fedde, Repert. Spec. Nov. VI (1909), 263.- V. Engler, Monog. Tilia, (1909), 124.- Leveille, Fl. Kouy-Tcheou, (1918), 420.

Tilia tuan, var. *Cavalerisii*, f. *divaricata* V. Engler, Monog. Tilia, (1909), 124.

Tilia tuan, var. *pruinosa* V. Engler, Monog. Tilia, (1909), 124.

Deciduous tree, usually 15 up to 20 metres high; bark grey, fissured, rough; branchlets stout, terete, tomentose when young and glabrescent when old, conspicuously lenticellate, those of the current year yellowish-brown, those of more than one year old yellowish-grey. Buds ovoid, scales acute, densely tomentose outside. Leaves membranaceous, ovate or obliquely ovate, 10-12 cm. long, 5.5-7. cm. broad, acuminate at the apex, oblique at the base, cuneate at one side and auriculate or cordate at the other side, entire or slightly and remotely serrate near the apex with a few minutely mucronulate small teeth, upper surface deep green, glabrous, lower surface appressed stellate-grey-tomentose, lateral veins 7-9 at each side of the midrib, obsolete above, prominent below; petioles slender, 2-2.5 cm. long, tomentose. Flowers 7-9 in a cyme; bracts spatulate, 12-15 cm. long, 1.8-2.2 cm. broad, broadly acute at the apex, cuneate at the base, upper surface green, glabrous, lower surface pale green, appressed stellate-tomentose; pedicels slender, 1.2-1.8 cm. long, stellate-tomentose; peduncles slender, 10-12 cm. long, adnate to the bract below the middle; sepals 5, triangular-ovate, 3-5 mm. long, stellate-tomentose outside, villous inside; petals 5, ovate-lanceolate, 7-8 mm. long; staminodes 8, petaloid; stamens numerous, shorter than petals and staminodes, filaments slender, glabrous, anthers yellow, 2-celled; ovary subglobose, stellate-tomentose, styles glabrous, stigma simple or slightly lobed. Fruit subglobose, warty, stellate-tomentose.

MOUNT OMEI: without precise locality, *W. C. Cheng*, No. 6814, October 1936; southwest of Mount Omei, Hung-ya-hsien, Chang-cheng, at roadside, tree 20 metres high, bark brown, fissured, leaves subcordate, abruptly acuminate, whitish tomentose at the lower surface, flowers yellow, sepals and pedicels densely tomentose, *G. W. Yao*, No. 4154, July 14, 1939.

Distribution: Kiangsu, Kiangsi, Hupeh, Szechuan, Kwelchow, Kwangsi.

This is the first time of the species reported from Mount Omei. The characteristics are very variable. Yao's 4154 has densely tomentose buds and fully opening flower with very short style.

.....*W. P. Fang*.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a flower (enlarged 3 times); 4, a staminode with stamens (enlarged 5 times); 5, a portion of leaf showing stellate-tomentum (enlarged 5 times); 6, a portion of bract showing the stellate-tomentum (enlarged 5 times).

圖版一百九十七

椴 樹

田 麻 科

落葉喬木，高十五至二十公尺；樹皮灰色，縱裂，粗糙；小枝粗壯，圓柱形，上具明顯皮孔，一年生者黃棕色，被細毛，一年以上者黃灰色，無毛。芽爲卵圓形，芽鱗銳形，外面密被細毛。葉膜質，卵形或長方卵形，長十至十二公分，闊五公分半至七公分，先端尖尾狀，基部偏斜，一側楔形，另一側則爲耳形或心臟形，邊緣完整無缺，或僅於先端具尖頂稀疏小鋸齒，葉表面綠色，光滑無毛，葉背灰綠色，被厚星狀灰色氈毛，側脈每側七至八條，在葉面隱沒，在葉背突起；葉柄細長，長二至二公分半，被氈毛。花七至九朵成一聚繖花序；苞片匙形，長十二至十五公分，闊十八至二十二公厘，先端闊銳形，基部楔形，表面綠色，平滑無毛，背面灰綠色，密被星狀氈毛；小花梗纖細，長十二至十八公厘，被星狀氈毛；花梗細長，長十至十二公分，與苞片下半部合生；花萼五片，三角卵形，長三至五公厘，外被星狀氈毛，內被長絨毛；花瓣五枚，卵狀披針形，長七至八公厘；無藥小蕊五枚，花瓣狀；小蕊多數，較花瓣及無藥小蕊爲短，花絲細弱，光滑無毛，花藥黃色，二室；子房亞圓球形，被星狀氈毛，花柱平滑無毛，柱頭不分裂或分裂甚淺。果實球形，上有瘤點，并被星形氈毛。

此種產於峨眉山及峨眉山西南之洪雅縣之張村。七月開花，十月果可成熟。

此種分佈於江蘇，江西，湖北，四川，貴州，及廣西等省。

本種在中國分佈區域雖廣，然發現於峨山，尙屬首次，其特性亦多變異，如姚君4154號標本之花柱極短而冬芽表面密被氈毛。

圖解： 1. 着花之枝（原大）； 2. 着果之枝（原大）； 3. 花（放大三倍）； 4. 小蕊及無藥小蕊（放大五倍）； 5. 葉之一部示星狀毛（放大五倍）； 6. 苞片之一部示星狀毛（放大五倍）。



197. *Tilia tuan* Szyszylowicz



Plate 198.

TILIA NOBILIS Rehder et Wilson.

Tiliaceae.

Tilia nobilis Rehder et Wilson in Sargent. Pl. Wilson. II (1915), 363. —Hu fu Hu et Chuu. Icon. Pl. Sin. IV (1935), 39, t. 189.

Small tree, 7-9, rarely up to 12, metres high; branchlets glabrous, greenish-yellow or brownish-yellow. Winter-buds axillary, broadly ovoid, 7-9 mm. long, scales obovate, revolute, glabrescent or slightly puberulus near the apex. Leaves alternate, coriaceous, orbicular-ovate, 12-15 cm. long, 8-11 cm. broad, abruptly acuminate on the apex, obliquely subcordate or cuneate at the base, sharply serrate on the margin, teeth aristate-acuminate, upper surface deep green, glabrous, lower surface pale green, glabrous to sparsely stellate-pubescent, bearded with tufted hairs in the axils of veins, lateral veins 7-9, obsolete above, elevated below; petioles stout, cylindrical, 4-6 cm. long, glabrous. Flowers 2-5 in cymes; bracts narrow-oblong or oblanceolate, 8-11 cm. long, 1.9-2.5 cm. broad, rounded at the apex, abruptly contracted at the base, sessile, greenish-yellow or brownish-yellow, glabrescent or sparsely pubescent, adnate to the peduncle below the middle; sepals 4, triangular-ovate, acute, 5 mm. long, 3-4 mm. broad, stellate-pilose outside, villous at the apex and base inside; petals 4, concave, ovate-lanceolate, 6-8 mm. long, 3 mm. broad, truncate or slightly erose at the apex, cuneate at the base; staminodes 5, petaloid, spatulate, as long as the petals; stamens numerous, glabrous, shorter than the petals; ovary superior, subglobose, tomentose, style thick, glabrous, stigma simple or slightly lobed. Fruit obovoid, 9-12 mm. long, 7-8 mm. in diameter, 5-angled, apiculate, densely and appressedly tomentose.

MOUNT OMEI: Tsuan-tien-po, alt. 2000 m., at side of forests, shrub 5-6 metres high, leaves green, flowers light green, *T. C. Lee*, No. 2901, July 21, 1940; Ta-cheng-ssu, alt. 2600 m., small tree 7-8 metres high, fruits obovoid, hairy, occasionally, *T. C. Lee*, No. 3909, October 14, 1940; Kung-pei-shan, tree 12 metres high, *C. W. Yao*, No. 5188, September 13, 1939; southwest of Mount Omei, Opien-hsien, Shui-tung-shan, on slopes, tree 10 metres high, leaves ovate, remotely serrate, flowers in buds, *C. W. Yao*, No. 4162, July 15, 1939.

This species was discovered by the late Dr. E. H. Wilson at Wa-shan and Wa-wu-shan, west of Mount Omei. Through our extensive explorations we have found it on the upper slopes of Mount Omei. Its distribution is very limited as so far it has been known only from this region. It differs from its near ally, *Tilia chinensis* Maximowicz, in the smaller bracts and leaves which are glabrous or only slightly pubescent.

.....W. P. Fang.

Fig. 1, a flowering branch (natural size); 2, a fruiting branch (natural size); 3, a flower (enlarged 5 times); 4, inner side of the sepal (enlarged 5 times); 5, staminode and stamens (enlarged 5 times); 6, tufted hairs at the axils of veins on the leaf (enlarged 8 times); 7, stellate hairs (enlarged 10 times).

圖 一 百 九 十 八

大 椴 樹

田 麻 科

喬木高七至九公尺，稀達十二公尺；小枝光滑無毛，黃綠色或黃褐色。冬芽腋生，闊卵圓形，長七至九公厘，芽之鱗片倒卵圓形，微外旋，光滑或於其近先端處微被毛。葉互生，革質，卵形或近於圓形，先端尖銳，基部成傾斜之亞心臟形或截形，長十二至十五公分，闊八至十一公分，邊緣具尖銳之鋸齒，其先端尖銳常成芒狀，表面深綠色，光滑無毛，背面淺綠色，光滑或疎被星狀絨毛，葉脈之腋則被叢生之毛，側脈七至九條，在葉之表面不顯，在葉之背面則突起；葉柄粗壯，圓柱形，長四至六公分，光滑無毛。花常二至五枚成聚繖花序，苞片成狹長圓形或倒披針形，長八至十一公分，闊十八至二十五公厘，先端圓形，基部狹小，近於無柄，黃綠色或黃褐色，無毛或疎被絨毛，下半部與花梗合生；萼片四枚，成三角狀卵形，先端銳形，長六公厘，寬三至四公厘，表面被星狀粗毛，裏面之先端及基部均被柔毛；花瓣四枚，內側凹形，外形為卵狀披針形，長六至八公厘，闊三公厘，先端截形或微缺，基部楔形；退化之不孕小蕊五本，匙形，狀似花瓣，且與花瓣等長；小蕊多數，無毛，短於花瓣；子房上位，亞圓球形，被柔毛，花柱粗壯而無毛，柱頭完整或微裂。果實倒卵圓形，長九至十二公厘，直徑七至八公厘，五稜，先端尖銳，密被絨毛。

此種產於峨眉山之鑽天坡及大乘寺等處森林中。

此種原係初次發現於瓦山及瓦屋山。經近年詳細調查，在峨眉山亦頗習見。其分佈則限於此區，此種與華椴樹親緣最近。兩種之區別，在此種小形之苞片及葉均係光滑無毛或微被絨毛耳。

圖解： 1. 着花之枝（原大）； 2. 着果之枝（原大）； 3. 花（放大五倍）； 4. 萼片之內側（放大五倍）； 5. 小蕊及退化之不孕小蕊（放大五倍）； 6. 葉腋之叢毛（放大五倍）； 7. 星狀之毛（放大十倍）。



198. *Tilia nobilis* Rehder et Wilson

木蘭科植物



Plate 199.

BAUHINIA YUNNANENSIS Franchet.

Leguminosae.

Bauhinia yunnanensis Franchet, Pl. Delavay. (1890), 190.-Hooker in Bot. Mag. LVIII (1902), tab. 7814.- Craib in Pl. Wilson. II (1914), 89.-Blades in Gard. Chron. LXXXVI (1929), 402, no. 2239.-Handel-Mazzetti, Symb. Sinicae, VII, Lieferung 3 (1931), 540.-Rehder in Journ. Arn. Arb. XIII (1932), 322.-Luetta Chen in Lingn. Sci. Journ. XVIII (1939), 960.

Bauhinia altifissa Leveille, Fl. Kouy-Tcheou (1914), 226, Esquirol No. 3056 excl.

Glabrous climbing shrub. Branches slender; subangulate or terete, green, glabrous; tendrils slightly flattened, usually in pairs. Leaves membranaceous or subcoriaceous, glabrous, green above, pale green below, bipartite or deeply two-lobed; lobes obliquely ovate, 2.5-4, rarely up to 5.5 cm. long, 2-3 cm. broad, obtuse or subrotund at the apex, truncate or subcordate at the base, entire on the margin, each lobe containing 3 or 4 primary veins which are only one-half or two-third from the base conspicuous and the remaining part usually obsolete, secondary veins inconspicuous; mucro between the two lobes is usually very stiff, 3-5 mm. long; petioles 2-3.5 cm. long, slender, glabrous; usually swollen at the bases. Inflorescences glabrous racemous, 7-10 cm. long, containing 7-12 flowers; bracts falling off early, bracteoles ensiform, 3-4 mm. long; flowers 3-3.5 cm. long, 2.5-3 cm. in diameter; calyx-tube cylindrical, 5-8 mm. long, calyx bipartite and shallowly 5-lobed, lobes ovate or obsolete, 6-8 mm. long, slightly pubescent near the apex; petals 5, spatulate, 1-1.5 cm. long, purple, the upper ones with 3 streaks of carmine from the base to the middle, the 2 lower ones with only one median streak; stamens 10, only 3 fertile, usually 2.7-3 cm. long, filaments glabrous, anthers oblong, 4.6 mm. long, the other 7 stamens sterile with short filaments and globose imperfect anthers; ovary long-stipitate, glabrous, linear-oblong, style stout, incurved, stigma capitate; Pedicels slender, glabrous, 1.5-2 cm. long. Fruit a flat, linear legume, 11-15 cm. long, 1.2-1.4 cm. broad, containing numerous ovoid seeds.

SOUTHWEST OF MOUNT OMEI: Opien-hsien, *W. C. Cheng*, Nos. 6510 & 6516, in 1938; same locality, en route from Shaping to King-kuo-ho, in thickets, climbing shrub, flowers reddish-white, young fruits green, *C. L. Sun*, No. 1019, August 22, 1939; same locality *T. S. Chao*, No. 57, in 1938.

Distribution: southwestern Szechuan, Kweichow, Yunnan.

This species differs from other species in the narrow legume, the stout twicely involuted tendrils and the bipartite leaves which have a long and stiff mucro between the lobes.....*W. P. Fang*.

Fig. 1, a flowering branch (natural size); 2, a flower (enlarged 2 times); 3, a legume (natural size).

Bauhinia hupehana Craib in Sargent, Pl. Wilson. II (1914), 89.-Handel-Mazzetti, Symb. Sinicae, VII, Lieferung 3 (1931), 540.-*Fang* in Icon. Pl. Omeiens. 1, No. 2 (1944), pl. 96.

MOUNT OMEI: Hung-chun-ping, alt. 1147 m., *T. H. Tu*, No. 978, in 1935; same locality, scandent shrub, flowers rose-red, *W. P. Fang*, No. 16809, May 28, 1941; Chu-tien, alt. 1800 m., *S. S. Chien*, No. 6051, July 11, 1937; same locality, scandent shrub, flowers in buds, *W. P. Fang*, No. 16736, May 23, 1941; southwest of Mount Omei, Opien-hsien, shrub 1.5 metres high, *W. C. Cheng*, No. 6056, June 36, 1936; same locality, *S. N. Hsu*, No. 22, in 1937; without precise locality, *C. W. Yao*, No. 2908, in 1938.

SZECHUAN: Wu-shan-hsien, *K. L. Chu*, Nos. 1887 & 2163, in 1935; Kuan-hsien, Mt. Tsing cheng, in forests, scandent shrub, flowers in buds, *W. P. Fang*, No. 13539, May 9, 1939.

SIKANG: Tien-chuan-hsien, *P. C. Tai* & *C. M. Teng*, No. 4226, July 21, 1939.

Distribution: Hupeh, Szechuan, Sikang, Chekiang, Fukien, Kiangsi, Hunan, Kweichow, Kwang-tung, Hongkong.

This species is fairly common at the lower slopes of Mount Omei.....*W. P. Fang*.

圖版一百九十九

雲南羊蹄葉

豆 科

攀援灌木。枝細長略具稜角或成圓柱形，綠色無毛；捲鬚微扁，常成對而生。葉膜質或亞革質，平滑無毛，葉表面綠色，葉背灰綠色，葉片左右分裂為二部或成二枚深裂片；裂片斜卵圓形，長二公分半至四公分，間有達五公分半者，闊二至三公分，先端銳形或近於圓形，基部截形或略成心臟形，全緣；每片有側脈三或四根，每脈僅有一半或最多三分之二明顯，其餘部分隱沒，小脈完全隱沒不顯；兩裂片中間有尖頭甚堅硬，長三至五公厘；葉柄長二至三公分半，細長，平滑無毛，基部多膨大。花成總狀花序，長七至十公分，約有花七至十二朵，苞片早落，小苞片楔形，長三至四公厘；花長三至三公厘半，直徑二公厘半至三公厘，萼筒圓柱形，長五至八公厘，萼片二分，一部有淺裂片三，一部有淺裂片二，裂片卵圓形或不發育，長六至八公厘，先端微被毛，花瓣五枚，匙形，長一至一公分半，紫色，上面兩瓣有紅色條紋三條由基部伸至中部，下面兩瓣則僅有一條紋，小蕊十本，僅三本具花藥，長二十七公厘至三十公厘，花絲平滑無毛，花藥長方形，長四至六公厘，其餘七本無藥小蕊僅有短花絲，上具球形發育不全之花藥，子房具長柄，平滑無毛，線狀長方形，花柱短粗，內向彎曲，柱頭頭狀；花梗細長，無毛，長約十五至二十公厘。果實為扁平線形莢果，長十一至十五公分，闊十二至十四公厘，中貯卵圓形種子多枚。

本種產峨眉山西南之峨邊縣沙坪及金口河叢林中。七八月開花，九十月果可成熟。

本種分佈於四川西南部，貴州，雲南。

本種異於他種之點，在其狹窄之莢果，二回摺曲之捲鬚及其中具硬尖之二裂葉片。

圖解： 1. 着花之枝（原大）； 2. 花（放大二倍）； 3. 果實（原大）。

川鄂羊蹄葉

此種在峨眉山之下半部甚為常見。亦產於四川巫山縣，灌縣青城山及西康天全縣等處。

此種分佈於四川，西康，湖北，浙江，福建，江西，湖南，貴州，廣東以及香港等處。



199. *Bauhinia yunnanensis* Franchet

大胸世林在區

廣東省農業科學院

廣東省農業科學院



Plate 200.

BAUHINIA FABERI Oliver.

Leguminosae.

Bauhinia Faberi Oliver in Hooker, Icon. Pl. (1888), t. 1790. - Craib in Sargent, Pl. Wilson. II (1914), 88. - Farrer in Journ. Roy. Hort. Soc. XLII (1918), 61. - Meyer in U.S. Dept. Agric. Bur. Pl. Indust. Inv. Seeds Pl. Imp. XLIII (1918), 40708. - Rehder in Journ. Arn. Arb. VII (1926), 151. - Luetta Chen in Lingn. Sci. Journ. XVIII (1939), 489. - Handel-Mazzetti, Symb. Sinicae, VII, Lieferung 3 (1933), 539.

? *Bauhinia densiflora* Franchet, Pl. Delavay. (1890), 191. - Craib in Sargent Pl. Wilson II (1914), 88.

? *Bauhinia bryoniflora* Franchet, Pl. Delavay. (1890), 191.

Bauhinia Bonattiana Pampanini in Nuov. Giorn. Bot. Ital. XVII (1910), 6.

Bauhinia Cavaleriei Leveille in Fedde, Repert. Spec. Nov. XI (1912), 31.

Bauhinia altifissa Leveille, Fl. Kouy-Tcheou, (1914), 228, pro parte, quoad Esquirol No. 3066 incl.

Erect or climbing shrub; branchlets slender, angulate or subterete, brown or purplish-brown, pubescent. Leaves alternate, subcoriaceous or membranaceous, subrotund or subcordate at the base, bilobed at the apex; sinuses acuminate, reaching to one-third or one-half of the blade; lobes obtuse and subrotund at the apex; upper surface deep green, glabrescent; lower surface pale green or purplish-green, pubescent, papillate; main veins 7-9, obsolete on the upper surface, prominent on the lower surface, middle vein terminated by a stiff mucro 3-5 mm. long; petioles 1.5-2 cm. long, cylindrical, pubescent; stipules linear. Flowers small, in axillary, pedunculated, pubescent racemes 2-2.5 cm. long; bracts paired, pubescent; calyx-tube short, turbinate, 2-3 mm. long; calyx 2-lobed, each lobe slightly 2-lobed near the apex, pubescent and papillate on the outer surface; petals 5, white, spatulate or oblanceolate; stamens 10 usually all fertile, of different length, 5 longer ones 7 mm. in length, 5 shorter ones 4 mm. in length, filaments slender, glabrous, anthers yellow, ellipsoid or oblong-ellipsoid; ovary short-stipitate, tomentose; pedicels 6-9 mm. long, pubescent. Fruit a flat, glabrescent legume 5 cm. long, 9-11 mm. broad, obliquely apiculate on the apex, attenuate at the base.

SOUTHWEST OF MOUNT OMEI: Opien-hsien, S. N. Hsu, No. 71, in 1936.

Distribution: Szechuan, Kweichow, Yunnan, Kwangsi.

Fig. 1, flowering branch (natural size); 2, a flower (enlarged 3 times); 3, a portion of leaf to show the pubescence on the lower surface (enlarged 5 times).

Bauhinia Faberi Oliver var. **microphylla** Oliver ex Craib in Sargent, Pl. Wilson. II (1914), 89. - Luetta Chen in Lingn. Sci. Journ. XVIII (1939), 487. - Handel-Mazzetti, Symb. Sinicae, VII (1933), 539.

SOUTHWEST OF MOUNT OMEI: Opien-hsien, Shaping, in thickets, shrub 2-3 metres high, flowers white, C. L. Sun, No. 640, July 13, 1939; without precise locality, C. W. Yao, No. 4578, in 1929.

SZETCHUAN: Wu-ki-hsien, K. L. Chu, No. 1726, in 1935.

SIKANG: Nitou, west of Han-yuan-hsien, C. S. Liu, No. 579, June 23, 1934.

Distribution: Kansu, Hupeh, Szechuan, Sikang, Yunnan.

Both the species and its variety have been found at southwest of Mount Omei. The occurrence of the variety is rather common than the species. The variety differs from the type species in the smaller leaves which are 6 to 12 mm., or rarely to 2 cm. long, the leaves of the type-species are usually 3.5 to 3 cm. long..... W. P. Fang.

Fig. 3, a fruiting branch (natural size).

圖版二百

費伯羊蹄葉

豆 科

直立或攀援灌木，小枝細長，方形或亞圓柱形，棕色或紫棕色，被絨毛。葉互生，亞革質，或為膜質，基部亞圓形或亞心臟形，先端二裂；凹穴尖銳，深及葉片三分之一或二分之一，裂片鈍形而先端亞圓；葉之表面深綠色，近於平滑無毛；葉背灰綠色或紫綠色，被毛且有小突起；主脈七至九條，在葉表面隱沒，在葉背突起，中脈先端成一硬刺，長三至五公厘；葉柄長十五至二十公厘，圓柱形，被毛；托葉線形。花小，集成腋生具柄被毛之總狀花序，長二十至二十五公厘；苞片成對，被毛；萼筒甚短，扭曲，萼片二裂，裂片長二至三公厘，先端復二裂，外側被毛并有小突起；花瓣五枚，白色，匙形或倒披針形，小蕊十本，常皆具藥，不等長，五本較長約長七公厘，五本較短約長四公厘，花絲細長，平滑無毛，花藥黃色，橢圓形或長方橢圓形；子房具短柄，上被毳毛；花梗長六至九公厘，被毛。果實為扁平莢果，長五公分，闊九至十一公厘，先端尖銳，基部漸狹。

本種產於峨眉山西南之峨邊縣。

本種分佈於四川，貴州，雲南及廣西諸省。

圖解： 1. 着花之枝（原大）； 2. 花（放大五倍）； 3. 葉之一部示葉背之毛被（放大五倍）。

小葉費伯羊蹄葉 變種

此變種產於峨邊縣沙坪叢林中，高二至三公尺，七月開花。

本變種分佈於甘肅，湖北，四川，西康，雲南等省。

此變種及原種均經發現於峨眉山之西南，變種且較原種為多，其與原種主要之區別在於變種之葉甚小僅長六至十二公厘，稀達二公分者，原種之葉較大常長三十五至五十公厘。

圖解： 5. 着果及葉之枝（原大）。



50a. *Bauhinia fabri* Oliver

植物学 植物学



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